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Synchronous online conference-based instruction: A study of whiteboard interactions and student writing

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Abstract

This paper describes a small-scale, empirical study of synchronous conference-based online writing instruction (OWI) using an electronic whiteboard in a professional tutorial setting. Linguistic analysis of participant talk indicated that the interactions were both idea-development focused and task oriented as opposed to socially oriented. The interactions often consisted of detailed dialogue wherein participants used primarily declarative language to give each other information about the writing under development and its processes. However, nearly half of the talk was oriented toward achieving interpersonal connections, facilitating the interaction, and communicating about the whiteboard's workspace. Textual analysis of the drafted student writing subsequent to the instructional interactions indicated that nearly two thirds of the interactions could be connected through iterability or presupposition with the writing and revisions. Most of the traceable writing and revision changes were meaning-preserving in nature and of insignificant to moderate rhetorical force. Such writing and revision changes were generated by students or online instructors or through shared interaction, demonstrating a highly collaborative process. Based on these findings, implications emerge for online instructor training, for student preparation to use whiteboard platforms, and for future research into synchronous conference-based OWI.

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1. Introduction

Online writing instruction (OWI) is any writing instruction—synchronous or asynchronous—that occurs through online media, including both teacher- and tutor-based activities.¹ One might see OWI and its focus on writing instruction as a subset of computer-

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¹ Terminology about teaching and tutoring/supplemental assistance can be contentious because it represents roles that educators value to differing degrees. Webster Newbold (1993) explains that one of the key skills an instructor needs in an OWI-based course is the capacity to *tutor* one's students well using the computer environment. *Tutoring*, in this sense, is a necessary ability to conference with students in online settings, where all online educators must

mediated communication (CMC), which often is seen broadly as “any kind of information sent via networked computers” or narrowly as “instances that approximate unpublished or face-to-face communication—that which approximates talk or informal correspondence between two or more individuals” (Blythe, 2003, p. 118; see also Tornow, 1997; Yancey, 2003). In this article, I address only OWI in the form of synchronous, or real-time, one-to-one conference-based instruction between professional online instructors who provided supplemental (tutorial) assistance and first-year English (FYE) college students using their assistance.

Contemporary educators encounter various synchronous platforms that have been developed for educational purposes, as well as some that have been adapted from recreational or workplace settings. Available platforms often involve more than one instructional strategy, and they usually involve some form of one-to-one or one-to-group conference. For example, a synchronous platform might employ “chat” via some form of real time (“instant”) or near-real time messaging, an educational MOO, an electronic whiteboard with graphical capabilities, or a combination of these. The artifacts of saved and archived synchronous interactions can aid educators and researchers alike in understanding some of the nuances of synchronous conference-based instruction. This article adds to the literature about synchronous online instruction by reporting the results of a small-scale empirical study of synchronous one-to-one conferencing through an electronic whiteboard in a professional tutorial setting. The data indicate that these whiteboard interactions were highly writing task-oriented, as opposed to the social orientation of everyday talk, and focused particularly on developing student writing and/or ideas. The interactions often consisted of extended dialogue wherein participants spoke to each other using declarative statements that provided information about the writing under development and its processes. However, nearly half of the talk was oriented toward interpersonal connections, facilitating the tutorial process, and communicating about using the whiteboard. Textual analysis of the drafted student writing subsequent to the instructional interactions suggested that nearly two thirds of the interactions could be connected through iterability or presupposition with the writing. Most of the connectable writing or revision changes were somewhat minor and/or meaning preserving in nature. Such writing or revision changes were generated by students or online instructors or through shared interaction, demonstrating a highly collaborative process. From these data, I speculate about the practical considerations of conferencing online in a text-based setting where time/space dependencies and task-orientation impose unique boundaries on the interaction, as well as about the processes of online collaboration between instructor and student. Finally, I consider how this study illuminates programmatic needs for instructor training and student preparation, as well as directions for further investigation.

be able to teach students not only with group-based reading and discussion strategies, but also through one-to-one text-based, problem-centered strategies. Because online conferences are used to teach students about writing in both online classroom and supplemental settings, I consider the professional educators who tutored in this study to be *online instructors* with similar goals to traditionally-labeled teachers who work with students in online course settings. Conversely, I simply call undergraduate peer tutors “online peer tutors,” which honors their contribution to online tutoring as peer respondents and consultants while acknowledging their different experiences, backgrounds, and levels of authority relative to a disciplinary area (see also Ehmann, 2003; North, 1982; Thonus, 2001, pp. 61, 77).

1.1. Background

In writing instruction, synchronous platforms can enable participants to address formal or local level concerns, as well as idea generation—supporting student writers at various junctures in their writing development and revision processes. The writing instruction community tends to acknowledge the idea-generating potential of synchronous CMC platforms, which can enable discussions or “conversations” that approximate the give-and-take of oral dialogue among participants. Synchronous OWI may be especially popular with instructors because, as Sara Kimball (1997) has suggested, “we are working in a medium that people perceive and react to both as text and as conversation” (p. 31). Indeed, synchronous online instruction provides a somewhat intuitive venue (Hewett & Ehmann, 2004, p. 116) due to its verbal and essentially hybrid oral and textual nature (Faigley, 1990). These characteristics of synchronous instruction suggest that a best-case instructional scenario probably involves high levels of engaged interaction with dialogue and responsivity among participants.

From a theoretical perspective, online dialogue, like its oral counterpart, presumably can foster collaboration, a concept common to social constructivist epistemology, which holds all knowledge to be socially developed and relative to the group to which it applies. Such dialogue seems natural to developing ideas and discussing writing process with student writers. In my experience, such instructional dialogue also tends to follow a typically nondirective, “hands-off” instructional approach, a concept common to expressivism, which to some degree privileges the writer as the primary genesis for ideas. In contrast to social constructivism, expressivism seeks to keep authorial ownership in the hands of the student writer and may cause instructors to avoid directive language that might be understood as co-opting students’ authority over their writing. These two epistemological constructs coexist in uneasy tension especially when they are enacted in an OWI setting where the instruction occurs through text (Hewett, 2002, 2005c; Hewett & Ehmann, 2004). Taken as a whole, the dialogic potential of the synchronous platform may lead novice online instructors to oversimplify the pedagogical transfer between traditional and synchronous writing instruction. Yet, strong synchronous online instruction does not imply a simple one-to-one transfer of traditional pedagogy, however logical that transfer might at first appear. In fact, it “can be tricky in that it requires highly developed verbal teaching skills and vocabulary about writing along with strategies for encouraging students to commit to writing out their thinking as part of the conference” (Hewett & Ehmann, 2004, p. 116). The goal becomes to “teach through text,” using text primarily, with the potential addition of visual tools like formatting and graphics, to convey what an instructor in a traditional setting might express through combined written and oral pedagogies supplemented by facial/body language and tone.²

Further, in a synchronous setting, online instructors must be able to think quickly about students’ expressed needs and to flexibly adjust both their vocabulary and strategies while

² Teaching through text, which goes beyond holding and participating in online discussions, lecturing by means of digital handouts, or providing summative evaluation of writing, is a challenging pedagogical process. Essentially, the text becomes the instructional voice, which can be stifled by certain interpretations of contemporary theory to online settings. In a book length manuscript in progress (Hewett, 2005c). I consider the theoretical and instructional practices necessary for teaching students through text in online settings.

teaching students accurately. Similarly, students who are uncomfortable with the act of writing in instructional settings may find synchronous conferences more challenging or challenging in different ways from asynchronous instruction because synchronous interactions require real-time participation. Not only do such conferences ask the students to write *about* their own writing, but they ask students to do so *using* writing with sometimes instantly visible text. While Thomas T. Barker and Fred O. Kemp (1990) and others make strong arguments for the benefits of these activities for students in CMC settings, it is important to acknowledge the inherent challenges of synchronous instruction, which may be different for students from, for example, chatting with peers about social-oriented concerns.

Scholars have studied some innovative and technologically sophisticated synchronous technologies for various classroom and other instructional purposes, including teacher and tutor training (Dufflemeyer, 2003; Hewett & Ehmann, 2004; Johanek & Rickly, 1995). Such technologies include educational MOOs (Blythe, 2003; English, 2000; Haynes & Holmevik, 2001; Holmevik & Haynes, 2000; Love, 2000), file sharing with synchronous components (Shewmake & Lambert, 2000; Thurber, 2000), instant messaging or “chat” (Hewett & Hewett, submitted for publication), chat rooms (Yuan, 2003), graphical chat programs (Ingram, Hathorne, & Evans, 2000), audio and video connections (Kim, 2004), and whiteboard technologies (Davis & Hardy, 2003; Enders, 2000).³ One advantage to this technological variety is that a synchronous platform probably exists to address most institutional settings and budgets. One disadvantage is that new platforms continually emerge while educators still do not know enough about instructional talk and its effects on student writing using any one platform in the synchronous modality. This disadvantage leads, in turn, to the challenge of identifying characteristics common to potentially successful interactions and to a stark need for studying and systematizing synchronous online instructional methods for professional development purposes. There is much to learn about conference-based instructional sessions that are synchronous and online, and the notion of instructional success is, as yet, difficult to delineate. Yet, because student success is predicated on educators’ abilities to set the stage for learning, preparing educators to instruct in a variety of online settings is crucial to facilitating learning. Educators need, therefore, more information to develop reasonable expectations for student success and instructor training for all synchronous platforms. The most understudied of synchronous platforms in the context of writing instruction may be whiteboard technology. The research outlined in this article addresses that gap by examining the linguistic functions of talk in one whiteboard-based instructional setting and how that talk appears to have influenced student writing and revision.

2. Study of whiteboard-based OWI

2.1. Description of a whiteboard interaction

Electronic whiteboards, which connect participants through the Internet or an intranet, replicate the rectangular erasable features of a traditional chalkboard, often adding the benefit

³ See also Jay David Bolter (2001), Jay David Bolter and Richard Grusin (1999), Sibylle Gruber (1995), Gail E. Hawisher and Cynthia L. Selfe (1999); Lester Faigley (1992, 1999), George P. Landow (1992) and Linda M. Harasim (1990).

of a printable, save-able study aid. They provide space for interactive, dialogic talk, as well as spaces for importing text, pre-developed examples, heuristics, and graphics. A collaborative electronic whiteboard offers a space that is unlike that of other synchronous technologies (e.g., educational MOOs and “chat,” such as instant messaging). Using the give-and-take interaction of two or more participants to develop the instruction, the whiteboard can be used for chat (although an independent chat box also may be provided).

As [Figure 1](#) shows, electronic whiteboards provide a page-like space for students and instructors to talk, collaborate, record ideas, and draw connections. Online instructors can use the board to state and highlight salient points, encouraging the student to participate and talk as much as possible. Together student and instructor can address problems from original student text as most software enables participants to import and paste text to the whiteboard from another document.⁴ Most whiteboards have text-based affordances like font, size, and color adjustment, as well as graphical drawing tools like lines, arrows, circles, and mathematical or scientific symbols. Such features, which may appeal especially to visual learners and instructors, enable the interaction to take forms other than dialogue alone, combining and replicating to some degree the features of traditional oral and written instructional talk, as well as enabling the type of formative and summative instruction possible with such media as a chalkboard, overhead projector, or even email. In [Figure 1](#), for instance, the online instructor has encouraged the student to work through the process of topic development and has enabled a fairly coherent use of whiteboard space by directing the student to different physical locations on the board and by connecting the thinking process with graphical markers and symbols.

Often, whiteboard technology enables a practice space for participants to familiarize themselves and practice with the whiteboard’s features. Depending on the software design, the whiteboard interaction appears almost simultaneously—in real time—when either participant types. Also depending on the software, the synchronous interaction may be visible to those students waiting in a queue to work with their online instructors or with each other. From a pedagogical standpoint, this viewing feature may engage the kinds of collaborative learning that typically occur in a traditional classroom because students who view others’ conferences potentially can learn from the conference itself without active participation.

2.2. *Participants and data collection*

To learn more about synchronous instructional interactions generally and about synchronous whiteboard instruction specifically, I studied how participants talk in such interactions, and then I used textual analysis to consider how students might employ the interactions when developing their writing. To isolate the features of these interactions, I chose not to compare these with oral or other online interactions—synchronous or asynchronous. During the

⁴ Particular software archives different portions of the text. For example, unless otherwise enabled administratively, Blackboard facilitates capturing text and collaborating on the whiteboard, but saves only the chat and not the board work. Conversely, Link-Systems, Intl.’s whiteboard, leased by Smarthinking, Inc. at the time of the study, saved the board and not the chat, and it provided one 8.5 in. × 11 in. page per interaction. In contrast, some software like Microsoft’s NetMeeting might archive both the chat and the whiteboard, as well as providing file sharing capabilities.

Good Evening! My name is Judy. How can I help you? done

Hi Michael, is this category appropriate for what you want to do...or would some different words be more accurate? done

it is close to what i had in mind but i was thinking more along the lines of how parenting skills contribute to youth violence but this seems to be just as good done

Ok. We'll use it as a "working" category. Would you now make a list of the ways that parents (or parenting skills) contribute to youth violence. Let's see what you come up with. done

that's what i have so far done

REMEMBER

These look pretty good to me. Have you "evaluated" each one to see if it fits your thesis? to see if wording can be made more precise/accurate? to see what order you would like to place them in your paper? done

Would you write your thesis on the board? done

done

Would you like to work on the wording of your assertion first? done

yeah

What noun does "they" refer to? done

it would be referring to youth's involved in youth violence done

Good. You'll want to add those words to the final version, ok? Otherwise, your readers won't know for sure what you mean. Do you see any other words that you would like to change? done

no none that i see done

Those words need different word endings. done

ok

Would you write a new version, please? done

done

Ok. You'll still need to find a more concrete word or words for "they." But for now, are you considering your list above as the heart of some of the topic sentences for your essay? If so, would you like to turn them into topic sentences? OR is there something else that I could help you with? done

i shouldn't have problems with creating the topic sentences, but i do need help dividing my ideas into more concrete ideas that i can better explain done

Michael, we're running out of space and time, but do you see from the process above one way to go about expanding on your ideas and making them more concrete? done

yes i do have a better understanding, and this will help writing the essay much easier done

Another important thing to do is to word each topic sentence so that it directly supports your thesis. Also, if you say something about a lack of morals, your support will have to explain that. Therefore, use your words as precisely as possible. Is there anything else I can help you with tonight? done

no this should be a good start for me

I enjoyed working with you. Please come back later if you have more questions or just want to "kick" some ideas around. Good luck! done

thanks

Good night! done

Ways Parents Contribute to Youth Violence

1. lack of parental involvement
2. lack of a good house hold, and or both parents
3. violent parents, bad role models
4. unsable home environment

Finding Support

Thesis/Assertion:

youth violence has been affect over the past 10 years by the actions of the adult whom they have been around

REVISED Thesis/Assertion:

Youth violence has been affected over the past 10 years by the actions of the adults whom they have been around

Find a more concrete word for "they."

Ok. Let's take "lack of parental involvement." First, turn it into a topic sentence, and then let's look at what needs to be done. (done)

lack of parental involvement cause children to become violent because of a lack of good morals done

I'm not clear about how one causes the other. How are you defining "parental involvement"? done

parental involvement im defining as how the parent interacts with the children on a daily basis That sounds like "parent interaction" rather than "involvement.

Make a list of "activities" or "events" that would make parental involvement more conr. etc:

1. talking with your children (You could make a list of examples here.)
2. becoming involved with what your children do, such as music, video games (You could create scenarios, add more details, explain advantages.)
3. knowing what your children are doing done (You could explain what can happen when parents don't stay "current.")

Fig. 1. Synchronous whiteboard interaction.

2001–2002 and 2002–2003 school years, I studied fifty-two online interactions from twenty-three undergraduate students enrolled in my first year English classes at a branch campus of the Pennsylvania State University (PSU). The students had used the professional tutorial services provided by an online learning center, Smarthinking, Inc., which included both asynchronous essay review and synchronous whiteboard tutorials. I consider only the synchronous interac-

tions here. Informed consent included permission to excerpt writing and/or tutorial interactions in published research. Twenty-one of the students in the selected study group were between ages 17 to 25; two were of nontraditional ages.⁵

Students worked toward a final portfolio, worth 60% of the final grade, in which they showcased a metacognitive learning letter and three expository and argumentative pieces developed and revised over the course of the semester. I required that they use the synchronous instructional services once early in the semester, and because their PSU branch campus did not provide either a traditional or online writing center, I mentioned the service's availability in every written assignment and encouraged students to use it often. Students received extensive technological orientation to the online site through course-related projects that introduced and used the synchronous platform, as well as follow-up guidance during individual conferences.

Fourteen different online instructors, each of whom also was an experienced instructor for college courses in traditional and distance settings, worked with this student group.⁶ Their formal qualifications included a PhD, MA, or related graduate studies; experience as a classroom writing teacher; and OWI training and experience with Smarthinking's Online Writing Program. They received guidance in synchronous tutoring and asynchronous essay conferencing, which included attention to contemporary composition theory, practical simulations, and mentoring from experienced online instructors (see Hewett & Ehmann, 2004, for some specifics of this training). Of note, online instructors generally were encouraged to keep the interaction on the whiteboard, which could be archived to create study aids for students, and to avoid the chat box, where talk would not be saved by the technology.

2.3. Requested assistance

Students initiated the online conferences and self-presented their primary concerns. Thirteen (25%) of the interactions focused on general idea development particular to the content and context of their writing; 32 (62%) focused on particular processes and problem solving such ways to revise a thesis, support an argument, or organize paragraphs; and 7 (13%) focused on formal concerns like grammar, mechanics, or (most frequently) source citation practices. The vast majority of the 52 interactions focused on the kind of prewriting work that might be called "brainstorming" (44, or 85%). Of these, 18 (41%) interactions sought help with developing an idea in general: "Can you help me find ways to explore this [topic]?" and "Do you think my topic sounds interesting and logical?" 14 (32%) requested specific assistance with developing, refining, or supporting a thesis sentence: "Does my assertion sound clear?" and "I am trying to write my assertion but I am stumped. I want to write on TV violence, but I feel that it comes from TV and parents. Any suggestions?" Other idea-based concerns focused on developing

⁵ Qualification for the study included informed consent and completed final portfolios. Whiteboard interactions qualified for the study when there was no evidence of a self-limiting technical problem and when the substantive part of the interaction occurred on the whiteboard and not in the chat line, which did not "save" with the archived board.

⁶ Students had afternoon and evening synchronous access to these instructors as a "bundled" service available with the initial purchase of their writing handbooks, *Keys for Writers* (Raimes, 2002). Since online students other than those in the study also used this book, the online instructors were not directly aware of which students were in the study.

Table 1
Linguistic analysis taxonomy

Writing (W)				Tutorial (T)				Phatic (H)
Inform (I)	Direct (D)	Elicit (E)	Suggest (S)	Inform (I)	Direct (D)	Elicit (E)	Suggest (S)	
Content (C) →				Content (C) →				
Form (F) →				Form (F) →				
Process (P) →				Process (P) →				
Context (X) →				Context (X) →				
Reference (R) →				Reference (R) →				

an introduction (3, or 7%), conclusion (4, or 9%), counter arguments (3, or 7%), conducting field research (1, or 2%), and organizational strategies (1, or 2%). By contrast, only 8 (15%) of the 52 interactions focused on surface-based or formal concerns. In these cases, students requested help with MLA citation and title conventions (4, or 50%), transitions (2, or 25%), sentence clarity (1, or 12.5%), and comma splices (1, or 12.5%).⁷

2.4. Linguistic analysis

To consider what kinds of language the participants used in the whiteboard interactions, I used a linguistic analytical tool developed first by Ann Gere and Robert Abbott (1985) and extended to online peer response and asynchronous OWI by Beth L. Hewett (1998, 2000, 2005a, 2005b), as shown in Table 1.⁸ One benefit to this coding instrument is that it has maintained its initial theoretical integrity while flexing to incorporate a developing understanding of interactions in different online modalities and platforms. Additionally, the process of refining and using this coding instrument in various oral and online settings responds to a vital need for developing what Richard Haswell (2005) calls “replicable, aggregable, and data supported (p. 201),” or RAD studies that build on and extend past researched knowledge bases in composition studies. Such studies are critical to a discipline that examines the artifacts of its own teaching as a means of theorizing and improving practice and student learning.

I began by separating participant talk into idea units (IUs), or chunks of linguistic information that Gere and Abbott (1985) define as “segments of discourse that coincide with a person’s focus of attention” and that “reflect the speaker’s object of consciousness” (p. 367). IUs are variable in length. They can be as short as one word (e.g., “yes,” or “Hello!”) or as long as a full sentence (e.g., “It looks like about here you veer away from talking about social standing

⁷ It is interesting that so few of the whiteboard interactions concerned the lower order concerns of sentence structure, grammar, and mechanics. Experience and observation have shown me that the whiteboard, which can be archived as a study aid, offers a useful space for teaching and modeling such concerns because, like a traditional chalkboard, it provides open space to encourage guided student practice.

⁸ Others, of course, have seen these same categories at work in their research into instructional response, even though they may not have considered them for an analytical framework in their studies. For example, Richard Straub (1996) identifies teachers as offering information (“qualified evaluations”), directions (“advice”), and suggestions (pp. 383, 390); Straub prefers the suggesting mode, as does Summer Smith (1997). Frances Zak (1990) defines as “advice” both suggestions and directions. See also Joan Hawthorne (2002), Susan R. Blau, John Hall, and Tracy Strauss (1998), and Patrick Slattery (1990).

and into character relationships” and “A comma after ‘stubborn’ would have helped me avoid that momentary confusion”). Or, IUs can comprise simple phrases where each phrase reveals a different linguistic function, area of attention, or focus of consciousness (e.g., two IUs: “I’m missing the first sentences you included in the other argument — // the sentences that let me know what point of view I’m in. . .”). In oral talk, IUs reveal their boundaries through intonation, pauses, and syntax. In written conversation, synchronous chat, or asynchronous instructional commentary, where intonation and pauses must be conveyed textually, IUs are revealed by syntax, grammatical boundaries, punctuation (such as hyphens or ellipses), and obvious shifts in subject. Each IU is sorted into three categories (linguistic function, general area of attention, and focus of consciousness) or into an exclusive fourth category (a phatic utterance). Two coders, of whom I was one, agreed on approximately 85% of the coding in five test cases. We reached fuller agreement after discussion, and I used the test coding to refine coding explanations and synchronous examples in the rubric (appendix A).

Category 1 addressed four primary linguistic functions of the IU: *Inform* (I), *Direct* (D), *Elicit* (E), and *Suggest* (S); the first three are direct speech acts where form and function match and the fourth is an indirect speech act where form and function do not match. *Category 2* addressed one of two possible general areas of attention of the IU. In this coding instrument, that area can be either the *writing* (W) itself, or the instructional or *tutorial* (T), interaction. *Category 3* addressed the specific focus of consciousness of the language. There are five possibilities: *content* (C), *form* (F), *process* (P), *context* (X), and *reference* (R). *Category 4* regarded the *phatic* (H) nature of certain utterances that can be understood as an online version of a placeholder or back channel cue that keeps open the communicative lines (e.g., “*hmmm*,” “*ok*,” or “*thinking*”). In sum, there were forty-one possible types of IU, each represented by three letters (with the exception of the single letter “H” for a phatic utterance). For example, *IWC* is an IU that *Informs* about *Writing Content*. *ITR* *Informs* about the *Tutorial Reference*. *DWF* is an IU that *Directs* about *Writing Form*, *EWX* *Elicits* about *Writing Context*, and *SWP* *Suggests* about *Writing Process*.

3. Conference focus: idea development, task-orientation, and making connections

Participants wrote (“spoke”) a total of 4164 IUs in 52 whiteboard interactions (students: 1711, or 41% of the total IUs; instructors: 2453, or 59% of the total IUs). First, I eliminated those subcategories where the total frequencies were too few to conduct a MANOVA test (zero occurrences: ITF, DTF, ETF, STC, and STF; less than 30 occurrences: DWX, DWP, DWR, DTC, DTX, DTR, ETX, SWR, STC, and STR). I ran an ANOVA on the remaining 26 subcategories. Online instructor and student IUs were compared regarding these subcategories, as well as separately using the major categories of linguistic functions, areas of attention, and foci of consciousness. Table 2 shows the *f* and *p* values for those subcategories that either online instructors or students used most frequently, or in statistically significant ways (where *p* is >.05), as well as those categories that overlap and show similar frequency of use (or “dominance”) for both online instructors and students.

Table 2 shows that both online instructors and students used a broad range of IU types in these interactions although significant patterns of dominance did emerge. A separate ANOVA

Table 2

One-way ANOVA for idea unit (IU) subcategory comparisons by online instructor and students

	<i>f</i> Value	<i>p</i> Value
Instructor-dominated IU types		
IWF	5.23	.024
DWF	4.60	.034
DTP	25.92	.000
EWC	5.79	.018
EWX	29.11	.000
ETC	10.10	.002
SWC	14.11	.000
SWX	10.4	.002
SWP	24.19	.000
STP	11.72	.001
Student-dominated IU types		
IWC	22.57	.000
IWX	24.74	.000
IWP	7.31	.008
ITX	0.09	.768
EWF	1.38	.243
EWP	0.63	.430
Overlapping IU types		
IWR	0.01	.931
ITC	1.00	.320
EWR	3.51	.064
ETP	0.41	.524
ETR	2.31	.132
H	2.06	.154
Overlapping IU types (instructor-dominated)		
ITP	1.59	.211
SWF	3.10	.081
STX	2.59	.110
Overlapping IU types (student-dominated)		
ITR	1.61	.208

of *linguistic functions* alone (*inform*, *direct*, *elicit*, and *suggest*) reveals that while students more frequently used *inform* IUs (I₋), online instructors more frequently used IUs that *direct* (D₋), *elicit* (E₋), and *suggest* (S₋). Participants overlapped in terms of *phatic* (H) language in all cases. These areas of participant “dominance” make sense intuitively. For example, it is not surprising that students would use language that informs about writing content (IWC) and context (IWX) in a conference where they are explaining their writing plans and responding to questions about the writing concerns they have. Neither is it surprising that the online instructors might use similarly declarative language to explain the formal qualities of the students writing (IWF) more frequently than students who, interestingly enough, asked questions about their writing form (EWF) about as often as the online instructors did.

Overall, my analysis showed a remarkably high amount of language that *informs*, which comprises IUs that match in form (declarative) and function (to tell) for both students and

instructors. They most often discussed ideas and processes.⁹ Although students initiated some of their own descriptions of their writing, many of the students' declarative statements were formulated in response to instructional comments and questions (elicitations) about the writing, which might account for the students' exceptionally high frequencies of content (IWC), context (IWX), and process-based (IWP) IUs. Because most of the instructional interactions addressed idea-development issues in terms of content and context, declarative and explanatory statements certainly would seem to be an appropriate linguistic choice. One might recognize such talk as consonant with contemporary thinking about instructional and tutorial dialogue that approximates a conversation (e.g., Student: "I have finally made my assertion better to understand." Online instructor: "You've done good work here today."), and composition specialists have long agreed that the conversational nature of a synchronous conference is a desirable trait.

Elicitations are IUs that match in form (interrogative) and function (to ask or question). The online instructors used this linguistic function fairly often, as their dominance of questions about writing content (EWC) and context (EWX), as well as those about tutorial content (ETC), might suggest. From the instructional perspective, contemporary pedagogy favors a questioning strategy; additionally, in a supplemental setting, these online instructors likely needed to ask many questions of students to formulate their instructional strategy for the interaction. Thus, as one might expect in a student/instructor interaction where the medium favors both expressivist and social constructivist practices, the online instructors elicited more frequently (e.g., "What is the main point that you want to talk about here?"). Students, on the other hand, asked questions infrequently (e.g., "Does my assertion sound clear enough?"), never dominating and only overlapping the online instructors in terms of questions about writing form (EWF), questions that reference the writing or previous statements (EWR), and questions about the tutorial process (ETP) or reference (ETR). One might be surprised about this infrequent occurrence of questions in a forum where students were encouraged to ask for assistance from more experienced writers; the interrogative would seem to be natural to the synchronous tutorial. Indeed, given the value that contemporary writing pedagogy places on questioning as an instructional method, it seems curious that questioning was not a more frequent activity in these interactions as a whole.

The analysis also shows language that conforms to contemporary practice in the area of IUs that *direct*. Such IUs match in form (imperative) and function (to command). Typically, straightforward directions that might appear to command a student's next steps or approach to a topic are eschewed by writing specialists as talk that can usurp or appropriate the writer's personal authority over the writing; to some degree, this hands-off approach to student writing began in the 1980s and has remained intact since (see, for example, Greenhalgh, 1992; North, 1984; Sommers, 1982; Straub, 1996). Thus, it is not surprising that despite instructor dominance in this linguistic function, exceptionally little of the instructor talk used imperative statements to direct students about either the writing form (DWF) or the tutorial processes (DTP). An example of a somewhat-rare direction about writing processes is also a very natural one about using MLA citation style: "First, you should introduce the book by title, author, and date it was written." And, as seems typical of students who may believe that they have

⁹ Percentages are calculated separately for students and online instructors and include phatic utterances.

no inherent authority in an instructional setting, even less of the student talk used imperative language to direct the interaction. Indeed, contextually, many students' written directions actually were *self-directing* statements about their own writing processes and content—in effect, self-generated and self-focused directions (e.g., “I am going to try the paper with the different assertion.”)¹⁰

IUs coded as *suggestions* are indirect speech acts that mix form and function, and I speculate that they represent an attempt to communicate the instructor's perception of a student's next possible steps in a polite, indirect manner that avoids saying what to do in straightforward, potentially directive language (Hewett, 2005c). At times, instructional suggestions seem designed specifically to avoid offering any concrete writing lesson or instructional opinion that might be interpreted as “co-opting” the students' writing or thinking processes. Typically, suggestions have the function of commands or directions offered indirectly and politely in the forms of interrogative or declarative statements and rhetorical questions. They tend to use conditionals, modals, and punctuation like question marks in otherwise declarative syntax (e.g., “You might want to check a style manual for the different ways these words are used.” or “I'm not sure I'm convinced that what you witnessed here qualifies as concern to prevent a future murderer?”). Suggestions appear to have an instructional goal of gently pushing the student toward an action that the instructor believes would be helpful while acting as if the student's choice not to do so would be an equally effective decision.¹¹ Overall, suggestions were rarely written by students, whose uses overlapped in terms of suggestions about writing form (SWF) and tutorial context (STX). The online instructors much more frequently wrote suggestions about writing content (SWC), context (SWX), process (SWP) and tutorial processes (STP).

Finally, there were relatively few IUs that appear to have the *phatic* (H) intention of backchannel cues or placeholders that provide a sense of uninterrupted connection between participants. Nonetheless, there were enough phatic utterances to indicate that participants tried to remain connected on a “human” level. Online instructors and students overlapped in their frequencies of phatic IUs, which suggests a common desire to remain connected and to signal their continuing presence. For example, in a synchronous setting, a lapse in time between one participant's typed message and another's might indicate an interrupted technical connection, which ruptures the interaction completely, or even an interrupted mental connection through multitasking activities, which may create a short (or prolonged) lack of attention to the conference. Beyond such occurrences, though, which may not be repaired by phatic language, people often just need time to think, and it is here that the backchannel cues of “thinking” and “hmmm” signal to the other participant an ongoing interaction. Indeed, as

¹⁰ In a study of participant talk in face-to-face conferences, Christa Ehmann (2003) used a different framework to investigate the talk in peer tutorial conferences, finding an approximate 60%/40% split with tutors having the majority of the talk. She surmised that “while tutors dominated the minority of tutorials in terms of their initiatory moves and amount of talk, the majority of tutorials showed signs that tutees also were actively contributing to tutorials in this regard.” Further, “it was clear that the majority of tutors and tutees were preoccupied with meeting course requirements, understanding professor-specific approaches to particular problems, and following assignment guidelines for various projects that eventually would be graded”—all task-oriented types of interactions somewhat similar to those found in this research (pp. 192–193).

¹¹ For a deeper discussions of form and function, as well as other issues surrounding suggestions, see Beth L. Hewett (2005a, 2005c). See also Irene Clark (2001).

Table 3

One-way ANOVA for idea unit (IU) area of attention compared by online instructor and students

Overlapping area of attention IU types	<i>f</i> Value	<i>p</i> Value
Writing (W)	1.01	.317
Tutoring (T)	0.12	.727
Phatic (H)	1.67	.199

Tables 3 and 4 show, a sense of dialogic interaction likely was aided by IUs that address the *tutorial process* and *writing and tutorial reference*, which would make phatic IUs simply one of several ways for participants to connect interpersonally on a platform where keystrokes indicated the presence and attention of the other and, in that sense, implied “connection.”

A consideration of *area of attention* benefits this picture of linguistic function by complicating it. Discerning whether the participants talked about the *writing* (_W_) or about the *tutorial* (_T_) interaction itself is important to understanding their interactions overall. Slightly more than half of the student-written IUs regarded *writing* versus the *tutorial* interaction, while in an overlapping manner the same was true of the online instructors. In other words, neither dominated either area of attention. It seems somewhat surprising that only half of the whiteboard talk as measured by IUs was writing-centered given the context of a synchronous interaction *about* writing. As both a classroom instructor and researcher, I had anticipated, instead, that the vast majority of the talk would have focused on the writing process or the writing itself. The obvious flip side of this finding is that an interestingly large amount of talk focused on the tutorial interaction itself and not on writing concerns. Contextually, it seems important to note that when participant talk did not focus on the writing, the talk reflected interactions that were focused particularly on the tutorial process itself and not on social talk or outside activities—indicating a general seriousness of purpose. The IT category shows the highest overlapping frequency for both writers and online instructors. These results can be explained partially by the preponderance of *inform tutorial* (IT) talk, which I will discuss in more depth in connection both to Tables 3 and 4.

Finally, Table 4 depicts IU frequencies by *focus of consciousness*: whether the interaction addressed the writing or tutorial *content* (_C_), *form* (_F_), *context* (_X_), *process* (_P_), or *reference* (_R). With the exception of *process*-based IUs, all of these IU categories overlapped

Table 4

One-way ANOVA for idea unit (IU) focus of consciousness compared by online instructor and students

	<i>f</i> Value	<i>p</i> Value
Instructor-dominated IU types		
Process (P)	7.03	.009
Overlapping area of attention IU types		
Content (C)	2.11	.150
Reference (R)	0.09	.764
Phatic (H)	1.51	.222
Overlapping IU types (instructor-dominated)		
Form (F)	2.90	.092
Context (X)	0.98	.325

to some degree, with content and reference used fairly equally among participants and form and context slightly dominated by the online instructors. Among IUs that address writing, the frequencies for both online instructors and students are highest for IUs about writing content and context. Because content and context tend to address both idea generation and existing written ideas and statements, their higher frequencies among both students and online instructors seem appropriate and somewhat natural to the online synchronous conferences (Hewett, 1998, 2000). Indeed, a deliberate focus on developing instructional interactions that consider content and context seems to be a reasonable goal for synchronous instruction, where dialogue can support spontaneity and collaborative thinking.

Not surprisingly, the online instructors talked more frequently about writing process overall; given their instructional and/or experienced role as informants about writing overall, their dominant discussion about the processes of writing—as opposed to the students’ content and context for their writing—seems appropriate. The instructors’ talk dominated just slightly regarding the overlapping categories of writing form and context, whereas the students had an overall lower focus on formal concerns in their synchronous interactions. Both online instructors and students overlapped regarding writing reference IUs although there were few of these IUs overall. For students, these IUs often were written in response to the few questions from the online instructors; contextually, however, it makes sense that the presence of few writing-related questions (EW_) leads to few writing-referential responses (_WR).

When the information presented in Tables 3 and 4 is considered together, IUs addressing the tutorial content, context, process, and reference are perhaps most interesting. Among other information, tutorial content IUs like ITC provided contextually necessary greetings (e.g., “My name is Tom”) where the names were not automatically revealed by the platform and, therefore, visible to both participants, as well as closings (“I’m finished for now”) and introductory information for beginning the interaction (“So if I understand you right, [ITC] // the test focuses primarily on grammar. [ITC] // Is that right?” [ETR]). Tutorial context IUs like ITX, on the other hand, address socially necessary greetings (“Hi Maria”) and closings (“Good luck with your drafting!”), which were particularly frequent because online instructors often used them for well-wishing at the end of a conference. Such IUs also reveal topics unrelated to the writing but related to the tutorial as a discrete session (e.g., “Let’s make sure you and I are talking about the same thing here”); these IUs would include statements of appreciation for the time spent in an interaction. ITX IUs tended to assist interactions in terms of politeness, orientation to and facilitation of writing on the whiteboard, and responses and references to the interaction itself. Such conventions may be essential to forming an interpersonal instructional relationship in a faceless environment.¹²

Tutorial process (_TP) IUs, which were by far the most frequent focus of consciousness in the tutorial category and used much more frequently by the online instructors, addressed such procedural issues as how to use the whiteboard, when and where to type, how to use linked resources, and where to locate the archived interaction (e.g., “I’ll write some headings and you can write the best definition that you have under the headings.”). There was no significant

¹² Although socially necessary initial greetings and self-introductions typically would be included in this category, most greetings in this whiteboard platform were of the tutorial content (_TC)-type. I speculate that they added to a sense of connection between participants.

difference between participants regarding tutorial reference (_TR) IUs (e.g., “I’ve worked with you before”).

When one adds to tutorial process IUs the frequencies of tutorial reference (_TR) (e.g., “And, yes the instructor is giving us permission to go on our own experiences and thoughts.”) and phatic IUs, it becomes clear that participants used a great deal of such talk to connect, guide, and follow one another through the instructional interaction. These frequencies may be higher than those found in oral conversations where body language, facial expressions, and intonation offer cues that facilitate the talk. Hewett (1998, 2000) found a similar pattern in the study that compared oral and CMC-based peer response group talk. Thus, the online instructors used such deliberate cues as “done” to contextually indicate turn taking and “thinking” or “hmmm” to indicate continued phatic presence during the silence of board inactivity, and they taught these cues to students either directly or through modeling. As Figure 1 demonstrates, some online instructors also directed students verbally and graphically to particular spaces on the whiteboard for their responses and provided explicit guidance about what and where to write next. These activities seemed designed not only for instructional goals, but also to keep the interaction moving at a pace and depth that addressed participant interest levels and interactivity, which may have helped to keep both participants engaged in the instructional process overall.

3.1. Revision study: collaboration in action

3.1.1. Writing development

Beyond linguistic function and the types of communicative utterances the IU categories represent, it is important to consider whether these instructional interactions were efficacious in terms of student writing development. To gain a sense of how students applied these interactions to their writing-in-progress, I conducted a textual analysis of the interactions alongside all the drafts of the essay involved as well as all available drafts of subsequent writing from any assignment placed within the final portfolio. Because my study design and dual instructor/researcher responsibilities to student anonymity during data collection precluded such methods as student interviews directly following the tutorials, I specifically looked for textual evidence that revealed iterability or presupposition about the interaction. Thus, the changes I recorded provide textual evidence that is highly suggestive of instructional influence and participant collaboration but do not represent all of the possible writing decisions or thinking processes that students developed from any one interaction or series of interactions. For example, in one interaction the instructor and student discussed topic sentence possibilities. When the student wrote on the whiteboard, “Lack of parental involvement causes children to become violent because of a lack of morals,” the online instructor cautioned him to define words like “morals” because he would have to provide support for his ideas. The student used a variation of this sentence in his next draft’s introduction to define his terms: “Good parents and a solid household for the purposes of this paper are parents who try to bring in a good set of morals and basic rules for behavior and a household lacking in fighting, and conflict seen so much in many modern homes.”

Writing development and revision changes were generated by the students, by the online instructors, and through collaborative interaction between student and instructor. For instance,

when a student brought an idea to the interaction as one that he or she wanted to include but had not yet included in the writing, as evidenced by the previous drafts, typically that self-generated idea was included in the next draft and often used exact or remarkably similar wording that the student had written on the whiteboard. An example of such self-generation occurred when one student repeatedly wrote this idea in the interaction: “I want to say that it is the parents who are the major influence in violence.” In her next draft, she wrote: “Parents have the greatest influence on their children.”

Of the 52 interactions, 38 (73%) revealed textual evidence of connection to a particular essay draft, and three from that group showed multiple levels/types of developmental connections or revision changes with apparent roots to a single synchronous conference. Such roots occasionally revealed highly collaborative idea development wherein participants built on each other’s statements and the student subsequently used their collaborative work to generate parts of the next draft. For example, in the first interaction regarding her essay, a student wrote this thesis on the whiteboard: “Although the media is often blamed for youth violence, the real problem is psychological problems.” In their work together, where the online instructor encouraged the student to “experiment,” the student wrote this revised sentence on the whiteboard: “Although the media is often blamed for youth violence, the actual problem starts with experiences in a child’s life that causes emotional damage.” However, when the student stated that she worried the sentence was too broad, the instructor offered her several alternatives for tightening its focus:

You could limit the scope by writing “certain life experiences that cause emotional damage” or you could write, “the actual cause is more likely to be found in experiences that. . .” OR change the sentence structure. E.g., “It is the psychologically damaged youth who resorts to violence” or another version. My thought is that until you get your thesis clarified, the direction of your paper will remain elusive.

The student then asked: “By saying that, could I then use examples of bullying, drugs, and abusive homes?” to which the online instructor replied affirmatively. The student’s first full draft revealed the following thesis, which demonstrates a collaborative origination from both her own thinking and that of the online instructor: “Although the media is often blamed for youth violence, it is the psychologically damaged youths that most often resort to violence.” She then incorporated their work more deeply into her writing, and in the first full paragraph after the thesis she wrote: “One of the reasons children become psychologically damaged is because of being bullied.” Later, her second draft added a new paragraph about this line of thinking that began: “The other reason that I believe children turn violent is because of pre-existing psychological problems along with the medications prescribed to treat them.” This added paragraph reveals that the student continued to think about the ideas that she had originally expressed in the interaction—her self-generated ideas—along with those ideas generated collaboratively. Finally, her third draft added a full paragraph developed around her idea about emotional damage expressed early in the tutorial: “Children who experience violence or neglect in their homes can become psychologically damaged and resort to violence.”

The textual evidence revealed in this example was typical of those that I counted as connected to the instructional interactions, and it speaks to the rich levels of collaboration that online instructors can reach with their students in synchronous online conferences. Although

some might be concerned that such online conferences either appropriate student writing or do the student's work by "giving the answer," my observations and experiences have been that online instructors who have been inculcated into contemporary composition pedagogy and theory try hard not to co-opt student writing or to provide inappropriately directive advice.¹³ As evidenced in these examples, the free give-and-take of ideas enabled the participants to work together toward a solution for the student's writing problem. Such is the essence of teaching, and especially of teaching online. The act of teaching online whether synchronously or asynchronously, as I said in the beginning of this article, is the act of teaching through text. And, without the freedom *to use text* to talk about and develop ideas fully, the instructor is unduly hampered, her voice stifled. It seems important, therefore, to remember that collaboration is interactive in terms of sharing thoughts and generating ideas, and that a natural result of interactivity is a new or different way of thinking that may emerge in one's writing—often closely resembling the writing developed together. In this sense, the online conferences in this study appeared to have used textual talk and instruction both appropriately and efficaciously.

Fourteen (27%) of the instructional interactions were not textually traceable to any writing development or revision changes within a particular essay or subsequent drafts. These results may have had various origins, each of which suggests that students had the capacity to make choices and take ownership of their writing. Some students, for example, seem to have come to the online conference seeking reassurance about writing decisions they had already made, checking out the classroom instructor's advice against that of an outside reader—a not-uncommon scenario in the context of supplemental writing assistance. In such cases, if the student had received reassurance (and sometimes even if it was not offered), the student's writing did not change as a result of the online conference. For example, one student wrote in his conference that he was going to write an encomium about Mario Lemieux. His stated thesis was: "For these reasons, Mario should be held in the highest honor both as an athlete and a humanitarian." Then, the student wrote: "I'm probably going to emphasize his work as a humanitarian, but also include all of his career stats and awards. Is that a good approach?" The online instructor's reply, a somewhat tentative, "I think so," seems to have

¹³ Indeed, in informal poststudy surveys, the online instructors revealed their intent to avoid directive language and appropriating student writing:

Online instructor A: The student was highly responsive. I focused on keeping him active by using questions to guide him and avoided, for the most part, being too directive. I think that we addressed a concept (what an assertion looks like) that he will be able to use in the future.

Online instructor B: The student wanted confirmation that her thesis and the one point of support she had decided upon were valid. She needed other points of support but had not done enough research to decide on those. Our tutorial time was up, so rather than asking leading questions to get her to think about other points of support, I "gave" her direction in her research. I suggested a couple of avenues she might research. Had the tutorial been longer, I would have preferred to draw the ideas out of her.

On the other hand, despite general indications of satisfaction, in a survey that asked how the synchronous interactions could have been more helpful to them, a number of students indicated that they actually needed more straightforward advice and clearer statements of what would improve their writing. For example: (A) "More direct help. More in depth"; (B) "Sometimes I think tutors beat around the bush too much and that can be confusing; they should be straightforward with what their saying"; and (C) "She needed to explain what she meant a little better. She didn't really get into too much detail to explain herself and her suggestions."

supported the student's plan, and he included his thesis in his next draft exactly as previously described.

Three other possible reasons for lack of textually traceable connection between subsequent writing and the instructional interactions include (1) self-directed writing goals that the student brought to the conference and retained after the interaction, (2) subsequent student thinking and writing development that precluded or negated the processes or concerns of the interaction, and (3) insubstantial interaction between participants where either party evidenced lack of engagement in the conference. My analysis showed that unconnected writing and revision choices could occur regardless of the participants' apparent engagement with respect to interpersonal interactions, pedagogical strategies like modeling and urging the student to practice and write on the board, ample focus on and attention to the student's stated concerns, or the instructor's experienced understanding of those concerns. For those few interactions that suggested superficial engagement or interest level among the student, the online instructor, and the student's stated concerns, there was a sense of simply meeting online because it was expected: the student asked a question in a perfunctory manner, the instructor responded to it, and the student chose not to pursue more information or respond to further questions. Indeed, when the student entered the interaction with suboptimal interest, it appeared that the online instructor was reluctant to push the student, compliantly enabling the student to set both a shallow agenda and a minimal level of interactivity. Occasionally, I found what I might categorize as unclear or incorrect advice in the conferences, yet I did not find any evidence that students made writing choices with regard to instructional clarity or correctness as they wrote their next essay drafts. In other words, they ignored the advice, tried to follow it anyway, or seemed to derive some benefit from the session despite the weaker advice—with no particular pattern emerging in the data. Finally, one of the online conferences in this group appeared to lead directly to the focus of a second online conference, which textual evidence connects to the next draft.

3.1.2. *Revision change categories*

Lester Faigley and Stephen Witte's (1981) revision change taxonomy provided language for categorizing writing development or change subsequent to the synchronous conferences: surface formal, meaning preserving, microstructural meaning altering, and macrostructural meaning altering. Within these categories, only the macrostructural changes are understood to change a reader's understanding of the essay while the other revision change categories might change an essay's surface structure, preserve its meaning through various revision operations (addition, deletion, substitution, permutation, consolidation, and distribution), or change its meaning using the same types of operations at microstructural levels.

None of the essay drafts (0%) appeared to have any surface formal connections related to the synchronous conferences, which seems natural for students with idea development goals. However, for those who asked specifically for help at the formal level, an interview directly following the drafting process would have been enlightening. Ten (19%) essay drafts revealed meaning-preserving revision and idea-development changes related to the synchronous conferences. For example, a student brought the following thesis to a conference, asking the online instructor his opinion: "This could cause more harm than the original attack did with youth copying the actions of the attackers seen on the news by the children across the country." They discussed the thesis and one of the instructor's ideas was that the student could elimi-

nate the prepositional phrases “by the children across the country.” The thesis that appeared in the next draft was a permutation, where the student rearranged the words in an apparent attempt to follow the instructor’s guidance: “These school shootings by the children across the country could cause more harm than the original attack did with youth copying the actions of the attackers.” Such revision changes actually preserve meaning, most often accomplished by substitutions or deletions of words or phrases, and they tended to follow the conference game plan fairly concretely.

In terms of microstructural meaning altering changes, 23 (44%) drafts revealed developments connected to the interactions. For example, one student brought to the conference this “thesis”: “Lynn Swann is a football player from the late seventies and early eighties. With the Steelers he won four Super bowls. He also is a great person with great characteristics such as courage and honesty.” During the conference, which focused on creating a thesis that is debatable and supportable and on teaching the student how to move statements of fact to the body of the essay as supportive detail, the student wrote on the whiteboard: “Lynn Swann is a talented football player that also had many characteristics off the field such as courage and honesty.” His first full essay draft included this thesis, revised yet again—evidence that the student continued to develop this sentence and his thinking after the conference was over: “Lynn Swann is a talented football player that also had many good characteristics off the field such as courage and patience.”

Five drafts (10%) had macrostructural meaning altering changes connected to the interactions; of those five drafts, one draft had three macrostructural revision and development changes for a total of eight macrostructural changes overall. One conference, for example, addressed the student’s conclusion, which she had not yet written and about which she expressed confusion. The online instructor explained that conclusions restate a thesis and main points, and then end on a “thought provoking note”; such a conclusion also could “challenge the reader to do something about the problem. Speculate on what the future holds if the problem is not solved.” The following draft conclusion addressed all the instructional advice and concerns that the participants had discussed in the conference:

In conclusion, parents are the main reason for youth violence. Children listen to their parents and look up to their parents. Children accept rules from their parents if, from the start, they understand to follow the rules. And children need both of their parents in their lives to help them feel like they have a safe place to turn in a bad situation. Although much research has been done on the subject of parents actually being the main cause of youth violence, the argument should be completely proven to show all parents that they need to be in their children’s lives. Because if no one acts and tries to find the reason for this problem, the next school shooting could be at your child’s school.

Any of these four revision change categories can be enacted in both essay strengthening or weakening ways. As most writing professionals know, revision and idea development does not always lead to improved writing, especially during formative drafting periods. In this study, I looked for signs of writing improvement as one of the final steps in analyzing the revision changes and developments. Although all but one revision change improved the writing in some way, however minor, most of the changes appeared to have insignificant to moderate rhetorical effect on the writing-in-progress in terms of argumentation strategies or meaning

enhancement. Qualitative judgment is subjective, of course, but it seems important to consider to what degree such a judgment is representative of the efficaciousness of the synchronous instruction. In this case, without the benefit of interviewing student and online instructors, quality bears mention, but not undue attention. Although these revision study results do suggest that the instructional interactions helped students improve their writing, such improvement or growth does not seem to have been dramatic. On the other hand, as a singular part of a broader writing process for a semester of composition instruction, any one online encounter need not be dramatic in order for the student to have developed skills incrementally during a semester. Indeed, because students made choices among ideas generated in the online conferences, as evidenced by these data, they clearly experienced some degree of ownership over their writing and saw themselves as capable of making their own decisions—both of which are qualities of writers that contemporary writing instruction seeks to develop.

4. Implications for preparing synchronous whiteboard instructors and students

Scholars rightfully continue to call for more critical understanding of online instructional media.¹⁴ Accordingly, this study was developed to increase understanding of synchronous online instructional interactions conducted through whiteboard technology. There are nuances to synchronous instruction that require systematic and ongoing investigation of online teaching methods and results. Such investigation can then suggest practical applications for developing instructor training methods that address the hybrid nature of synchronous instructional conferences as well as how to prepare students to facilitate their own learning. For example, the synchronous whiteboard conferences in this study can be characterized as efficacious in that most of them can be connected to student writing improvements, however moderate in quality. Nonetheless, the conferences also reveal a characteristic that may be common to other synchronous online conference platforms: such conferences are text-intensive dialogues that may lead to only one or two discrete writing changes—or even none. While any writing development or revision change can be significant in terms of student writing practices—perhaps a new understanding of narrowing a thesis or organizing ideas or of how to correct sentence faults—the discrete nature of such outcomes should be considered when developing pedagogical goals and ideas of efficacy regarding synchronous online conferences. Such goals also need to be considered in the pedagogical context of a conference between student and course instructor as opposed to professional online instructor or peer as tutor.

Further, educators who engage synchronous, conference-based OWI may do so in part because it resembles oral dialogue in its give-and-take talk characteristics, which seems to offer the best of both worlds: both writing and speaking about writing. Such issues of text and talk are inherent to developing any synchronous instructor training for OWI. In the whiteboard interactions that I studied, these issues may be particularly important because the online

¹⁴ See, for example, Beth L. Hewett and Christa Ehmann (2004), Christa Ehmann and Beth L. Hewett (2005), Beth L. Hewett and Christa Ehmann Powers (2005), Loel Kim (2004), Christa Ehmann (2000a, 2000b, 2001, 2003a, 2003b); Dickie Selfe (2003), Kristine L. Blair and Elizabeth A. Monske, 2003; Cynthia L. Selfe (1999a, 1999b), Lester Faigley (1999), Hewett (1998, 2000, 2001) and Judith J. Sorg and James H. McElhinney (2000).

instructors often taught by talking as one would in a chat box with lengthy dialogue, rather than teaching students by “doing,” using the unique space and qualities of the whiteboard to demonstrate strategies and develop writing from them. Thus, professional development and OWI-specific training would do well to address the physical differences between a chat box and a whiteboard, the special affordances of each platform, and the various instructional strategies to which each lends itself.

These data show that the whiteboard interactions were focused primarily on developing student writing and/or ideas. They were task oriented as well, in that the interactions typically focused on talking about such specific tasks as honing a thesis sentence or finding supporting reasons for a thesis. However, almost one half of the interaction’s talk was oriented toward guiding and explaining the instructional interaction itself—that is, in developing human-to-human contact and facilitating communication about the interaction and the whiteboard’s workspace. A review of the archived interactions showed that this connective talk and orientation-related discussion occurred regardless of whether the interactions were the students’ first or subsequent tutorials, which suggest that something about this whiteboard platform and/or the synchronous modality itself may require such talk. Thus, professional development and OWI-specific training will want to acknowledge the affective value and necessity of connective talk as well as to address how and where one might use task-facilitative talk in whiteboard sessions. For example, one could consider with novice online instructors and trainees the nature of connective talk and how it differs from facilitative talk, particularly with respect to students’ affective needs versus their more particular learning needs and styles.

These data also raise some questions about the time and goal expectations of such synchronous interactions. Does the institutional setting or instructional context allow for lengthy (30–45 minutes) or short (10–20 minutes) interactions? Does the platform allow for endless whiteboard space or space roughly the size of an 8.5 in. × 11 in. piece of paper? Undoubtedly, when dialogue occurs online in an instructional setting, time and available space management must include strategies for keeping the interaction on track, which naturally requires verbal facilitation as well as text- and symbol-based human-to-human contact. Unless the participants meet frequently in the online setting and establish communicative habits on which they can rely, the interchange must be guided by facilitative talk, and that talk must be factored into the time and space limitations of the modality and platform. Thus, professional development and OWI-specific training will want to address time and space limitations by, for example, frontloading the interaction with some facilitative guidance to enable the conference’s writing-focused goals to unfold more completely and in a more compact manner. Additionally, participants might be encouraged to use an accompanying text box for facilitative talk like instructions about where and when to write and how to use the whiteboard for the “work” of the session.

This study indicates that online instructors would benefit from ample training and practice in synchronous platform-specific scenarios to help them assist and respond to students in a variety of problem-centered ways. Using the principles of investigation, individualization, immersion, association, and reflection (Hewett & Ehmann, 2004), training opportunities might include (1) practicing active synchronous teaching by modeling idea generation, thesis development, or sentence-level grammar work and then asking students to write their own versions on the whiteboard; (2) simulating with other instructors the talk, skills, and activities that facilitate

the interaction's progress, paying particular attention to time and space; and (3) reflective experimentation that later is shared and openly discussed with other experienced and novice online instructors. Other issues for online instructor training include examining the potential benefits of time and space limitations as well as how online pedagogical strategies differ from those conducted in face-to-face conferences.

Students, too, would profit from preparation for synchronous conferences, especially practice specific to electronic whiteboards. In this study, many students made good use of their online conferences, but they might have benefited more had the class discussed the characteristics and challenges of such conferences, as well as student senses of success and failure, openly. Doing so would provide students an opportunity to discuss whether they need prompts to help them state an agenda, how they can set a strong agenda and guide the conference regarding their needs, and when they might want to release control of the agenda into the online instructor's hands. Along these lines, students might be encouraged to ask more questions of the online instructors. Depending on the instructional context, students also might benefit from guided whiteboard practice with the online instructors or as simulations with peers. In such instructional settings, clear goals and expectations for synchronous conferences can be set, explained, and regularly practiced; ideally, students can become fluid not only with the technology, but also with the interactive conventions for the type/s of conference they will experience.

5. Future research

Educators are regularly encountering a variety of synchronous platforms as they are developed for educational purposes or adapted from recreational and workplace software. Yet, there is much to learn about synchronous educational sessions, and the notion of instructional success is, as yet, difficult to delineate. Data relative to linguistic functions and the writing development that emerges from synchronous online conferences would be useful from a variety of available platforms, such as instant messaging and educational MOOs, and in different educational contexts. Additional data also are needed in various whiteboard contexts such as those that occur between instructor and individual student or between instructor and groups in both the traditional classroom- and distance-based settings.

Future research also might consider other ways to investigate whiteboard interactions as the research framework used in this study does not address such important characteristics as organization of turn-taking, instructional skill, knowledge progression, uses of graphics, or differences between simple text versus text that engages the spaces, graphics, and presentation tools available on a whiteboard. It is important, as well, to use such methodologies as student and instructor interviews and surveys that make connections between an instructional interaction and the writing, which would help educators to understand how the conferences may influence student thinking and writing. Educators also might examine different synchronous instructional models to include problem-centered instructional strategies that are "directive" in providing students with human-interactive practice regarding a writing issue or that otherwise straight forwardly guide them to particular next steps in terms of writing content, form, context, and process.

Certainly, it is too early to speculate and generalize about the nature of an “ideal” synchronous session on the whiteboard or any other electronic platform. Nonetheless, the process of describing notions of success and the ideal are crucial to facilitating learning in synchronous online settings. This process requires appropriately developed, robust learning models that have been tested, enacted, analyzed, and revised repeatedly. During that process, the notions of efficacy and success must be reconceptualized, again recursively. Additional empirical research into synchronous OWI can help educators to set that stage.

Acknowledgements

A second component to this study uses these same linguistic and revision taxonomies to examine *asynchronous* online conferences and the student revisions connected to them (Hewett, 2005a, 2005b). Specific to this study, I thank the students from my Pennsylvania State University (PSU) classes who, through informed consent, provided access to their writing and instructional interactions. PSU supported this research through grants and course release. Additionally, I thank the Smarthinking, Inc. online instructors who provided permission to study their instructional interactions, as well as Smarthinking President Burck Smith and Vice President of Education Dr. Christa Ehmann Powers for their assistance and cooperation. Special thanks to Laurie Johnson, David Kaufer, Kathryn and Murphy Weis, and Susan Holloway. Finally, I note that prior to my appointment at PSU, I served as an initial developer and first director of Smarthinking, Inc.’s online writing program; this research project was initiated after my departure from the company with specific permission to use archived interactions.

Appendix A. IU coding taxonomy

Category 1 addresses four primary linguistic functions of the IU: *Inform*, *Direct*, *Elicit*, and *Suggest*. (1) An IU that *informs* (I_) has the grammatical form of a declarative (subject + verb order). Its matching functions are, for example, to describe, assert, tell, state, restate, evaluate, and/or judge something. In this study, *inform* IUs often teach a point or to explain a problem. An example is: *Your paragraph needs to be expanded*. (2) An IU that *directs* (D_) has the grammatical form of an imperative (no overt subject, or with a stated second person subject). Its matching functions are to order, command, or request, and it may use the preverbal word “please.” Examples are: *Expand your paragraph*, and *Please write your paragraph here*. (3) An IU that *elicits* (E_) has the grammatical form of an interrogative (verb + subject order, with some exceptions). Its matching function is to ask a question. Questions that belong to the *elicit* category tend to use “who,” “what,” “when,” “where,” “why,” or “how” in the IU itself. An example is: *How can you expand your paragraph?* (4) Finally, an IU that *suggests* (S_), which is a new category emerging from Beth L. Hewett’s (2005a, 2005b, 2005c) studies of OWI, may have the grammatical form either of the declarative, imperative, or interrogative, although observation indicates that most frequently its form mixes the imperative with interrogative inflection or punctuation. The functions of the *suggest* IU do not match its form and are variably to inform, question, or direct by mentioning, introducing, prompting, or proposing

an idea or thought in an indirect manner. These IUs seem to be used when participants want to be polite or want avoid overtly directing the interaction or a writing action. An example is: *Can you expand your paragraph?*

Category 2 addresses one of two possible general areas of attention of the IU. In this coding instrument, that can be either the writing itself or the instructional, or tutorial, interaction. Writing (_W_) IUs address writing-in-process. An example is: *A thesis is a one-sentence statement of your main idea.* Tutorial (_T_) IUs address or facilitate the instructional interaction. An example is: *I enjoyed working with you tonight.*

Category 3 addresses the specific focus of consciousness of the language. There are five possibilities: *content, form, process, context, and reference.* (1) Generally, *content* (_C) deals either with what is in the writing (e.g., what is, should be, or could be writing content) or with the nonprocedural content of the interaction itself (e.g., tutorial procedures, contextually necessary greetings and closings, and template or clipboard type explanations and examples that could apply to any writer's concerns rather than to the specific writer's concerns). An example of *writing content* is: *But remember that your focus is on TV and movies.* An example of *tutorial content* is: *This [example] is just a fraction of the possible transitional phrases that you can use.* (2) *Form* (_F) concerns the formal aspects of writing (e.g., structure, length, thesis statement/s, claims, evidence, introductions, conclusions, audience, reader/writer bias, tone, and correctness) or with the look and shape of the tutorial itself. An example of *writing form* is: *Great topic sentence!* An example of *tutorial form* is: *My comments are in bold font and enclosed in brackets.* (3) *Context* (_X) concerns the background surrounding the content, form, process, or reference of the writing or tutorial (e.g., assignment, sources, evidence, and contextual discussion at both the idea- and meta-level). An example of *writing context* is: *Also, I was wondering if any more recent data is available [for your topic].* An example of *tutorial context* is: *Thanks for stopping by to talk about your writing.* (4) *Process* (_P) concerns IUs focused on the writing process (e.g., the experience of writing and of writers, to include writing activities or developmental processes) and those that refer to tutorial procedures (e.g., using the electronic platform for using a live whiteboard, when and where to type, and how to use linked resources). An example of *writing process* is: *You do a good job of explaining the alternatives in a situation like this.* An example of *tutorial process* is: *I'll send you a hyperlink to a module that explains fragments.* (5) *Reference* IUs (_R) respond directly to individual IUs or *refer* to larger chunks of text, such as the entire composition, or to previously addressed text; thus *reference* IUs sometimes are termed *response* IUs. *Reference* IUs reveal interactivity among participants and/or with the written text or tutorial, and they may include an "echo" or repetition of a previous question or chunk of text. A general example of *writing reference* is: *You sound more confident and assured in your writing now.* A general example of *tutorial reference* is: *The same [web] page also has email and phone information should you have further questions.*

Category 4 regards the phatic (H) nature of certain utterances as a placeholder or back channel cue that keeps open the communicative lines (e.g., "hmmm," "ok," or "thinking"). Phatic IUs seem to occur more frequently in traditional oral and synchronous online interactions than in asynchronous online interactions. For this taxonomy, in an online setting, phatic utterances also include emotions like smile ☺ and frown ☹ faces, which attempt to convey information usually revealed by body language. Along with reference IUs, phatic IUs create a sense of

dialogue and reveal some level of interactivity. A general example of *phatic* that seeks a sense of connection is: *Are you there, David?*

In sum, there are forty-one possible types of IU, each represented by three letters (with the exception of the single letter “H” for a phatic utterance). For example, *IWC* is an IU that Informs about Writing Content. *ITR* Informs about the Tutorial Reference. *DWF* is an IU that Directs about Writing Form, *EWX* Elicits about Writing Context, and *SWP* Suggests about Writing Process.

For more detailed coding information and guidelines for separating IUs, please contact the author at <beth.hewett@comcast.net>.

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