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NARRATIVE WRITING IN DIGITAL FORMATS: INTERPRETING THE IMPACT OF AUDIENCE

Digital writing has enabled students to write for a variety of authentic audiences, both in and out of the classroom. As they consider audience, students shoulder a cognitive burden that they must juggle in addition to the task of composition. At the same time, writing provides students with opportunities to craft and express their identities. The ways that identity formation and cognitive load intersect may be particularly complex in digital, online writing environments, as students gain the ability to share and receive feedback from global and local audiences. In this counterbalanced experimental study, 86 seventh- and eighth-grade students responded to two narrative prompts. One prompt was written for the teacher and the other was written for the teacher and peers in an online forum. We examined student writing fluency, mechanical errors, academic word use, and setting. Students were found to be more likely to set narratives in private settings when writing for an audience that included peers. We discuss this finding from cognitive and sociocultural perspectives and how it might inform networked communication research.

Key words: audience, digital writing, experimental design, online forums

Until recently, secondary students in the US wrote almost exclusively for one audience member: their teacher (Applebee & Langer, 2011; Britton, Burgess, Martin, McLeod, & Rosen, 1975). Today, teachers are using blogs (Huffaker, 2004; West, 2008; Witte, 2007), e-mail (Biesenbach-Lucas & Weasenforth, 2001; Heisler & Crabill, 2006) and school-wide online forums (Fahey, Lawrence, & Paratore, 2007) to help students find audiences for their work. While teachers have always been able to designate fictive audiences via writing prompts, one salient feature of online or networked writing tasks is that authors and writing instructors

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can specify a real, public intended audience of messages (Fahey, Lawrence, & Paratore, 2007). The technologies that allow authors to write for real audiences with similar interests (e.g. Black, 2009) also enable students to practice authentic writing in the classroom. In terms of academic achievement, Graham and Perin (2007) found that providing "extended opportunities for writing; emphasizing writing for real audiences; encouraging cycles of planning, translating, and reviewing" is associated with improved student writing outcomes (p. 19). At this point we do not know enough about the impact of audience awareness on the writing process and how educators might manipulate audience conditions to support particular features of student writing development, although there are some relevant studies (described in the next section).

In this paper we briefly review research on how audience awareness impacts writing and how the concept of audience is considered from cognitive and sociocultural perspectives. We then present results from an experimental study conducted in a middle school in which students wrote on similar prompts for two different audiences.

Prior research on audience and writing

What do we mean by *audience*? Kroll (1984) describes how the rhetorical approach to audience, wherein audience is viewed as the concrete target of a writer's persuasive arguments, has limitations; writing is not always persuasive, the audience is not always explicitly known, and the interaction is not always between a knowledge-giving writer and a knowledge-receiving audience. Kroll offers alternative ways to consider the audience-writer relationship: an informational perspective, where the writer's role is information-giver and thus the audience is the information receiver, and the social perspective, where a writer acknowledges that the audience is a participant in constructing information. Magnifico (2010) further argues that two theoretical frameworks can be unified to better describe the writer-audience relationship: a cognitive perspective and a sociocultural perspective. Whereas a cognitive approach suggests that audience awareness enables writers to recall content and assess reader needs, a sociocultural approach would focus on how writers participate in a community when they write and thus must navigate issues of identity and knowledge (Magnifico, 2010). Magnifico suggests that only an approach that takes into account both of these perspectives can begin to address and describe the interactions taking place between writers and their audiences.

Many studies examine the role of a writer as a transmitter of information and the extent to which audience awareness affects writing as a means for delivering information. Audience awareness and its effects on writers in general are illuminated by a wide range of studies investigating how people provide instructions to help interlocutors solve puzzles. Much of this research focuses

on how knowledge of audience affects oral discourse (Bangerter & Clark, 2003; Brennan & Clark, 1996; Clark & Wilkes-Gibbs, 1986; Horton & Gerrig, 2002); however, several studies have been based on written communication. For example, Traxler and Gernsbacher (1992) asked adult subjects to provide written instructions to partners to solve tangram tasks, which involve manipulation of pieces to create specified shapes. Some subjects were then given feedback about their readers' performance on the task so that they could modify their instructions. The instructions of writers who received feedback improved more over successive sessions than the instructions of those writers who did not receive feedback. In a subsequent study, Traxler and Gernsbacher (1993) found that the opportunity for writers to complete the tangram task also improved the writers' instructions. These studies suggest that improved knowledge of audience, through either audience feedback or better understanding of a task as the audience experiences it, enables writers to remember and thus convey information more effectively to the audience.

In a related line of research, fifth- and ninth-grade students also wrote tangram instructions more clearly when they had a better understanding of the readers' tasks (Holliway, 2004; Holliway & McCutchen, 2004). In these studies, students wrote tangram instructions in three conditions. In a feedback-only condition, writers were told by the researchers whether their readers successfully used their written description to identify a target tangram. In the second condition, writers received information about the readers' performance and a descriptive rating from another student. In the third condition, students received the performance information and were then asked to read tangram descriptions authored by other students and to complete the task. Students in the third condition showed significant improvement in their writing compared with those participating in the other feedback conditions. As in the Traxler and Gernsbacher studies cited above, these results suggest that differences in written samples are the result of improved understanding of the audience, their perspective of the task, and the written instructions. This study suggests that young writers also incorporate knowledge of their readers while performing simple descriptive tasks. In a similar study, students wrote science lab instructions for their peers, watched videos of their peers performing their instructions, and then revised the instructions (Rijlaarsdam, Couzijn, Janssen, Braaksma, & Kieft, 2006). When students observed their peers' performance, they made more revisions and improved the content and clarity of their instructions over students who did not observe their peers' performance. Rijlaarsdam et al. suggest that this difference was due to increased metacognitive awareness; observation of their peers helped students to think more about their thinking and the thinking of their peers.

One line of research suggests that the effect of audience differences develop along with writing skill. Three decades ago, Rubin (1982) examined the persuasive writing that children (in fourth, eighth, and twelfth grade) and adults produced

across an array of audience conditions. The procedure stressed that the essays participants produced were intended for a real audience and that they would be returned to the writers so that they could be delivered to one of three target audiences: high-intimacy (someone with whom the participant has a close personal relationship), intermediate-intimacy (an acquaintance), and low-intimacy (someone or some audience unknown to the participant, such as the general public) readers. Rubin found that there was a difference in the use of abstract constructs in the samples written by adult writers but not in the samples written by younger participants. He also found differences in organization by audience: persuasive essays written for the intermediate audience were less well-organized than those written for either the high-intimacy or the low-intimacy audience. This effect was more pronounced for adults than for younger writers. In general, these findings suggest that audience effects are more pronounced in more skilled writers, especially in the use of abstract constructs and organization (also see Piche & Rubin, 1979; Rubin, 1997).

In another study focusing on the cognitive difficulties students face when writing for different audiences, Cohen and Riel (1989) asked seventh-grade students (N = 44) to write informational compositions in two conditions that were counterbalanced for order effects. These students were told that they were going to take part in an international, computerized student network. Students wrote one composition for teachers as an end-of-semester writing product and received a mark equivalent to a homework grade. Students also wrote a composition for a peer in a distant country. Both of these compositions were written on paper, but the compositions for peers were to be distributed to international students via a computer network. Although students wrote the same amount under both conditions, narratives written for distant peers tended to present better ideas and be better organized than those written for the teacher; they also scored better on language use, vocabulary, and mechanics. Students made their writing more explicit for the remote peer audience, who did not have the same background information that their teacher did. Additionally, although explicitly instructed not to do so, twenty-nine percent of students changed the topic of their narratives when writing for a different audience. Cohen and Riel suggest that the differences between narratives written for a teacher audience and for a peer audience may be due to student cognitive skill level: students may simply lack the ability to separate their teacher from the imaginary audience that their narratives were supposed to address. This challenge may also be related to the high cognitive demands on students when writing. Weaker students may struggle with translating their writing plans into written text (see Flower & Hayes, 1981; McCutchen, Covill, Hoyne, & Mildes, 1994).

While Cohen and Riel (1989) suggest that the cognitive ability to imagine an abstract, nonexistent audience plays a role in how students write for different audiences, sociocultural factors may also influence student choices as they write.

Whereas some studies on writing and audience (Traxler & Gernsbacher, 1992; Holliway, 2004; Holliway & McCutchen, 2004) remove participants from their social and cultural contexts, a sociocultural approach necessitates the inclusion of these contexts; "the communicative context—including the audience of writing, how the writing is situated within a community of practice" is needed to fully understand the writing process (Magnifico, 2010, p. 174). Cohen and Riel mention how student awareness of the potential lack of shared cultural knowledge may have been a factor in the increased clarity of narratives written for a distant peer audience. What Cohen and Riel suggest is that a yet unlearned cognitive skill may reflect students' understanding of and participation in a learning community with their teacher. Student consideration of social contexts, such as the social space and language they shared with their teacher (and the lack of shared space between the students and their distant peers), may have also informed differences in writing. Because the work authored for a less well-known audience in another country was more formal and received higher scores for vocabulary, language use, mechanics, and overall quality than that written for teachers, understanding how both social and cognitive skills interact with audience effects on student writing may help teachers to create audience conditions conducive to student writing goals.

The need for understanding the effects of audience on student writing is made more urgent by changes in technology and the way students write. Communication technologies such as e-mail, cloud writing platforms, and social media have transformed how students write in and out of the classroom. The writing process in a digital landscape necessitates new skills and literacies in research, organization, technology, and media; the National Writing Project (DeVoss, Eidman-Aadahl, & Hicks, 2010) also highlights the need for social skills such as the ability to collaborate: "Writing, at every stage of the process, can now be shared across time and space instantaneously" (p. 23). A component of these increased opportunities for collaboration is audience, specifically, the increased ability for writing and receiving feedback from diverse, authentic audiences. Potter (2012) emphasizes that digital media production is an act of *curatorship* that is inseparable from social relations; with these media, an author crafts a "selected and selective identity" (p. 46). Through their writing, students must be mindful of their audience as they practice *curating* their academic selves.

The broader range of venues and genres available in a digital landscape complicates the unpacking of the impact of audience on writing as both a cognitive and identity forming practice. On the micro-blogging site Twitter, Marwick and Boyd (2010) surveyed their followers, asking them to describe their motivations for tweeting (posting on Twitter). Marwick and Boyd found that when tweeting, individuals consider diverse and varied audiences. From those who claim to write for only themselves to those who carefully consider the needs of their audience, most authors consider the ability of the audience to interact and participate in a

discussion: "the idea of the 'audience' as a stable entity that congregates around a media object has been displaced" with an interactive one (Marwick & Boyd, 2010, p. 129). Other blogging platforms are similarly interactive (da Cunha Recuero, 2008). While most youth do not consider their participation (via tweets, status updates, and other online text creation) in online communities and social networks as writing (DeVoss, Eidman-Aadahl, & Hicks, 2010), the majority of youth participate in online communication for social purposes such as composing status updates on social networking sites, blogging, and fanfiction writing (Ito et al., 2009). Some youth also use digital spaces to create and share narratives with peers. In online fanfiction communities, an audience of peer authors reviews, critiques, and collaborates on the stories that adolescent authors write (Black, 2009). In her study of adolescent fanfiction writers, Black found that these writers were able to develop their identities as authors and as experts of fan culture. In online spaces such as these, the roles of audience and writer are ever-switching and interactive.

Because of the increasingly tangible, present, and participatory role of the audience made possible—and increasingly necessary—by digital writing, understanding the way student writers navigate audience is an important part of understanding the writing process. One of the potential effects of audience on writers' choices is in selection of narrative setting. While researchers have found that students are more explicit about their location or geographically bound details in their writing for a distant audience (Bos & Krajcik, 1998, April; Cohen & Riel, 1989), research that examines where students decide to set their narratives is scarce. For writing prompts where students choose a setting, this choice may be a particularly important dimension; the setting may reflect student conceptions of audience and student decisions with respect to topic, language use, and the extent to which the student chooses to share personal or private information with the audience. These are important aspects of writing, especially in a process writing approach to instruction, which encourages students to tell their own story and have personal ownership of their writing (Graham & Perin, 2007). Given the popularity of generic narrative writing topics in secondary schools, including stories about vacations, fairytales, and imaginary events (Shippen, Houchins, Puckett, & Ramsey, 2007), the potential effects of audience on where students decide to set personal narratives may be a consideration in a large amount of classroom writing. While studies such as Cohen and Riel's (1989) look at effects of an international peer audience in the classroom and Black (2009) examines audience interaction with adolescent writers in out-of-classroom online writing, few studies investigate the addition of a peer audience to a classroom context. Moreover, studies examining the effects of audience on student choice of narrative setting are scarce. Building from the aforementioned prior research on audience, our study addresses the following questions comparing the effects of writing for a teacher audience and writing for a classroom (both teacher and peer) audience:

1. To what extent does writing for a classroom audience or a teacher audience affect the fluency of seventh- and eighth-grade students' narrative writing?
2. How does writing for a classroom audience or a teacher audience affect the mechanics of seventh- and eighth-grade students' narrative writing?
3. Does seventh- and eighth-grade students' academic word use differ when writing narratives for a classroom audience or teacher audience?
4. Do audience conditions affect where seventh- and eighth-grade students set their narrative writing? Do audience conditions influence whether narratives are set in public or private settings?

Method

Participants

This study was conducted in a mid-sized public middle school in a large urban school district in the United States. The school has a demographic profile that is typical for the district it is in: 54 percent of the students are African American and 40 percent are Hispanic. Most students in this school (83 percent) are eligible for the free or reduced-price lunch program, which is a common metric of poverty in US schools. This school has been the site of a multiyear implementation of an online writing forum, which every student in the school has used in both English and science classes (Fahey, Lawrence, & Paratore, 2007).

Three eighth-grade classrooms and three seventh-grade classrooms were selected for this study because they represented the range of student profiles typical of the school as a whole, including second-language learners and students who received special education services. Students were between 12 and 14 years old. We do not explore special education and language status in our analysis as we were not given permission to access those data for this study. All students in these homeroom classes had used the online forum in English, a science class, or both in the current school year. Additionally, all students had been participating in the forum at least two days per week—and often more than two days per week—for at least a year. In these classes, students were accustomed to forum use: each student had posted work to the forum and had received feedback on their work online. In addition, students would often read peer writing on the forum and discuss the work in real life.

Data from the 86 students who completed the tasks in both audience conditions were used in this study, which included samples from 49 seventh-grade students and 37 eighth-grade students. Roughly equal numbers of boys ($n = 45$) and girls ($n = 41$) participated in this study.

Experimental procedures

Each class was brought to the school computer lab at two predetermined times during the week of data collection. When all students were in their assigned seats,

they were read a script describing the writing assignment (the prompt was also affixed to student monitors), which defined the audience in each of the two audience conditions and told them how much time they had to respond. Testing periods were marked by general student interest and few technical or behavioral complications.

The prompts that were selected did not suggest a particular setting and were open-ended enough to allow any student the opportunity to respond with reference to their experiences. All students responded to Prompt A during their first trip to the computer lab: "Think of a childhood memory that you recall clearly. Write a story about what happened. Be sure to narrate an event or series of events and include specific details in your response." During the second session, all students responded to Prompt B: "Think about a special time you remember spending with a friend. Write a story about that time. Be sure to narrate an event or series of events and include specific details in your response." During both sessions, students were encouraged to work silently and alone throughout the allotted time. Each narrative was coded as a response to Prompt A (PROMPT_A = 1) or Prompt B (PROMPT_A = 0). After 30 minutes, students were told they had 5 minutes left, and they were asked to finish their work after 35 minutes had passed. Two adults attended each of the writing sessions. No students were asked to respond to both writing prompts on the same day, and none had more than a day between writing sessions.

Audience conditions. Writing conditions were assigned by homeroom: three homerooms responded in the classroom-audience condition first, and three responded in the teacher-audience condition first. Audience conditions for each group were alternated on the second visit.

In the teacher-audience condition, students arrived at their seats to find the computers logged on and a word processing application open to a document that had already been formatted with the formulaic school heading. The word processor did not have any text review tools, such as spelling or grammar check. Students were told that when they were done responding to the prompt, their work would be printed and handed to their teacher and would be given the same weight as a low-stakes ungraded homework assignment. Narratives that were completed in this condition were coded as PEER_AUD = 0, as no peers were included in the audience.

In the classroom-audience condition, students arrived at their computers to find them already logged on to the distinctive response page of the classroom online forum. They were told (and knew from experience) that the work they posted on the bulletin board could and would be viewed by other members of their class and the school community. They were also told that this work would be seen by their English teacher and would be given the same weight as a low-stakes ungraded homework assignment. As with the word processor in the teacher-audience condition, no text review tools are available on the forum. Since peer readers were included in this condition, these narratives were coded as PEER_AUD = 1.

Coding student work

Narratives were copied from the lab computers at the end of each class and saved as text files. Each narrative was assigned a random identification number, and they were then pasted together in a scoring manual that was used by the research team to code for length, mechanics, academic language, and setting.

Fluency. The number of words in each narrative was counted using a word processor and used as a measure of writing fluency. This is consistent with a review of related studies that found word count to be the most commonly used measure of writing fluency (Wolfe-Quintero, Inagaki, & Kim, 1998).

Mechanical errors. Three kinds of mechanical errors were coded for each writing sample: capitalization errors, punctuation errors, and spelling errors. These are all commonly used indices to measure accuracy in writing (see Wolfe-Quintero, Inigaki, & Kim, 1998). Guidelines about slang words used in dialogue, slang punctuation, intentionally misspelled words, and repeated misspellings of a word were codified. A word-processing program helped identify instances of error, but the totals were tallied with reference to the scoring manual. Inter-rater reliability on 15 percent of the samples was high (with Pearson's r correlations of 0.93, 0.81, and 0.96 on spelling, punctuation, and capitalization, respectively, $p = 0.001$). Preliminary analysis suggested that the number of mechanical errors was related to the number of words per sample, so error rates were also calculated for each sample by dividing the number of errors by the number of words in each sample. Since these count data were highly skewed a square-root transformation was conducted, resulting in reasonably normally distributed measures of error rates in each category. Transformed error rates from spelling, punctuation and capitalization were combined into an average error rate score for each narrative.

Academic word use. There is a strong link between academic word use in written composition and student writing proficiency (Laufer & Nation, 1995). We evaluated each narrative for the quality of student word choice and effective use of academic vocabulary such as *analyze, factor, interpret, structure* and *priority*. Scores of zero and one were assigned for samples that contained no academic vocabulary and were distinguished by appropriateness of word use. Scores of two and three were assigned only if samples used words from a list of low-frequency academic words (Coxhead, 2000) and were distinguished by the number of academic words used and how well they were used in context. Inter-rater reliability on 15 percent of the samples was acceptable (Pearson's $r = 0.805$, $p = 0.001$).

Setting analysis. Two coding values are provided for each student narrative. The first author recorded the settings used in 30 narrative samples. The list included narratives set in schools, malls, movie theaters, sporting areas, parks, friends' houses, and hospitals. A research assistant coded all the samples, adding

to this list if completely new settings were encountered. The final list was composed of 12 categories that included all of the settings used by students. Seven narratives had no identifiable setting.

To understand how audience condition related to setting, we ordered the setting codes from the most private (narratives set in the students' home) to the least private (narratives set at malls, movie theaters, or bowling alleys). Roughly half the narratives ($n = 79$) took place in the students' homes, in locations directly proximal to the students' homes, or in the home of a friend or family member. These were coded as having occurred in a private setting (PRV_SETTING = 1). Those narratives set in schools, hospitals, amusement parks and other more public settings were coded as such (PRV_SETTING = 0).

Covariates

To determine the impact of audience on the fluency, mechanics, academic language, and setting privacy of student writing, the possible effects associated with differences in the writing prompts were controlled for in all analyses. Additionally, the following covariates were used:

Scholastic Reading Inventory. The Scholastic Reading Inventory (SRI) is a standardized measure of student reading comprehension that asks students to read a passage and then complete a maze task at the end of the passage that requires student understanding of the passage and key vocabulary. Raw SRI scores were obtained from the school for all students.

Grade level. All students were either in seventh or eighth grade when this study was conducted. A dichotomous variable GRADE_8 indicated if students were in the older (GRADE_8 = 1) or younger (GRADE_8 = 0) cohort.

Gender. Students were identified as boys (FEMALE = 0) or girls (FEMALE = 1) by the school.

Results

The first row of Table 1 presents the average word count of the narratives written for a teacher audience (first two columns), classroom audience (second two columns), and across the total sample (last columns). Comparing results from the students writing in the teacher audience condition and the peer audience condition suggests that students might write slightly more in the teacher audience condition, but that average mechanical error rates and academic language look stable across the two audience conditions. On average, more students chose a private setting for their narrative when writing for a classroom audience than when writing for a teacher audience. To better understand these suggested findings, controlling for form effects, reading ability, grade level, and gender, we conducted a series of hierarchical linear regressions to answer each research question.

Table 1. Mean word count, spelling errors, capitalization errors, punctuation errors, academic language, and setting in each audience condition and total sample

	Teacher Audience		Classroom Audience		Total Sample
	Mean	*SD*	*Mean*	*SD*	*Mean*
Fluency (number of words)	273.4	106.8	250.1	119.3	261.7
Errors per Sample					
Spelling	6.71	4.97	6.03	4.00	6.37
Punctuation	4.62	3.83	3.95	3.26	4.28
Capitalization	2.78	3.27	3.27	6.73	3.02
Errors per Word					
Spelling	0.026	0.019	0.027	0.018	0.027
Punctuation	0.018	0.015	0.018	0.016	0.018
Capitalization	0.011	0.014	0.013	0.018	0.012
Combined	0.338	0.150	0.352	0.144	0.350
Academic Language	1.06	0.6	1.08	0.69	1.07
Intimate Settings	0.373	0.486	0.675	0.471	0.524

RQ1. To what extent does writing for a classroom audience or a teacher audience affect the fluency of seventh- and eighth-grade students' narrative writing?

Table 2. Regression on writing fluency

R square	*Coefficients*	*B*	*SE B*	*β*	*t - statistic*	*p*
0.138	(Constant)	228.056	48.857		4.668	< 0.001
	SRI	0.501	0.986	0.037	0.508	0.612
	Eighth Grade	36.990	16.741	0.162	2.210	0.029
	Female	53.700	16.461	0.239	3.262	0.001
	Prompt A	-41.755	16.426	-0.186	-2.542	0.012
	Classroom Audience	-22.268	16.426	-0.099	-1.356	0.177

Table 2 presents the results from a linear regression on the length of narrative writing samples. These results demonstrate that, when controlling for other factors, narratives by girls were roughly 50 words longer on average than those written by boys (β = 0.239, p < 0.001). Eighth-grade students wrote more on average than their seventh-grade peers (β = 0.162, p = 0.029), and students tended to write more when responding to Prompt B than they did when responding to Prompt A (β = - 0.186, p = 0.012). Students wrote roughly the same amount when writing for a classroom audience as they did when writing for a teacher audience.

RQ2. How does writing for a classroom audience or a teacher audience affect the mechanics of seventh- and eighth-grade students' narrative writing?

Table 3. Regression on writing mechanics

R square	Coefficients	B	SE B	β	t - statistic	p
0.085	(Constant)	0.418	0.660		6.358	< 0.001
	SRI	-0.001	0.001	-0.051	-0.675	0.501
	Eighth Grade	-0.011	-0.230	-0.036	-0.481	0.631
	Female	-0.081	0.022	-0.276	-3.652	< 0.001
	Prompt A	0.015	0.022	0.052	0.686	0.494
	Classroom Audience	0.010	0.022	0.035	0.465	0.642

Table 3 presents the results of the regression predicting the rate of student mechanical errors from audience condition and the covariates. Only gender was a significant predictor of the rate of students' mechanical errors. Female students made fewer errors per word on average than did male students (β = - 0.276, p < 0.001).

RQ3. Does seventh- and eighth-grade students' academic word use differ when writing narratives for a classroom audience or teacher audience?

Table 4 shows that students' baseline reading ability predicted the richness of the academic vocabulary that they used in their narrative responses (β = 0.222, p = 0.004). Furthermore, students used richer vocabulary when responding to Prompt B than to Prompt A on average (β = - 0.177, p = 0.020). Audience condition had no relationship with quality of academic language use in the writing prompts.

Table 4. Regression on academic vocabulary use

| R square	Coefficients	B	SE B	β	t - statistic	p
0.092	(Constant)	0.285	0.279		1.024	0.308
	SRI	0.017	0.006	0.222	2.954	0.004
	Eighth Grade	0.083	0.095	0.066	0.871	0.385
	Female	0.096	0.094	0.077	1.026	0.307
	Prompt A	-0.221	0.094	-0.177	-2.354	0.020
	Classroom Audience	0.087	0.094	0.070	0.931	0.353

RQ4. Do audience conditions affect where seventh- and eighth-grade students set their narrative writing? Do audience conditions influence whether narratives are set in public or private settings?

Table 5. Logistic regression on setting intimacy (more intimate setting = 1, more public setting = 0)

-2 Log likelihood	Coefficients	B	SE B	Wald	p	Exp(B)
198.353	(Constant)	0.025	0.997	0.001	0.980	0.975
	SRI	0.001	0.020	0.003	0.960	0.999
	Eighth Grade	-0.555	0.357	2.411	0.120	1.742
	Female	-0.499	0.345	2.092	0.148	1.647
	Prompt A	-0.840	0.355	5.604	0.018	2.317
	Classroom Audience	1.487	0.357	17.336	< 0.001	0.226

Setting privacy is a dichotomous outcome variable, so logistic regression was used to understand the relationship between audience conditions and setting privacy controlling for reading ability, grade level, gender, and prompt. Table 5 presents the results of this analysis. Narratives written in response to Prompt A were less likely to be set in private settings than narratives written in response to Prompt B (B = -0.840, p = 0.018). Narratives written for a classroom audience were more likely to occur in a private, domestic setting (B = 1.487, p = 0.001), controlling for differences associated with the prompt.

Figure 1. Settings of narratives written in teacher-audience and classroom-audience conditions
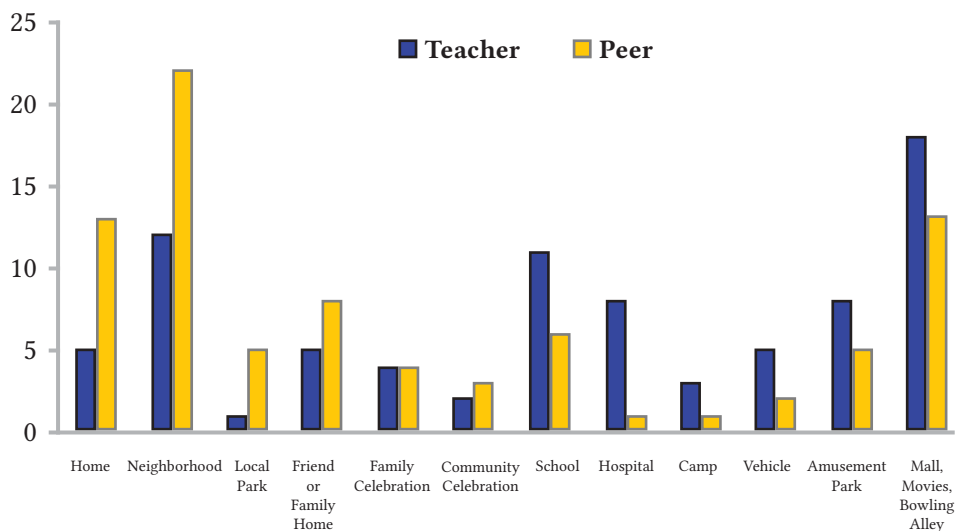
These results are presented in Figure 1. This figure presents the number of writings set in each of the identified narrative settings, ranked from generally more private (on the left side) to more public (on the right side). The white bars indicate the number of narratives by students who completed the task in the classroom audience condition, and the black bars represent the number of narratives by students in the teacher audience condition. There were relatively few narratives written in the teacher audience condition set at the students' homes, neighborhoods, local parks, or family homes. Conversely, relatively few classroom audience condition narratives were set in vehicles, amusement parks, shopping malls, movie theaters, or bowling alleys.

Discussion

This study showed that after controlling for gender, grade, reading ability, and prompt, manipulating audience condition had no influence on fluency, mechanical errors, or academic word use. The findings did suggest that when writing for a classroom audience, students chose private settings more often than when writing for only their teachers.

Cognitive models of the writing process suggest plausible reasons for some of these findings. We found no relationship between audience condition and spelling, capitalization, punctuation, and academic vocabulary use. Production

of writing requires substantial effort (Bereiter & Scardamalia, 1987). Attending simultaneously to multiple compositional subtasks puts a high demand on short-term working memory, and impedes access to long-term working memory (Ericsson & Kintsch, 1995; McCutchen, 1996, 2000; Alamargot et al., 2011). These finding suggest that writing production tasks demand students' full attention. While writing, they don't have the capacity to attend to less essential aspects of the task.

On the other hand, students fix the setting before writing begins. During the planning stage, students do not have to balance the competing cognitive demands of writing production (Berninger, Fuller, & Whitaker, 1996; Flower & Hayes, 1981; Hayes & Nash, 1996). Just as audience effects are greater for skilled readers (Kellogg, 2008; Piche & Rubin, 1979; Piche, Rubin, & Michlin, 1978; Rubin, 1982), they are greater in planning stage decisions than online production tasks for the same reason: writers with more cognitive resources attend to audience better.

Discourse research provides a strong theoretical foundation for the direction of the relationship. Understanding the mind of your interlocutor is an essential component to developing communicative competence (Kurcz, 2004). The term *audience design* describes the pragmatic constraints on speakers that stem from their understanding of a listener's knowledge. Clark and Murphy (1982) argue that audience design affects many aspects of spoken discourse. *Definite references* are one example: when people make definite references in sentences, such as "Have you seen the movie playing at the Roxie tonight?", they assume that they have correctly identified the movie, that the listener has the same correct identification, and that both speaker and listener know that they have the same understanding. If any of these conditions is not met, the question may not be felicitous (Clark & Marshall, 1981). To prevent misunderstanding, speakers can monitor their listeners' understanding (Clark & Krych, 2004), and in fact must do so in order to contribute to discourse in expected ways (Clark & Schaefer, 1989; Sacks, Schegloff, & Jefferson, 1974). In these situations, interlocutors use discourse markers such as "uh" and "huh" to navigate conversational turns, and to mark the listener's difficulty in knowing when to take their turn in the conversation (Clark & Fox Tree, 2002). In face-to-face discourse, speakers can also use gestures (Clark, 2003) and facial and vocal expressions (Russell, Bachorowski, & Fernandez-Dols, 2003) to ensure and confirm correct mutual understanding between themselves and their listeners. A speaker can use such cues to judge their interlocutor's understanding and adjust their spoken contribution to the conversation as they think necessary. Clark and Brennan (1991) define the mutual knowledge, beliefs, and assumptions that a speaker considers when communicating as the shared *common ground*, and the process of ensuring that speaker and the listener have shared common ground as *grounding*. Speakers reference their listeners' age, nationality, residence, education, occupation, language, gender, and ethnicity in considering how they

communicate (Clark, 1996). Our subjects might have found it easier or more comfortable to describe events that occurred in a domestic setting (in which their role is defined largely by age and kinship) when writing to readers who are similarly situated in those settings (classroom peers). Students share less common ground with their teachers, so they chose to set narratives in well-known public settings in which their role (as patient, competitor, or consumer) was less bound by age, education, or kinship status.

Alternatively, *why* students write may have influenced setting choice more than *how* students write. Peer audiences are prevalent in out-of-classroom writing, and digital writing enables youth to connect with these audiences. From writing fanfiction for fellow writers and fans (Black, 2009), to maintaining a website about Japanese culture and music (Lam, 2000), to writing blogs and posting on social media sites (Ito et al., 2009), adolescents can engage with diverse and niche audiences. Given the reasonable expectation that their writing would be read by their peers, why would students have chosen to set their narratives in private settings more often than when writing only for their teacher? Perhaps choosing more private, more personal settings reflects student interests in representing themselves as individuals; students were establishing, affirming, and exploring identity like they do in their out-of-classroom writing (Goffman, 1967; Black, 2009). Research into writing in digital spaces suggests that youth also engage in online writing as a way to maintain and develop friendships (Ito et al., 2009). In choosing private, domestic settings for narratives to be shared with peers, students might be better able to engage those who are already their friends and with whom they share intimate knowledge. The peer audience in this study had opportunities to discuss, confront, and ask questions of peer authors (and from experience, students could expect their peers to read and provide feedback either in real life or via the forum) after posting their writing to the forum. Perhaps this expectation played a role in the choices students made when selecting their settings. If students anticipate that they will have the opportunity to defend and explain their writing, as they did in the classroom-audience condition, they may be more willing to select private, personal settings that might require more clarification.

With the increased importance of writing—and in particular digital writing—for instructor-specified audiences, more must be done to understand the possible benefits of audience manipulation in helping students develop as writers. The current study suggests a differential influence of audience manipulation. For these developing adolescent writers, changes in audience had no impact on student writing fluency, mechanics, or academic language use. We expect that this is due to the fact that the teacher was included in both the teacher-only and the classroom audience condition, and because the assignment was done for credit. In future research we would like to examine independent writing. However, we think these results also point to the fact that students are more likely to be

influenced by their consideration of audience when they are planning a piece than when they are writing it. For these developing writers, attention to audience during actual writing may be limited because of the attention demanded by the "translation" components of the writing process.

Students tended to set narratives in more private settings when writing for a group that predominately included their real life peers than when writing only for their teacher. If a teacher is trying to encourage students to write about their daily life, this may be a positive outcome. On the other hand, previous research on information writing suggests that writing for *distant* peer audiences tends to be more explicit (Cohen & Riel, 1989). Our finding and those of Cohen and Riel considered together suggest that instructors should select audiences who share common ground with the authors when they want to support personal narratives set in personal settings, but that they should select audiences who share limited common ground with the authors when they want to support informational writing and detailed impersonal explication (also see Carvalho, 2002). More work must be done to investigate how manipulation of audience conditions can support other kinds of writing and a wider range of students. The affordances of out-of-classroom writing, such as writing for peers and writing on topics salient to students, are difficult to replicate in the classroom. While this study examined an authentic, in-class setting comparing the effects of a teacher-audience with a teacher- and peer-audience, further studies might attempt to further isolate the effects of a local peer audience. With the increase of networked writing activities both in and out of schools, communication researchers have the opportunity to better explore and understand the effects of audience on writer choices.

References

Alamargot, D., Caporossi, G., Chesnet, D., & Ros, C. (2011). What makes a skilled writer? Working memory and audience awareness during text composition. *Learning and Individual Differences*, *21*(5), 505–516. http://doi.org/10.1016/j.lindif.2011.06.001

Applebee, A.N. & Langer, J.A. (2011). A snapshot of writing instruction in middle schools and high schools. *English Journal*, *100* (6), 14–27.

Bangerter, A. & Clark, H. (2003). Navigating joint projects with dialogue. *Cognitive Science*, *27* (2), 195–225.

Bereiter, C. & Scardamalia, M. (1987). *The Psychology of Written Composition*. Hillsdale, NJ: Lawrence Erlbaum Associates.

Berninger, V.W., Fuller, F., & Whitaker, D. (1996). A process model of writing development across the life span. *Educational Psychology Review*, *8* (3), 193–218.

Biesenbach-Lucas, S. & Weasenforth, D. (2001). E-Mail and word processing in the ESL classroom: How the medium affects the message. *Language, Learning & Technology*, *5* (1), 135–165.

Black, R.W. (2009). English-language learners, Fan Communities, and 21st-century skills. *Journal of Adolescent & Adult Literacy*, *52* (8), 688–697.

Bos, N. & Krajcik, J. (1998, April). Students' awareness of audience in web-published science writing. Paper presented at the Annual meeting of the American Educational Research Association.

Brennan, S. & Clark, H. (1996). Conceptual pacts and lexical choice in conversation. *Journal of Experimental Psychology*, *22* (6), 1482–1493.

Britton, J., Burgess, T., Martin, N., McLeod, A., & Rosen, H. (1975). *The Development of Writing Abilities.* Urbana, IL: National Council of Teachers of English.

Carvalho, J.B. (2002). Developing audience awareness in writing. *Journal of Research in Reading*, *25* (3), 271–282.

Clark, H.H. (1996). *Using Language* (pp. 221–252). Cambridge: Cambridge University Press.

Clark, H. (2003). Pointing and placing. In S. Kita (Ed.), *Pointing: Where Language, Culture, and Cognition Mee*t (pp. 243–268). Mahwah, NJ: Lawrence Erlbaum Associates.

Clark, H. & Brennan, S. (1991). Grounding in communication. In L.B. Resnick, J.M. Levine & S.D. Teasley (Eds.), *Perspectives on Socially Shared Cognition* (pp. 127–149). Washington, DC: American Psychological Association.

Clark, H. & Fox Tree, J. (2002). Using uh and um in spontaneous speaking. *Cognition*, 84 (1), 73–111.

Clark, H. & Krych, M. (2004). Speaking while monitoring addressees for understanding. *Journal of Memory and Language, 50* (1), 62–81.

Clark, H. & Marshall, C. (1981). Definite reference and mutual knowledge. In A. Joshi, B. Webber, & I. Sag (Eds.), *Elements of Discourse Understanding* (pp. 414–465). New York: Cambridge University Press.

Clark, H. & Murphy, G. L. (1983). Audience design in meaning and reference. In J.F. LeNy & W. Kintsch (Eds.), *Language and Comprehension* (pp. 287–299). Amsterdam: North-Holland Publishing

Clark, H. & Murphy, G. (1982). Audience design in meaning and reference. *Language and Comprehension*, *9*, 287–299.

Clark, H. & Schaefer, E. (1989). Contributing to discourse. *Cognitive Science*, *13* (2), 259–294.

Clark, H. & Wilkes-Gibbs, D. (1986). Referring as a collaborative process. *Cognition*, *22* (1), 1–39.

Cohen, M. & Riel, M. (1989). The effect of distant audiences on students' writing. *American Educational Research Journal, 26* (2), 143–159.

Coxhead, A. (2000). A new academic word list. *TESOL Quarterly*, 34 (2), 213–238.

da Cunha Recuero, R. (2008). Information flow and social capital in weblogs: A case study in the Brazilian blogosphere. In P. Brusilowsky & H. Davis (Eds.), *Proceedings of the 19th ACM Conference on Hypertext and Hypermedia* (pp. 97–106). New York, NY: Association for Computing Machinery.

DeVoss, D.N., Eidman-Aadahl, E., & Hicks, T. (2010). *Because Digital Writing Matters: Improving Student Writing in Online and Multimedia Environments.* San Francisco, CA: Jossey-Bass.

Ericsson, K.A. & Kintsch, W. (1995). Long-term working memory. *Psychological Review*, *102* (2), 211–245.

Fahey, K., Lawrence, J., & Paratore, J. (2007). Using electronic portfolios to make learning public. *Journal of Adolescent & Adult Literacy*, *50* (6), 460–471.

Flower, L. & Hayes, J. (1981). A cognitive process theory of writing. *College Composition and Communication*, *32* (4), 365–387.

Goffman, E. (1967). *Interaction Ritual: Essays on Face-to-Face Behavior.* New Brunswick, NJ: Transaction Publishers.

Graham, S. & Perin, D. (2007). A meta-analysis of writing instruction for adolescent students. *Journal of Educational Psychology*, *99* (3), 445–476.

Hayes, J.R., & Nash, J.G. (1996). On the nature of planning in writing. In C.M. Levy & S. Ransdell (Eds.), *The Science of Writing* (pp. 3–30). Hillsdale, NJ: Erlbaum.

Heisler, J.M. & Crabill, S.L. (2006). Who are "stinkybug" and "Packerfan4"? Email pseudonyms and participants' perceptions of demography, productivity, and personality. *Journal of Computer-Mediated Communication*, *12* (1), 114–135.

Holliway, D. (2004). Through the eyes of my reader: A strategy for improving audience perspective in children's descriptive writing. *Journal of Research in Childhood Education*, *18* (4), 334–350.

Holliway, D. & McCutchen, D. (2004). Audience perspective in young writers' composing and revising. *Revision: Cognitive and Instructional Processes*, *13*, 87–101.

Horton, W. & Gerrig, R. (2002). Speakers' experiences and audience design: Knowing when and knowing how to adjust utterances to addressees. *Journal of Memory and Language*, *47* (4), 589–606.

Huffaker, D. (2004). The educated blogger: Using weblogs to promote literacy in the classroom. *Association for the Advancement of Computing in Education Journal*, *9* (6), 91–98.

Ito, M., Baumer, S., Bittanti, M., Boyd, D., Cody, R., Herr-Stephenson, B., Horst, H.A., Lange, P.G., Mahendran, D., Martinez, K.Z., Pascoe, C.J., Perkel, D., Robinson, L., Sims, C., & Tripp, L. (2009). *Hanging Out, Messing Around, and Geeking Out: Kids Living and Learning with New Media.* Cambridge, MA: MIT Press.

Kellogg, R.T. (2008). Training writing skills: A cognitive developmental perspective. *Journal of Writing Research*, *1* (1), 1–26.

Kroll, B.M. (1984). Writing for readers: Three perspectives on audience. *College Composition and Communication*, *35* (2), 172–185.

Kurcz, I. (2004). Communicative competence and theory of mind. *Psychology of Language and Communication*, *8* (2), 5–18.

Lam, W.S.E. (2000). L2 literacy and the design of the self: A case study of a teenager writing on the internet. *TESOL Quarterly*, *34* (3), 457–482.

Laufer, B., & Nation, P. (1995). Vocabulary size and use: Lexical richness in L2 written production. *Applied Linguistics*, *16* (3), 307–322.

Magnifico, A.M. (2010). Writing for whom? Cognition, motivation, and a Writer's audience. *Educational Psychologist*, *45* (3), 167–184.

Marwick, A.E. & Boyd, D. (2010). I tweet honestly, I tweet passionately: Twitter users, context collapse, and the imagined audience. *New Media & Society*, *13* (1), 114–133.

McCutchen, D. (1996). A capacity theory of writing: Working memory in composition. *Educational Psychology Review*, *8* (3), 299–325.

McCutchen, D. (2000). Knowledge, processing, and working memory: Implications for a theory of writing. *Educational Psychologist, 35* (1), 13–23.

McCutchen, D., Covill, A., Hoyne, S., & Mildes, K. (1994). Individual differences in writing: Implications of translating fluency. *Journal of Educational Psychology*, *86* (2), 256–266.

Piche, G. & Rubin, D. (1979). Development in syntactic and strategic aspects of audience adaptation skills in written persuasive communication. *Research in the Teaching of English*, *13* (4), 293–316.

Piché, G., Rubin, D., & Michlin, M.L. (1978). Age and social class in children's persuasive communication appeals. *Child Development*, *49* (3), 773–780.

Potter, J. (2012). *Digital Media and Learner Identity: The New Curatorship*. New York: Palgrave Macmillan.

Rijlaarsdam, G., Couzijn, M., Janssen, T., Braaksma, M., & Kieft, M. (2006). Writing Experiment Manuals in Science Education: The impact of writing, genre, and audience. *International Journal of Science Education*, *28* (2-3), 203–233.

Rubin, D. (1982). Adapting syntax in writing to varying audiences as a function of age and social cognitive ability. *Journal of Child Language*, *9* (2), 497–510.

Rubin, D. (1997). Writing for readers: The primacy of audience in composing. *Yearbook-National Society for the Study of Education*, *2*, 53–73.

Russell, J., Bachorowski, J., & Fernandez-Dols, J. (2003). Facial and vocal expressions of emotion. *Annual Review of Psychology*, *54* (1), 329–349.

Sacks, H., Schegloff, E., & Jefferson, G. (1974). A simplest systematics for the organization of turn-taking for conversation. *Language*, *50* (4), 696–735.

Shippen, M.E., Houchins, D.E., Puckett, D., & Ramsey, M. (2007). Preferred writing topics of urban and rural middle school students. *Journal of Instructional Psychology*, *34* (1), 59–66.

Traxler, M. & Gernsbacher, M. (1992). Improving written communication through minimal feedback. *Language and Cognitive Processes*, *7* (1), 1–22.

Traxler, M. & Gernsbacher, M. (1993). Improving written communication through perspective-taking. *Language and Cognitive Processes*, *8* (3), 311–334.

West, K. (2008). Weblogs and literary response: Socially situated identities and hybrid social languages in English class blogs. *Journal of Adolescent & Adult Literacy*, *51* (7), 588–598.

Witte, S. (2007). "That's online writing, not boring school writing": Writing with blogs and the talkback project. *Journal of Adolescent & Adult Literacy*, *51* (2), 92–96.

Wolfe-Quintero, K., Inagaki, S., & Kim, H.-Y. (1998). Second language development in writing: Measures of fluency, accuracy & complexity. Honolulu, Hawai'i: Second Language Teaching & Curriculum Center, University of Hawai'i (University of Hawai'i Press).