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ThisCollegeStory.com: How Interactive Writing Media Influenced the Way First-Year Students Made Sense of their College Transition

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THISCOLLEGESTORY.COM: HOW INTERACTIVE WRITING MEDIA INFLUENCED THE WAY FIRST-YEAR STUDENTS MADE SENSE OF THEIR COLLEGE TRANSITION

by

PHILIP KRENISKE

A dissertation submitted to the Graduate Faculty in Psychology in partial fulfillment of the requirements for the degree of Doctor of Philosophy, The City University of New York

2016
ThisCollegeStory.com: How Interactive Writing Media Influenced the Way First-Year Students Made Sense of their College Transition

by

Philip Kreniske

This manuscript has been read and accepted for the Graduate Faculty in Psychology to satisfy the dissertation requirement for the degree of Doctor of Philosophy.

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ABSTRACT

ThisCollegeStory.com: How Interactive Writing Media Influenced the Way First-Year Students Made Sense of their College Transition

by

Philip Kreniske

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Drawing on insights from Bakhtin (1986) that demonstrated the significance of writing as an interaction, and building on recent developments in narrative analysis that offer insights into narrator’s sense-making processes (Daiute, 2014; Lucic, 2013); this research explores how first-year students in an educational opportunity program used interactive writing media to make sense of their transition to college. The exploration involved three main questions and each question concerns students’ development over time:

- First, did college students’ writing in two different media (blogs and word-processed text) differ and did these differences change over time?
- Second, how did the narrators and audience interact and specifically why did some blog posts receive more comments than others and how did commenting patterns change over time?
- Third, how did the linguistic trends detailed in questions one and two play out for individual students and over time?
The implications of each of these questions are then explored in terms of understanding how the interactive potential of the media influenced students' psychological development over the first six months in college.

Analyses indicated the bloggers were motivated by the interactive community of peer readers, as evidenced by greater rates of cognitive expression and intensity in their writing over time than students who word-processed. Writers use intensifying language to communicate emphasis and call attention to their psychological states, which comprise both cognitive and emotional expressions (Daiute, 2014). Interestingly, peer readers made more comments on blog posts with high levels of intensifying language and psychological state words. Finally, a detailed comparison of writing by three students suggests that the students who blogged not only used greater rates but also greater varieties of intensifying language. Students in both media used traditional intensifying language such as "really" and "very". However, the bloggers used greater varieties of intensifying techniques including creative punctuation, such as multiple exclamation points, strings of capital letters, and emoticons. These results demonstrate the multiple ways that the media influenced students' thinking processes in writing over time.

These findings extend the current understanding of narrator-audience relationships by demonstrating that the potential for narrator-audience interactivity in a given writing medium influences narrators' use of writing for sense-making over time. The ways that students' writing changed over time and by media indicate how the activity influenced students' psychological development during their transition to college. In addition, the features of the blog allowed students to develop a culture of commenting within the digital college community. Future work may consider how media with different features may contribute to differences in student writing and psychological development.
This contribution has relevance for the design of university writing programs within and beyond the program of study. Practitioners will find these results particularly significant as they show that the interactive blog allowed students to develop a supportive digital community as they transitioned to college. I plan to build upon the current findings, and continue my collaboration with the program of study and the office of assessment, to explore if first year retention rates and GPA differed for students who blogged as compared to those who word processed about their transition. The current findings have significance for scholars seeking to understand connections between interactive media, writing processes, and audience, and for college programs across the U.S. that provide support for low-income first-year students.
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Think! Think and wonder.
Wonder and think.

– Dr. Seuss
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Chapter I

ThisCollegeStory.com: How Interactive Writing Media Influenced the Way First-Year Students Made Sense of their College Transition

Literacy theorists in the 1980s singled out the importance of audience (Flower, 1979; Ong, 1975) and argued convincingly that writing is always directed from the writer to an imagined reader and that writers address different others in different ways (Bakhtin, 1986; Black, 1989; Bazerman, 2004; Cohen & Riel, 1989; Ede, 1989; Freedman, 1994). Simultaneously, a parallel line of research explored the impact of the then new interactive writing medium, the word-processor, on the way that narrators thought and wrote (Collier, 1983; Daiute, 1983; Daiute, 1985; Daiute & Kruidenier, 1985; Scardamalia, Bereiter, McLean, Swallow & Woodruff, 1989; Schwartz, 1982). Where previously computers had been the domain of the military and research universities, in the late 1970s and early 1980s there was great excitement surrounding the proliferation of microcomputers and the concurrent introduction of word processing to home and school contexts (Hawisher, Leblanc, Moran, & Selfe 1996; Kidder, 1981/1997). These technological innovations expanded the usability of and access to word processors, and inspired researchers to explore the ways that interactive writing programs influenced narrators to read and reflect on their writing (Burns & Culp, 1980; Daiute, 1985; Flinn, 1987).

For the contemporary writer, automatic prompting programs, including grammar and spell checkers are considered standard features, and much writing is created in interactive Internet based forums like blogs and other social media sites (Nielsen, 2012). This explosion of interactive writing media, in part fueled by technological advancements that have made these writing media more user friendly, has spurred researchers to explore the expanded possibilities
for and implications of narrator-audience interaction (Baker & Moore, 2008; Fishman, Lunsford, McGregor, & Otuteye, 2005; Manago, Tamara, & Greenfield, 2012).

After reviewing literature on audience, word-processing, blogging, sense-making, and finally the transition to college, this dissertation investigates how the distinct narrator-audience interactions in two writing media – a blog, and a word processor - influenced the way first-year college students wrote, and made sense of the college transition. The blog allowed for peer comments on students’ writing, whereas students who word-processed received no comments from their peers. While there are many possible ways to understand differences in writing, this research was particularly concerned with the process of sense-making across media and therefore focused on the evaluative components of writing such as psychological state expressions, like cognitive words and emotional words, and intensifying language. The investigation involved three multi-faceted questions and analyses: First, did college students’ writing in two different media (blogs and word-processed text) differ and did these differences change over time? Second, how did the narrators and audience interact and specifically why did some blog posts receive more comments than others, and how did commenting patterns change over time? Third, how did the linguistic trends detailed in questions one and two play out for individual students and over time? The implications of each of these questions are then explored in terms of understanding how the interactive potential of the media influenced students’ psychological development over the first six months in college.

Findings extend the current understanding of narrator-audience relations, writing technologies, and psychological development, by demonstrating that the potential for narrator-audience interactivity in a given writing medium influences narrators’ writing and thinking over time in specific ways.
Audience Influences Writing

Theorists and practitioners agree that writing is a social process (Bakhtin, 1986; Bazerman, 2004; Ede, 1989; McLane, 1992; Ong, 1975). Explicitly or implicitly, writing is always directed from the writer to an imagined reader or readers. Bakhtin named this phenomena addressivity (Bakhtin, 1986), and began to detail how people address different others in different ways. There is a long and rich history of studies on writing in different contexts sometimes with an implicit and at times explicit audience frame (see reviews by Magnifico, 2010; Sperling, 1996). Recently, researchers have examined these differences in terms of genres. For example, when composing autobiographical or fictional stories participants make cultural assumptions about their audience and what might be more or less acceptable to include. Thus, how a narrator perceives the audience and therefore decides on a genre for a story appears to influence the way that narrators write and what stories they tell when (Daiute, 2012; Daiute, Todorova & Kovacs-Cerovic, 2015).

Researchers have found that when a specific and active audience is addressed, it potentially influences writers’ compositions more than when writers are directed to write for a general audience that offers no feedback (Black, 1989; Cohen & Riel, 1989; Freedman, 1994; Purcell-Gates, Duke & Martineau, 2007). Flower (1979), in an early study of more and less successful college-age writers asserted that more successful writers paid more attention to audience. Flower noted that more effective writers’ process was “marked by constant re-examination of their growing product and an attempt to refine, elaborate, or test its relationships, plus an attempt to anticipate the response of a reader” (p. 36). According to Flower it is cognitively taxing to imagine an audience while simultaneously generating and writing new ideas.
Similarly, Black (1989) showed that the more information college writers had about their audience the better their writing. In this study participants first completed a pre and post writing self-analysis and wrote a persuasive paper. Next the researcher grouped participants into low, mid and high performance writers based on their scores on the pre and post analysis and their persuasiveness paper score. Half of the participants in each of these groups were given information about their audience and the other half were not given information about their audience. “Participants were told of the extent of knowledge the audience had about the topic, the values that the audience held that related in any way to the topic, the attitudes that the audience had in relation to the topic, and the related goals of the audience” (p. 236). All participants were again asked to write a persuasive essay on the same topic. These essays were then analyzed on three measures: how they made arguments, how they adapted to their audience, and finally their overall quality of persuasion. Black found that students who were given more information about their audience scored higher on all three measures of writing quality regardless of their previous writing performance.

Flower, Black, and others showed that giving narrators information about their audience influenced the quality of the narrators’ writing. Illustrating the importance of context and the social relationship between narrator and audience, researchers have also shown that diverse collaborative writing situations, including teacher-student and student peer-peer authoring activities, involved different types of interaction and consequences (Daiute, Campbell, Griffin, Reddy & Tivnan, 1993; Jacobs & Karliner, 1979; Janangelo, 2010; Michelle, 1998; Sperling, 1992). How do narrators write differently when addressing different audiences?

In a 3rd and 4th grade writing unit focused on creating articles for the class newspaper, Daiute et al. (1993) showed that the teacher-student collaboration elicited different social
interactions as compared to student-student collaboration. The teacher-student collaboration involved explicit questioning and changes in students’ writing over time, such as more standardized organization of paragraphs (with main ideas and supporting details) compared to peer-peer interactions which involved more language play and conceptual exploration that resulted in greater fluency.

These differences indicate the importance of examining different kinds of interactions and consequences across different activity and genre settings. In some contexts more conversational types of conferences contributed in particular to improved structure of student writing (Daiute et al, 1993; Janangelo, 2010; Sperling, 1992). Overall, it seems offering diverse activity settings creates a learning environment where narrators can develop an array of writing skills for addressing different audiences.

Research into narrator-audience interaction addressed theoretical questions of the social nature of writing as a means of human development as well as practical issues in the nature of writing. Research into the social nature of writing began as inquiry about cognitive processes inherent in adolescence and beyond but then expanded to consider the inherently social nature of human cognitive and other processes, as suggested by Vygotsky with concepts like “zone of proximal development”. A zone of proximal development operates in the author-audience relation differently in different collaborative pairs (such as peer-peer and teacher-student mentioned above) and in differently interactive writing technologies in practice.

Further, the student-teacher relationship even in the most supportive learning environment involves an explicit power dynamic that may limit the possibilities for developing diverse writing skills. How might interactions with peers differ?

Present peer as audience offering written feedback on student writing. DiPardo and
Freedman (1988) detailed how teachers were in effect surrendering power when they assigned writing tasks that directed students to target their writing to peers. Perhaps it is this power shift that motivates students and allows them to experiment in their writing and feedback. In contrast to writing to a teacher, writing to a peer may provide an informal space for students to play with language (Gee, 2007; Daiute & Dalton, 1988; Daiute et al., 1993; Dix & Cawkwell, 2011; Michaels & Foster, 1985; Purcell-Gates et al., 2007).

Collaborating with peers positioned students as knowledgeable contributors who could share their expertise and perspectives through peer comments. Daiute and Dalton (1988) found that students who wrote collaboratively – giving each other feedback during the writing process – subsequently made significant improvements in their individual writing tasks. Perhaps students made improvements because the collaborative activity helped them question their own points of view by imagining their peers as an audience. Another method for cultivating peer commentary involves exchanging writing journals with peers. Researchers have found this to be an effective way to develop writers through peer feedback in English Language Learning classes (Peyton & Staton, 1993), and for classes with students who are hearing impaired (Staton, 1985), and in general educational settings (O’Sullivan, 1987; Shuy, 1987).

However, even when students are working with peers they often imagined the teacher as the audience. Freedman (1992) found that such implications of the teacher audience also limited adolescents’ peer response in a 9th grade classroom. Freedman detailed how one student explicitly asked their peer to remove a negative comment. The peers then discussed whether or not the teacher would see the original document with the comment, and the commenter then changed the negative comment to a positive comment. In this example the positive comment was in reference to an opening sentence that apparently was nonexistent. Imagining the teacher
audience and the subsequent peer conversation resulted in one peer writing an exuberant and farcical comment on a nonexistent opening sentence.

The technological developments of the 1990s allowed students to use email to communicate with peers beyond their immediate classroom. Such interactions provided opportunities for students to write to diverse audiences, including those that may be similar in age but different in terms of geographic and cultural characteristics and in many cases it was these differences that generated the impetus for purposeful exchanges (Cohen & Riel, 1989; Ducate & Lomicka, 2008; Freedman, 1994).

**Distant peer as audience.** Even before the prevalence of electronic communications some researchers and practitioners experimented with cross-cultural writing exchanges. Freedman (1994) initiated a cross-Atlantic exchange through the mail between student writers in London and the San Francisco Bay area. Embedding the communication between distant peers into classroom writing lessons provided a purpose for writing and the students were motivated by the opportunity to interact with a distant peer and showed the importance of the surrounding cultural context.

According to developmental theory, distance provides a context for extending what one knows to something just beyond that (Vygotsky, 1978). The distant peer shared a number of characteristics with the narrator, such as age, school attendance, English proficiency. However, these peers were also distant and largely unknown. Therefore, each narrator needed to imagine their distant peer and imagining the audience in the cooperative context of letter writing fostered learning and development. As Vygotsky (1978) states, it is in this process “that learning awakens a variety of internal developmental processes that are able to operate only when the child is interacting with people in his environment and in cooperation with peers. Once these processes
are internalized they become a part of the child’s developmental achievement” (p. 90). In Freedman’s work the writer and distant peer interacted within the environment of the written letter, with the peer physically distant but psychologically present. According to Freedman the students in California benefitted most from interacting with their British peers, who were generally stronger writers and had an educational context that placed more emphasis on teacher support of each students’ writing proficiency and development.

Cohen and Riel (1989) offer an example of how the affordances of early digital communications, like email, had important implications for middle school students’ writing. They showed that in Israel 7th grade students earned significantly higher ratings, from educational raters who were blind to the writing condition, when addressing a peer group via email as compared to when they were addressing their teachers. Even though the teacher-directed writing was for class credit and the peer writing was not, the compositions directed toward the distant peer audience earned significantly higher scores in all five aspects of composition including, content, organization, vocabulary, language use and mechanics. As early as 7th grade, students appear acutely aware of audience and it influences the way they write.

At the same historical moment that researchers were exploring these narrator-audience relationships, new writing media like the word-processor were changing the way that narrators perceived their own writing too.

**Interactivity of the Word Processor**

Nearly from its inception researchers have noted the potential to edit and revise as a major capability of the word processor (Bangert-Drowns, 1993; Cochran-Smith, Paris, & Kahn, 1991; Daiute, 1983). Where previously it was cumbersome for the writer to correct spelling, grammar and structural errors, the word processor allowed writers to swoop into documents and
swiftly eliminate errors, or so writers hoped (Kirschenbaum, 2016). This potential for editing fostered a type of dialogue between the narrator and machine that was well illustrated in Kirschenbaum’s (2016) account of the industrious science fiction writer Isaac Asimov.

Kirschenbaum (2016) describes how Asimov, when using a typewriter, relied heavily on copyeditors to correct his manuscripts. Asimov consistently misspelled words to the point that the text was sometimes difficult to decipher without a phone conversation between author and copyeditor. When Asimov began using a word processor he could see his typos and easily move the cursor across the screen to make corrections; in short, he began copyediting his own work (Asimov, 1995). The screen and the word processor afforded Asimov the ability to see and quickly edit his own work. Asimov was no longer only putting words on the page – he was in dialogue with himself.

**Word processing and interactivity.** Theorists and practitioners in the 1980’s also explored the implications of word processing on writing with specific attention to interactivity (Daiute, 1983; Daiute, 1985; Daiute & Kruidenier, 1985; Scardamalia, Bereiter, McLean, Swallow & Woodruff, 1989; Schwartz, 1982). As noted in the Asimov example, the word processor projected the writer’s words onto a screen, like a television, and this, in combination with the new ease of editing and re-writing, promoted the writer’s dialogue with and editing of his own work. Furthermore, some early word processors provided writers with feedback. Daiute (1983) recounts how one word processing program rejected wrong commands, “including an extra space or comma” (p. 141) and another word processing program even offered writers the option to select from among prompts to re-read their writing, such as to make sure a main idea was clearly stated, with the effect that using such prompts led to increased revisions (Daiute & Kruidenier, 1985). These early works suggest a relationship between writing and medium and
provide insight into the ways that specific characteristics of the medium influenced writing. In general, the word-processor appeared to encourage narrators to edit more, while the modified version of the word-processor encouraged even greater rates of editing. These works show the influence of the word-processing medium on writing and thinking processes that perhaps are taken for granted in the current era.

While the word processor is not an audience, it simulates the interactivity of an audience by offering limited feedback. Currently word processors, like the program in which I am writing (Microsoft Word), offer real time highlights questioning misspellings and certain grammatical structures. Those of us who use word processors regularly have become accustomed to these red and green squiggled interjections, so much so that they may be easy to ignore. Perhaps it is this regularity of mechanized feedback, in combination with the widely noted shortcomings of such grammar and spellcheckers that makes it easy to dismiss the word processor’s advice (Bishop, 2005; McGee & Ericsson, 2002; Schwartz, 1982). Furthermore, the word processor, unlike a teacher, has no power – it is the writer’s choice to accept or reject the word processor’s suggestions. The word processing environment provides a space that offers limited and predictable feedback.

In these conventional word processing programs writing is composed on a personal computer. A narrator can then choose to share his writing in a linear fashion by sending it to specific others. Blogs and other interactive writing media use word processing software too. However, the fundamental difference between conventional word-processing software and interactive writing media like blogs – is that when using a blog the writing is created on, and then shared via the Internet. It is this Internet-based composition that creates the potential for
seamless sharing of, and commenting on writing, which distinguishes blogs and other interactive writing platforms from conventional word processing software (McFarland & Ployhart, 2015).

**Implications of Blogging**

The shift in recent years to massive use of digital and explicitly social writing has further increased the importance of audience (Baker & Moore, 2008; Fishman, Lunsford, McGregor, & Otuteye, 2005; Lammers, Magnifico, & Curwood, 2014; Magnifico, 2010; Manago et al., 2012). While each interactive writing medium has distinct capabilities, there are two main functions common to all such media that I argue account for the increase in importance of audience. First, the narrator can choose to use the interactive writing medium as a tool for reaching a wide or a specific audience. Second, and perhaps even more importantly, the nearly universal comment function provides audiences with a tool for interacting with the narrator. While these functions are not new, what makes the current context ripe for exploration is the increased ease of use, mobility, and ubiquitous quality of interactive writing tools today. The broad availability and use of these interactive media have major ramifications for the way that narrators think and feel, and ultimately use writing to make sense of a particular context or challenge.

Currently much writing is being created and shared in digital contexts (Davidson, 2011; Devos, Eidman-Aadahl, & Hicks, 2010; Fishman et al., 2005; Greenhow, Robelia, & Hughes, 2009). Blogs are one type of digital context that has proliferated in recent years, increasing in number from approximately 35 million sites in 2006 to 181 million in 2012, with the three most popular blog providers reporting 80 million unique visitors in a month (Nielsen, 2012). Early blogs required users to be proficient coders; however, in recent years programs such as Blogger and Wordpress have made blogging more accessible, providing easy-to-use platforms and coding is no longer a prerequisite for blogging (Sosnowy, 2013). Often, but not exclusively, blogs are
written from one author’s or group of authors’ perspective. While blogs take a number of forms, they most often consist of personal opinion pieces organized as dated entries, called posts, which are presented in reverse chronological order (Bukvova, 2011; Powell, Jacob, & Chapman, 2012). Posts are generally text-based and often include images and hyperlinks to other websites and blogs. Once an author publishes a post readers are then able to view and write comments on the post.

While blogs are one type of social media, they differ from platforms like Facebook and Twitter in two main ways: first, the opportunities for interaction are more limited and structured on a blog. Second, blogs generally place more emphasis on longer written texts, with a typical post being more than 500 words, as opposed to Twitter where writers are limited to 140 characters, and though Facebook does not have the same limitations, the average post is around 122 words (Cvijikj & Michahelles, 2011). These two distinctions make blogs an ideal environment for studying narrator-audience relations and the ways that narrator-audience interactivity influence writing.

Interactivity of blogs. As Benkler (2006) notes, blogs provide an environment where individuals can use writing to explore social possibilities and create dynamic relationships in a digital space. These relationships are formed as narrators write about meaningful topics and their audience uses comments to interact with the narrator. Blogs are often used as a space for narrators to express their thoughts and values about particular topics (Gee, 2007). For example, Sosnowy (2013) showed how bloggers wrote about their experience with multiple sclerosis, Greene (2013) focused on bloggers who wrote about teaching in the New York City public schools, and Ducate and Lomicka (2008) described the ways students’ blogged about shared
values in a college language class. Bloggers can use these digital spaces as social exchanges to support each other through comments on specific topics of value.

Blogs provide a forum for writers and commenters who share a particular interest to communicate across time and geographical space. Some posts and subsequent comments may appear synchronous, almost like an instant message communication, while other posts and subsequent comments occur asynchronously (Bolander, 2012). These interactive capabilities shift the traditional dynamics of narrator-audience relations and magnify the importance of audience in the blogging medium as compared to more traditional writing formats like word processing.

Because of the availability and ease of use of these interactive capabilities, the importance of audience is magnified in the blogging context, and the potential for narrator-audience interaction may contribute to the formation of connections between bloggers and their audience. These connections function as implicit and explicit supports that comprise the interactive writing environments, which could not have been developed with previous writing media such as the word processor. These narrator-audience interactions may be one reason that researchers have found that blogging contributes to positive emotional development (Baker & Moore, 2008; Bane, Cornish, Erspamer, & Kampan, 2010; Boniel-Nissim & Barak, 2011; Ko & Kuo, 2009; Schmitt, Davanim, & Matthias, 2008; Sosnowy, 2013) and perhaps cognitive development as well (Davidson, 2011; Ducate & Lomicka, 2008; Fishman et al., 2005). However, few empirical studies have been conducted and scholars have noted a need for further research on the potential benefits and risks of these interactive writing networks (Boniel-Nissim & Barak, 2011; Manago & Vaugh, 2015; Wuyts, Broome and McGuire, 2011).
Researchers have analyzed some of the ways bloggers interact with their audiences and how this influences the act of blogging (Bolander, 2012; Miura & Yamashita, 2007; Sosnowy, 2013). These studies have been primarily descriptive – focusing on existing blogs and comments. Such descriptive studies offer invaluable information about how bloggers and their audiences interact. Nevertheless, descriptive studies often lack additional information about the participants – such as how participants’ blogging activities function as tools for cognitive and emotional development and how this development might be reflected in academic contexts.

**Blogging and communication across space.** Highlighting the interactive capabilities of blogs, Ducate and Lomicka (2008) explored the ways reading and posting to blogs in a foreign language provided college students an opportunity to engage with the foreign language and foreign culture in an interactive and meaningful context. Where in the past researchers like Freedman (1994) mailed standard written documents, and Cohen and Riel (1989) used email to generate intercultural exchanges with specific foreign others, using a blog allowed Ducate and Lomicka’s (2008) to select their own audiences. Depending on the settings, which are often determined by the blogger, a blog can be viewed by anyone in the world or can be viewed only by select people.

The blogs detailed in Ducate and Lomicka (2008) were public, and this allowed students in the United States to read posts by bloggers who lived in geographically distant locations. This simple interaction, where college students in the United States could discover and communicate with French and German bloggers in distant locations highlights one of the key interactive potentials of the blog and provides a rich context for forging intercultural connections despite apparent geographic obstacles. The interactive capabilities of current technologies make the distance primarily mental rather than physical. In terms of audience the college students were
imagining addressing a distant other, though because of the interactive potential of the medium this other was present and proximal. The distance was created through the imagining of the foreign audience.

Ducate and Lomicka (2008) described how the blogging medium allowed students to form social relationships with geographically distant writers. In the first semester, Ducate and Lomicka (2008) directed students to become acquainted with, and then follow a blog written in the relevant foreign language. The activity of searching and selecting a blog turned into an intercultural learning experience and formed a foundation for future language development and cultural understanding. The researchers described how students expressed similarities and noted connections between their personal likes and communication styles and those of the bloggers they followed.

In the second semester the participants in Ducate and Lomicka’s study were directed to create their own blogs and each week they posted on a specific topic and wrote at least two comments on classmates’ blogs. Ducate and Lomicka (2008) found the assigned topics that were related to personal issues elicited more “unique and candid” posts (p. 23). According to these researchers, blogging, at least for college students, was most effective when it concerned topics of personal importance. Ducate and Lomicka were not explicitly concerned with measuring cognitive and emotional development. However, it is interesting to consider how the social interactions across geographical and language barriers may provide a space for the participants and their interlocutors to develop emotionally and cognitively.

**Narrator-audience interactions and social-emotional processes.** Writing about matters of personal value in private word processing settings, such as the transition to college, has been shown to lead to positive cognitive and emotional outcomes (Walton & Cohen, 2011; Walton,
Logel, Peach, Spencer & Zanna, 2015; Yeager & Walton, 2010). In these studies the narrators knew little about their audiences and there were no opportunities for audience interaction. The majority of literature reviewed thus far suggests that writing with a similar prompt but to an interactive and known audience might change the way participants write and think about their college transition. Furthermore, could the interactive capabilities of the blog contribute to increased positive development? Or might, as Flower (1979) suggested, this increased emphasis on audience overwhelm some writers and even cause increased stress or other unanticipated negative emotions and therefore lead to decreases in the positive gains normally associated with writing interventions?

The narrator-audience interactions on blogs appeared to foster the development of social supports and contribute to positive emotional development in a variety of contexts (Baker & Moore, 2008; Chen, 2012; Wuytes et al., 2011). Over a two-month period Baker and Moore (2008) documented bloggers’ reports of increased social integration, reliable alliance and friendship satisfaction as compared to a group of non-bloggers. Baker and Moore suggest future work on blogging and health focus on the topic of audience. Boniel-Nissim and Barak (2011) did compare a variety of interactive writing conditions on participants’ emotional development.

*The personal diary compared to blogging.* When Boniel-Nissim and Barak (2011) randomly assigned teenage participants to one of six conditions, four involving blogging, the researchers found the blogging group with the highest potential for audience interaction showed the highest levels of positive and emotional development. The six conditions, listed in order of most interactive to most restrictive, included writing about their *social difficulties* in a blog that was open to comments (the most interactive); writing about their social difficulties in a blog that was closed to comments; writing about *general subjects* in a blog open to comments; writing
about general subjects in a blog closed to comments; writing in a private diary on a personal computer about their social difficulties; a no-writing control group.

Boniel-Nissim and Barak (2011) directed the participants in the various writing conditions to write twice a week for at least 20 minutes and each post was to be between 200 and 800 words in length. Participants in the personal computer diary group were instructed to write for the same amount of time and length of narrative but to do so using a word processing, not a blogging, application. To measure the participants’ emotional state over the course of the intervention the researchers used a self-esteem survey, a peer relationship survey and an activity checklist survey, which were administered before the intervention, immediately following the intervention and two months after the conclusion of the intervention. In addition, Boniel-Nissim and Barak (2011) employed four counseling psychologists, who used a rating scale adapted from Hartup and Steven’s (1999) research on adolescents’ social-emotional difficulties to rate the social-emotional condition of the participants’ writings.

Results indicated the mean gain for participants in the four blogging conditions on the Self-Esteem Scale, the Index of Peer Relationships and the Interpersonal Activities Checklist, were all higher than the mean scores for participants in the private computer diary writing condition as well as the no-intervention condition. Overall, the participants in the blogging conditions that directed participants to write about social difficulties experienced the most consistent gains across the three self-report measures. In addition, commenting appears to have had a positive effect on emotional development, where the group that wrote about general topics and was allowed comments showed more consistent gains across the three measures as compared to the group that wrote about general topics but were not allowed comments. The blogging group with the highest interactivity evidenced the greatest gains – and this was likely because the
conditions of this blogging medium allowed for the narrator and audience to engage in purposeful communication. However, as Boniel-Nissim and Barak (2011) did not analyze the nature of students writing and commenting, future research is needed to investigate how commenting could be related to positive emotional development for bloggers and more generally how the medium might have influenced the way that narrators wrote. Such an analysis, as demonstrated in this dissertation, can illuminate the relationship between writing in media with different levels of interactivity and emotional development.

Furthermore, Boniel-Nissam and Barak’s (2011) report did not present an analysis of the blog comments. Why did the participants in the most interactive condition seem to report the best emotional development outcomes? What were the features of the participants writing and subsequent commenting patterns that might explain this emotional development? Boniel-Nissim and Barak (2011) do not indicate if the comments were generally positive and encouraging, or crude and confrontational. There are also more technical questions related to comments such as, were all comments immediately posted or was there a site administrator who allowed and rejected comments based on a set criterion? As the administrator of three different blogs (“Narrating Change”, 2012; “Kreniske’s Musings”, 2012; “PK Sites”, 2013) I have found some comments are related to the content I post and this can be heartening and inspiring. However, many of the comments must be filtered and deleted because they are advertisements or phishing scams. In the current study in order to eliminate this nuisance, and as detailed more thoroughly in the method section, the blog network was password protected and an administrator (a member of the research team) needed to approve all comments before they appeared on the site.

In other contexts positive comments have been related to increased writing. Miura and Yamashita (2007) surveyed 1,434 blog authors and found positive feedback, including
sympathetic, supportive and encouraging comments, served as an emotional support and motivated bloggers to continue writing. All information, including information regarding blog comments, was gathered from participants through a questionnaire that used Likert-type and multiple-choice questions. Not surprisingly, reports of negative feedback, like criticism and complaints had negative effects on bloggers’ satisfaction with themselves and their perceived level of acceptance by others. One of the strongest predictors of whether bloggers continued writing was how they perceived being accepted by others, with high scores on acceptance leading to continued blogging. This research highlights the importance of the social aspects of blogging and particularly the impact of comments on bloggers. Positive feedback as reported in the questionnaire encouraged bloggers and led to continued writing. However, like the blogging studies noted above, Miura and Yamashita (2007) gathered information from their participants using self-report questionnaires. Further research is needed on the nature of narrator-audience relationships on blogs, with specific focus on the way that the audience uses comments and how this might influence the way that blog authors write, think and feel.

Although there has been much attention on negative comments on blogs (Anderson, Brossard, Scheufele, Xenos, & Ladwig, 2013; Brossard & Scheufele, 2013) the majority of comments – particularly on personal blogs – are positive and often playful (Bolander, 2012; Mazur & Kozarian, 2009). Mazur and Kozarian (2009) randomly selected 124 emerging adults’ blogs from the six most popular blog hosting sites. Among other methods, the researchers counted the number of comments on each blog post in a process they called interaction coding. The comments were then coded as positive, elaborative or negative. An example of a positive comment was “This post rocks!”; elaborative comments were specific responses to the entries contents, and a negative example offered was “Are you kidding, b__ch” (p. 138). The
researchers found posts typically received either one comment or no comments; the overwhelming majority of the comments, 82%, were positive, 16% were ‘elaborative’ focusing on a specific post’s content, and only 2% of the comments were negative.

Bolander (2012) extensively analyzed eight active blogs with a total of 404 comments and grouped the comments according to a general taxonomy posited by Herring (2007). Bolander selected only blogs that were authored by people who had a “native” command of English and showed recent activity – indicated by new posts and comments and authors’ responses to these comments. The comment categories included seeking information, paying compliments (to the blogger), voicing “thank you” (by the blogger to their readers), and agreement and disagreement. Using a “bottom up” qualitative analysis, Bolander found that the disagreements were frequently between the blogger and what Bolander calls a “favored recipient” and these exchanges – though involving disagreements – were often playful in nature (p. 1619). Future researchers on the topics of blogging and emotional development should continue to analyze the types of comments and the bloggers’ interactions with and use of these comments in the bloggers’ ongoing process of emotional development. Furthermore, were there certain characteristics of posts that were more likely to elicit comments? For example, might an intense post that involved a major realization elicit a high number peer comments as opposed to a post about mundane activities like lunch plans?

The affordances of the blogging medium allow for a type of digital community building where people who share similar interests can support each other through comments. In a typical educational environment blogging supported language learning and facilitated communication between distant peers who shared similar interest (Ducate & Lomicka, 2008). In other studies wherein participants were mailed or emailed directions blogging appeared to contribute to
positive emotional development as measured by a variety of psychometric surveys (Baker & Moore, 2008; Boniel-Nissim & Barak, 2011). Generally positive comments seem to be more common than negative comments (Bolander, 2012; Mazur & Kozarian, 2009). The process of blogging – where a blogger writes a post and then receives comments – appeared to contribute to a type of digital community building (Bolander, 2012; Sosnowy, 2013) that in turn engenders positive emotional development (Baker & Moore, 2008; Boniel-Nissim & Barak, 2011). Results from these studies on blogging and emotional development were promising, however, the findings were based on participants’ responses to measures of emotional development, and rarely did these researchers analyze changes in participants’ actual writing. Given the importance of audience and media, the current study focused on how the potential for narrator-audience interaction influenced the way low-income college students made sense of their transition to college using a blog as compared to a word processor.

Why Writing Matters and When it Matters Most

**Why writing matters.** Writing requires high levels of cognitive and emotional effort and it is in this process of sorting out how best to explain a set of thoughts or emotions to a specific audience that sense-making occurs (Berthoff & Stephens, 1988; Daiute & Nelson, 1997; Emig, 1977; Fulwiler, 1983; Lucic, 2013). Writing is a developmental practice in which a narrator must transform amorphous thoughts and emotions into representative words (Daiute, 2014; Polkinghorne, 1998; Merleau-Ponty, 1945/2014; Wertsch, 1991), and it is through writing that a narrator figures out, or makes sense of cognitive and emotional challenges that may have previously appeared overwhelming. The sense-making occurs during the activity of figuring out how to manifest thoughts and emotions in physical space, and to a given audience. Given this theoretical understanding writing as a tool for sense-making can be especially useful for people
who face challenging transitions and may question *do I belong or am I going to succeed?* The current study is concerned with the ways that low-income first-year students used expressive writing to make sense of their college transition.

In college, students are required to complete a wide range of writing activities from research papers to persuasive essays. Professors teaching college writing use a variety of strategies to support their students’ writing development. For example, Cleary (2011) explored how coaching helped students to recognize and respond to various audiences. To assess students’ progress, Cleary (2011) used criteria that accounted for students’ ability to reflect, revise, and improve their writings. In another writing context, Bird (2013) emphasized the purpose of writing, and used this approach to encourage students to include more casual arguments to persuade readers. Bird (2013) then detailed how Wardle’s (2010) *Writing-About-Writing* was a useful resource that helped students engage in meta-cognitive thinking about their college writing practices and their identities as writers. In brief, Bird (2013) found that by the end of the semester students’ improved their writing as indicated by an increased use of logical expressions and evidence to support claims. In the current study I predicted that the two writing media with different potentials for interactivity would influence students’ use of evaluative language in distinct ways. Therefore, I used a significance analysis, which is a type of narrative analysis specifically designed to analyze students’ evaluative language.

A significance analysis, detailed in the research design section of this dissertation, is a method researchers have used to measure the ways narrators use evaluative devices for sense-making (Daiute & Griffin, 1993; Lucic, 2013). The analysis focuses on the way a story is told, and sheds light on how narrators are enacting thoughts and emotions in relation to a particular audience. Turning personal experiences into narratives is one way that people make sense of
past, present and future (Bruner, 1986). Such sense-making practices are particularly important for people who are experiencing major life transitions. In the United States key transitional periods are often related to academic transitions, such as the transition from grade school to middle school or middle to high school or from high school to college. Lucic (2013) noted that the process of sense-making is even more challenging when people enter culturally diverse developmental contexts. When narrators enter a new cultural context they must reconcile pre-existing strategies for sense-making with their new context (Daiute & Nelson, 1997). One of the ways people reconcile these changes in context is by using evaluative language to interact with the situation, other people, or ideas emerging in their current context in light of their previous experiences.

Evidence of uses of evaluative language for sense-making emerged in a study showing that immigrant adolescents used certain evaluative devices when interpreting a breach in text message interactions by two peers presumably from their group of origin compared to when interpreting the same message as though the peer writers were U.S. born (Lucic, 2013). Lucic showed that, at least in one writing context, narrators used evaluative language differently when addressing different audiences. In the context of this example, and significance analysis in general, it is important to note that the analysis is not concerned with the what of the text messages, such as what the breach concerned. Rather, a significance analysis indicates the how, or the way that narrators tell a story and enact meaning using evaluative devices. The current study is concerned with the ways that students might use evaluative language differently when addressing an interactive audience as compared to an imagined audience. The significance analysis will illuminate the ways that narrators use evaluative language, such as thoughts, emotions and intended emphasis and how this evaluative language may differ between media
with different interactive features and over time. The significance analysis may also be used to understand how commenting patterns develop in an interactive writing context like a blog. However, a significance analysis does not tell researchers about trends in the content of students’ stories, such as what specific challenges students may be facing as they transition to college.

**The transition to college.** In the United States, the transition from high school or work environments to college is fraught with negotiations (Clark, 2005; Terenzini et al., 1994). Transitioning to college requires students to navigate rigorous academic coursework and assume greater independence with increased responsibilities in domains ranging from time management to financial management. While the new college context can be stressful, it also presents an opportunity for students to adapt to, and overcome apparent obstacles. This process can be especially challenging for students from low-income families, many of whom are first generation college students (Hurtrado, Carter, & Spuler, 1996; Hurtado & Carter, 1997; Soria, 2012; Zhang & Smith, 2011). At CUNY, these challenges are reflected in a first-year attrition rate for low-income students in special programs, like the program of study, that is 10% higher than that of the general population, with degree rates reflecting a similar disparity (CUNY Office of Institutional Research and Assessment, 2014).

Two reviews of first-year seminars showed that including writing in the curriculum constituted a high impact practice and was related to increases in first year GPA and first year retention rates (Kuh, 2008; Young & Hopp, 2014). Recent empirical work beyond the first-year seminar has shown that writing about the transition to college leads to improved academic outcomes, such as increased GPA’s and retention rates. For students of color in an elite West Coast private college (Walton & Cohen, 2011) and for women in a demanding engineering program in Canada (Walton et al., 2013), writing about their transitions using pen and paper
contributed to positive outcomes such as increased GPA and improved reported health, as measured by decreased visits to the doctor, when compared to non-writing groups. GPA and visits to the doctor are broad and long-term measures of academic success and health. According to the researchers this writing task may have proved beneficial because the opportunity to express their opinions about a context where people of color and woman have been historically discriminated served as an affirming activity. However, as social psychologists interested in primarily quantitative academic outcomes, the researchers did not analyze the participants’ narratives. The aforementioned research made some unstated assumptions about writing but absent writing theory, the work offers little insight for explanations for the distal outcomes such as increased GPA and decreased visits to the doctor.

As noted above, writing with co-authors of different expertise, or writing emails to teachers as opposed to peers, resulted in distinct changes in students’ writing and thinking. How might a writing context that allowed for substantive interaction lead to more or different types of gains? Could this process of change be documented over a shorter time period using more fine-grained measures such as narrative analyses? According to narrative theory (Daiute, 2014; Polkinghorne, 1998; Merleau-Ponty, 1945/2014; Wertsch, 1991), the participants’ narratives and the ways these narratives changed are physical manifestations of cognitive and emotional development.

Online arenas like blogs provide a space that is familiar to the contemporary student, and critically for the purposes of this study, a space where emotional and expressive writing are welcome, and peer interaction through comments are encouraged (Smith, 2008). Writing to an active audience motivates writers (Boniel-Nissim & Barak, 2011; Ducate & Lomicka, 2008;
Sosnowy, 2013) and this may lead individuals to increased investment of thought and emotions into their compositions.

Further, support networks such as those formed with family and friends may be particularly important for first-year black and Latino college students as studies have linked these networks to increased retention and academic success rates (Elkins, Braxton, & James, 2000; Keup & Barfeoot, 2005; Thomas, 2000). For students most in need of psychological and social supports, different forms of interactivity such as those offered through blogging, may provide an additional way to generate a support network.

The blogging context examined in the present study provides an explicitly social space where participants may engage in substantive interactions with an active audience. As noted previously, the literature indicates that blogging contributes to cognitive and emotional development. Might this interactive writing context motivate the bloggers to increase their cognitive and emotional investment in their writings as they make sense of their college transition and simultaneously attempt to engage their audience in a digital conversation. Furthermore, will such increased levels of cognitive and emotional effort be evidenced by increased use of cognitive, emotional and intensifying language and how might the uses of these linguistic devices change over time?

**Research Questions and Overview**

In this chapter, I have presented the theoretical and empirical foundations of this work. In brief, researchers have demonstrated that the audience influences the way narrators write, think, and make sense of their worlds (Black, 1989; Cohen & Riel, 1989; Daiute, 2010; Lucic, 2013). Combinations of recent technological developments and user interest in social media have resulted in a massive increase in the uses of interactive writing media especially for youth
(Nielsen, 2012). Simultaneously, though college enrollment rates for low-income students are still below peers from middle- and high-income families (Hoxby & Avery, 2013), enrollment rates for previously underrepresented populations have increased exponentially in recent years (Davis & Bauman, 2011; Fry & Lopez, 2012; National Center for Education Statistics, 2013). Nevertheless, college attrition rates for both low-income students and students from historically underrepresented populations remain high (Soria, 2012; Zhang & Smith, 2011).

This dissertation braids together research on narrator-audience interactions, writing media, sense-making, and the transition to college, to explore how first-year narrators wrote and subsequently made sense of their college experiences differently in the two media. This exploration involved three distinct questions and analyses: first, did college students’ writing in the two media (blog and word-processor) differ and did these differences change over time? Further, what are the implications of these changes for understanding the students’ psychological development as they transition to college? Second, how did the narrators and audience interact and specifically why did some blog posts receive more comments than others? Third, how did the linguistic trends detailed in questions one and two play out for individual students?

In Chapter 2, I will detail the research design, including the practice-based context, the participants, the materials and the procedure. Chapter’s 3, 4, and 5 each include analyses and results for one of the three research questions. In Chapter 3 I present the hierarchical linear models that I used to measure the differences between the ways participants wrote with the blog as compared with the word processor. In Chapter 4, I describe the linear regression that I used to discern patterns of interactivity and specifically commenting activities on the blog. In Chapter 5, I describe the fine-grained qualitative analysis of three individual narratives. In Chapter 6, I
present a discussion of the overall findings, explore the significance of the work, and finally consider directions for future research.
Chapter II

Research Design

This chapter presents the research design, including the general context of the study, the participants, the questionnaires, the writing media, the procedure and an explanation of the qualitative coding schema. In order to answer the research questions of this study I used qualitative and quantitative approaches. The qualitative coding schema provided the basis for statistical comparisons that allowed me to answer the research questions concerned with how writing in different media influenced students’ thinking and sense-making processes. The project was embedded within a SEEK (Search for Education, Elevation and Knowledge) first-year seminar at a City University of New York (CUNY) college campus. SEEK, described in more detail below, is an educational opportunity program that provides college funding for students from low-income families.

Context

The study grew out of a two-year collaboration with administrators, faculty and students at the college of study, and with the New Media Lab at the CUNY Graduate Center. I was first introduced to the SEEK program by the director of Center for Teaching and Learning (CTL) at the college of study who also founded and maintained a campus wide blogging network built in WordPress and BuddyPress. The blog network was used by students and faculty for online publishing and academic networking, and as a tool to generate course related writing (Brier, 2012). While the blog network provided the tool that enabled students and faculty to publish and communicate within and beyond courses, it was the work of faculty and staff who designed curricula with this tool in mind that made the network a vibrant and interactive space. The director of the CTL informed me that while the majority of first-year students had been blogging
about their transition to college on the campus wide network as part of a curriculum designed for the first-year seminar, the students in the SEEK program had not participated.

Later, in a meeting with the SEEK administrators, I learned of the factors that had led to the SEEK department’s abstention from the campus wide blogging activity. The administrators told of how years earlier one SEEK faculty member’s first-year seminar class had experienced an unsuccessful foray into the blogging community. The details of this experience were not communicated to me at the time and remain mysterious to this day. There were also concerns about student privacy and the potential for inappropriate commenting. Finally, there were questions related to the lack of student and faculty familiarity with the blogging medium.

To address these concerns I assured the administrators that I would play an active role in creating the blogging platform and in teaching the first-year students and faculty how to navigate the medium. As detailed in this chapter, I took a number of steps to maintain student privacy and assure that there were no inappropriate comments posted on the blog.

Percy Ellis Sutton Search for Education Elevation and Knowledge (SEEK) at CUNY.

The participants were SEEK first-year students at a CUNY senior college. SEEK is a program that provides funding and support for students from families whose annual income is below $20,655\(^1\) and who have an admissions index score that is below the minimum index number for admission to the senior college. An admissions index score is based on an applicant’s high school courses and academic average and the combined verbal and mathematics SAT scores ("Undergraduate Catalog," n.d.). Combined, the SEEK programs at the 10 City University of New York (CUNY) senior colleges serve thousands of low-income students each year. SEEK

\(^1\) The annual income varies depending on the number of members in the household. ($20,655 is the income for households of 1 member).
was founded in 1965 and originally titled, The Pre-Baccalaureate Program at City College, with
an inaugural class that included 109 Black and Puerto Rican students (Maher, 1997).

Mina Shaughnessy was an early director and champion of the program and through her
diligent guidance SEEK would grow over the next two decades serving as an archetype for
programs to support low-income students in the 1970’s and 1980’s at CUNY and across the
country. Shaughnessy contended that the SEEK courses should be geared towards teaching
students what they would need to know to succeed in general college classes and beyond college
in the professional world (Maher, 1997; Shaughnessy, 1977). Shaughnessy emphasized that
teaching basic writing should be one of the key goals of the SEEK program, and her work with
and beyond SEEK is credited with helping to launch the Writing Across the Curriculum (WAC)
program at CUNY. Creating, navigating, and writing in a digital and social environment are
becoming an integral part of many college courses and a component of jobs after college. The
current study provided students with a safe space within which to learn and practice basic
blogging skills, and use expressive writing to make sense of their college transition.

Participants

As noted above, this research is practice based and was conducted as part of a first-year
seminar for students in the Percy Ellis Sutton Search for Education Elevation and Knowledge
(SEEK) educational opportunity program at a senior CUNY college. First-year students \(N = 96\)
were randomly assigned at the seminar level to blog \(n = 68\) or word process \(n = 30\) four times
during their first six months of college. Creating a larger group of bloggers allowed for an
examination of differences across the media as well as an exploration of internal differences
within the blog group, such as the characteristics of posts that received a high number of
comments. A chi-square analysis indicated no significant differences between the two groups in
terms of ethnicity, gender, parental education level or media use. All first-year students in the program of study were required to enroll in a summer program of no-credit college level math and humanities courses. The first of the four writing sessions began in the first-year seminar 2014 summer session as part of the required humanities course and continued through the fall semester, with the final assignment completed on December 2, 2014. In addition, students completed a brief demographics and media use survey (Appendix, A).

Materials

**Media Use and Demographics Survey.** All students completed a media use survey (Appendix A) in order to assess their levels of familiarity with the blogging medium and other social media. The survey asked participants if and how often they used media such as blogs, Twitter and Facebook. In addition, participants indicated their ethnicity, gender and parents’ education levels.

The majority of students (78%) reported using some type of social media program on a regular basis, and 76% of students reported having a Facebook account. Instagram was the next most used social media followed by WeChat and Snapchat. However, only 13% of the students reported having used blogs prior to the study. The low rate of blog use prior to the study made for an ideal research context, such that it was possible to analyze how students – most of whom were new to blogging – developed their writing within the network over the course of their first six months in college.

It is possible that the low number of students who reported a history of blogging may be in part due to students’ preference for engaging in social media on their mobile devices (72%), as compared to a smaller number of students who used social media on their computers (17%), and tablets (7%). As noted previously, blog posts are generally lengthier than posts written in other
social media, and the standard PC keyboard, as opposed to typing on a phone, is better suited for composing these lengthier posts. Furthermore, some social media platforms such as FaceBook, Instagram, WeChat, and Snapchat function more seamlessly on mobile devices, as compared to other platforms, like the WordPress blogging software used in this study, which are more cumbersome when used on mobile devices.

As for their parents’ or guardians’ highest level of education, 45% reported a high school degree or the equivalent, while 20% reported their parents had only completed 8th grade, and 7% reported that their parents had no formal schooling at all. In addition, 11% of students reported their parents had a bachelor’s and 8% reported their parents had an associate’s degree. Finally, 2% reported a parent with a masters and 1% – one student – reported a parent with a doctoral degree.

The participants were from diverse ethnic backgrounds; 54% reported being born in the United States and 46% reported being born elsewhere. Additionally, 60% of the students reported being fluent in another language, including Spanish, Mandarin, Vietnamese, Uzbek, Urdu, Punjabi, Georgian, Turkish and Tagalog. Nearly all of the students reported being 18-21 years of age, with only three students reporting being younger than 18. The greatest number of students, 55%, reported their ethnicity as Asian, 30% reported Hispanic, 10% reported Black, 3% reported White, and 2% reported Pacific Islander. Finally, there was a near even gender split between men (49) and women (47). These demographics were reported by students in response to the media survey that was completed after students had engaged in their fourth and final writing activity.

2 These three students were recruited using a slightly modified consent process as dictated by the CUNY Institutional Review Board (IRB).
The Writing Activity

Prompts. During four writing sessions, students in both groups responded to prompts about their transition to college that were adapted from Walton and Cohen (2011). The first prompt asked students to reflect on their first week at college, the second on their first month at college, and so on. At each writing session following a brief introduction the researcher provided a written copy of the prompt to each participant and then read the prompt aloud. As noted in the oral script, (Appendix B) the researcher asked participants to focus on sharing their ideas and not to worry about spelling and grammar. The first prompt was as follows:

Prompt 1. I invite you to tell a story about your first few weeks at X College. Research has shown that during the first semester students often worry about whether or not professors and other students at their college will accept them, and how eventually students become comfortable there and find a family of people with whom they are close and feel they belong.

Please describe how you have experienced your first few weeks at X College. Be sure to illustrate your post with examples from your own experiences in classes, seminars, lectures, study groups, and labs. What happened? How did you and others involved think and feel? How did that day turn out? You can take as much time as you like and try and write around 300-800 words. We hope this process will help you think about your transition experience. Once you have finished writing you will have time to read and comment on your classmates’ stories. In addition, to help them understand what to expect your writing may be provided, anonymously, to incoming students next year (Bold added).
The only difference between the prompts in the two conditions is the bolded sentence above, which informed the bloggers that they could read and comment on classmates’ stories, while the students assigned to word process neither saw nor commented on their classmates’ writing. The prompts were designed to create a meaningful writing and thinking activity that would encourage participants to tell a story about their transition to college experience. The prompts situated the participants as people with important experiential knowledge whose audience was future students like them. For the blogging group the writing activity was also a way to share their experiences with their current peers and interact in subsequent discussions related to the transition to college experience.

This writing activity was distinct from the majority of other content-based writing that first-year college students are generally assigned, as the prompts in the current study were designed to elicit expressive writing focused on students’ psychological and emotional development in relation to their transition to college experiences.

The media. Students were assigned to write using either a WordPress blog or Microsoft Word.

The blogging medium. I purchased the domain name, “thiscollegestory.com” and with the assistance of the New Media Lab hosted the site on a CUNY Graduate Center server. The blogging medium was generated as part of a WordPress Multisite installation where my research assistants and I acted as Super Admins and the participants were enrolled as Authors. To further user anonymity, I modified the Wordpress theme so that author emails were not visible to other authors, and have since created a “child” theme titled “pseudo” (Appendix C). This gave me
complete control of site settings, access and modifications. The blog, Figure 2.1, was set to use the WordPress 2013 Theme\(^3\) (Version 1.1).

![Blog Screenshot](image)

**My Transition to College Story Part IV**

Welcome to This College Story. To create your fourth and final post please click the plus (+) sign at the top of the page.

Then respond to the following prompt:

I invite you to tell a story about your first semester at college. Research has shown that during the first semester students often worry about whether or not professors and other students at their college will accept them, and how eventually students become comfortable there and find a family of people with whom they are close and feel they belong.

*Figure 2.1. Screenshot of the This College Story Blog Homepage.*

The researchers had total control over the blog, including the ability to accept or reject comments, modify settings, select themes and view all participants’ posts or even edit or delete

\(^3\) All blog software used during the intervention required minor upgrades to ensure site security. While some bug fixes were included in updates, these were transparent to students involved. Software functionality and user interface components remained constant through the study. Version numbers provided reflect the August 2015 versions of software used.
posts or pages if any abusive language was used (“WordPress Support,” n.d.). In Wordpress, Authors can “edit, publish and delete their posts, as well as upload files/images,” but they cannot “modify, add, delete, or publish pages” (“WordPress Support,” n.d.). WordPress automatically creates a URL for each Author on a blog. This url can be accessed by clicking on the Author’s name from anywhere it appears on the blog. The researcher set the Display Authors Widget plugin (Version 1.1.1) to display all of the authors’ hyperlinked pseudonyms in the main widget area as illustrated in Figure 2.2.

Figure 2.2. Screenshot of Display Authors Widget in Main Widget Area.

In addition, when an Author wrote a post or comment, these were displayed in the respective Recent Post or Recent Comments spaces that were designated to appear in the Secondary Widget Area as shown in Figure 2.3. Participants were able to and encouraged to read each other’s posts and comments. However, the blog was not publicly accessible. The network
was password protected using the More Privacy Options plugin (Version 4.0). In addition, students authored posts under pseudonyms. To further user anonymity, I modified the theme so that author emails were not visible to other authors. This modified theme, that I later turned into a child theme is included as Appendix C.

**Transition to College**

**Part IV**

Unsorted

This College Story. To create your fourth and final post please click the plus (+) top of the page.

and to the following prompt:

Tell a story about your first semester at college.

It has shown that during the first semester students often doubt whether or not professors and other students at their will accept them, and how eventually students become able there and find a family of people with whom they are feel they belong.

Write how you have experienced your first semester at College. Be sure to illustrate your writing with examples ur own experiences in classes, seminars, lectures, study

---

Figure 2.3. Screenshot of Recent Writing and Comments Widgets in Secondary Widget Area.

To ensure that the blogging activity was more interactive than the word-processing activity, undergraduate research assistants – who also self-selected pseudonyms – added one positive comment to all blog posts that had not received at least one peer comment after a week
of being posted. The undergraduate research assistants were instructed to select a comment from one of five comment types with each of these comment types including five comment exemplars. I created the comment exemplars based on comments that were written by a similar population of SEEK undergraduate students (Kreniske, 2014) and from a review of the blogging literature (Bolander, 2012; Lee, 2010; Mazur & Kozarian, 2010; Stonehouse, Keengwe, & Shabb, 2012). The five comment subtypes were enthusiastic, elaborative, questioning, encouraging, and intuitive. One enthusiastic comment was “nice post!”; an elaborative comment starter was “it’s interesting that...(followed by a detail from the selected post); one questioning exemplar was “I wonder how it might have been different if...”;} one encouraging comment exemplar was “I know you’ll make it”; and intuitive comments were based on the research assistant’s intuition or gut feeling about what kind of supportive comment to write.

The word-processing medium. The word processing group used the 2010 version of Microsoft Word. At the end of each writing session research assistants passed out USB drives and asked each participant to save their work. Once the work was saved the flash drives were collected and all of the writing was transferred to a password-protected computer. This writing procedure was repeated with the help of undergraduate research assistants beginning in July, during the first-year seminar summer bridge program, and concluding in December at the end of the fall semester.

Procedure

With the exception of the two writing media all procedures were identical for the word processing and the blogging group. After a series of collaborative meetings with SEEK faculty and staff it was agreed that students would be asked to write about their transition to college and four times over their first six months in college. The first two writing times were scheduled
during the summer bridge program, with the final two writings completed at the beginning and end of the fall semester.

**Day 1, July.** The researcher attended the SEEK Program Orientation where he introduced himself and the research study and conducted the informed consent process. The students then provided the researcher with their desired pseudonyms and preferred email and addresses. This pseudonym was also used as the name of their blog and their word processing documents.

**Day 2, July.** The students met the researcher in a computer lab on the campus of study. The researcher again introduced himself and the project and read the first prompt aloud. Students were then given a chance to ask questions. The researcher then distributed a printed copy of the prompt. Students were then given approximately 40 minutes of uninterrupted writing time. Then, in the word-processing classes the researcher distributed flash drives and asked students to save their work. In the blogging classes the researcher asked students to spend ten minutes reading and commenting on their classmates’ posts. The researcher offered a couple of comment examples – similar to the examples included above regarding the conventions of commenting. The researcher stated the only rule of commenting was to be respectful as one would be in a regular college class.

**Day 3, August.** The students met the researcher in a computer lab and repeated the writing procedure.

**Day 4, September.** The students met the researcher in a computer lab and repeated the writing procedure.

**Day 5, December.** The students met the researcher in a computer lab and repeated the writing procedure. At the end of the class students were asked to complete the Media Use Survey. The researcher then thanked the students for their participation.
Significance Analysis

As noted briefly in the literature review, a significance analysis was used to measure differences between the students’ writing in the blogging and word processing media. This analysis focused on the evaluative components of language (Labov & Waletzky, 1967/1997) and has been applied to study the development of narrative abilities (Peterson & McCabe, 1983) and to analyze narratives in social science research (Daiute & Griffin, 1993; Daiute, Buteau, & Rawlins, 2001; Kreniske, 2014; Lucic, 2013). For example, Lucic found narrators used more causal connectors, like because, since, and therefore, when addressing one type of audience and used more affect words, such as love, detest, excited, when addressing a different audience. Lucic used a significance analysis to show how narrators changed their writing when addressing different audiences. Such shifts in relation to audience become particularly important in digital media where the author can use specific language to appeal to a desired audience and receive feedback in the form of comments from interested readers.

Unlike computer coding systems, which are based on frequencies of individual words (Pennebaker, Mayne & Francis, 1997), a significance analysis requires manual coding as it is concerned with how words are used within the context of a phrase, sentence, or even the entire narrative (Daiute, 2010, 2014; Kreniske, 2104a; Lucic, 2013). For example, depending on context, the word like could be an expression of affect or it could be used to compare two things. Using a significance analysis enables researchers to identify and measure a narrator’s intended emphasis as well as the cognitive and emotional energy devoted to creating the narrative (Daiute, 2010, 2014; Kreniske, 2104; Lucic, 2013; Peterson & McCabe, 1983). While word classification was determined by sentence level and at times even narrative level contextual clues, I have
provided a partial list of common words and the categories in which they were usually coded in Appendix D.

As the name implies evaluative devices are used by narrators to indicate valuation such as like and dislike, or more and less. By focusing on evaluative words researchers can interpret where a narrator places emphasis, how they explain thinking and describe emotion, and how they use these elements differently depending on the audience. By focusing on evaluative components of language, a significance analysis highlights how narrators enact *significance* in their writing (Polkinghorne, 1998).

Evaluative words express thoughts, emotions, and emphasis and these categories of words act as linguistic markers of a narrator’s sense-making process. Evaluative word categories include psychological state expressions, intensifiers, qualifiers, causal connectors, and negations. Psychological state expressions can be cognitive, such as *thought, consider* and *realize*, or affective, such as *feel, happy*, and *frown*. These psychological states bring a narrative to life and help transform a writer’s thoughts into communicable images. Narrators express emphasis with intensifiers, such as *very*, and *really*, or with exclamation points, capital letters, or a repetition of words or letters. This project’s hypotheses are mainly concerned with comparing how writing about the transition to college in different media changes the way participants think and feel; therefore, the analysis will focus on comparing cognitive, affective and intensifying language.

**Coding, reliability and narrative analysis exemplars.** Over a six month period a research assistant and I fine tuned our coding system, established reliability, and used the qualitative software ATLAS.ti to manually code 176 student narratives. The researcher and an assistant established inter-rater reliability for the narrative coding schema on 20% of the
HOW INTERACTIVE WRITING MEDIA INFLUENCED

narratives. Cohen’s κ indicated there was a high level of agreement (Landis & Kock, 1977) between the coders, κ = .85, p < .0001.

To illustrate how narrators write differently in the two media I present a significance analysis of the cognitive words, affective words, and intensifying language in two excerpts, one blogged and one word-processed. The blogger, MonsieurD, used the affective word dislike, the cognitive word realize, and the intensifier floooooooooooooooow (out of 22 total words) writing:

But, I also have to realize that people have unreasonable reasons to dislike other individuals so I just go with the floooooooooooooooow.

In the word-processed excerpt, King Platano used the affective word feel and the cognitive word choice (out of 23 total words) writing:

Overall I feel good about my choice of coming to X College, one of the best schools in the city of New York.

In these examples, the writing may seem quite similar with both narrators using one cognitive and one emotional word. The main difference was that the blogger, MonsieurD, used numerous extra letters to add intensity to the word flow, whereas the word processor, King Platano, did not use any intensifiers. While all other evaluative devices were coded on the word level, intensifiers such as the word “floooooooooooooooow” in the above example required a slightly modified approach.

Narrators can add intensity in a variety of ways: with phrases, words, repeated letters, or by adding punctuation such as a string of capital letters or an exclamation point. The variability and diversity of intensifying techniques makes intensifiers a challenging linguistic category for narrative researchers. In attempt to capture this variability with my coding schema, intensifiers
were coded at the phrase, word, and in the case of repeated letters of punctuation at the character level. Furthermore, intensifiers often overlapped with other evaluative devices resulting in some words being coded as two types of evaluative devices, such as both an affect word and an intensifier. In contrast, all other evaluative devices were coded at the word level, with one code being applied to each word.

An example of a double coded word comes from a student who repeated letters in the word worry, writing “worrrrrrryyyy”. In this instance, the word worry was generally coded as an affect word. To capture the students use of intensity the repeated letters were coded as intensifying language in the following way. For letter or punctuation repetition the first three extra letters were coded as one intensifier each. For example, “worrrrrrryyyyy” and “worrrrry” would each be coded as three total intensifiers because there are three or more extra “r”s, while “worry” – with two extra “r”s would be coded as two intensifiers. To give another example, “flooooooooooooooooow” or “floooooooow” would both be three total coded intensifiers, while “floow” would be coded as two intensifiers (for the two extra “o”s). While this method may not be faultless, it offered one way for the coding schema to capture how narrators were adding extra intensity to their narratives.

In addition, other character insertions such as the use of quotation marks, parenthesis, and emoticons were coded as intensifiers. Figures of speech such as metaphors or similes were also coded as intensifiers as narrators use these figures of speech to add intensity. For example, the following simile was coded as one intensifier, “it hits you like a ton of bricks.” This simile emphasized that the noted information hit hard.

Going back to the blogged and word-processed excerpts, MonsieurD used numerous extra “o’s” that were coded as a total of three intensifiers, while King Platano did not use any
Although the difference may seem small, when aggregated over the entire narrative and for many participants, a significance analysis can highlight the ways participants enact thoughts, emotions, and intensity in their writing and how this differs over time and across media.

**Summary**

This study is rooted in practice and as such examines how the medium students were assigned to write in influenced the way they wrote, thought, and made sense of their college transition within the context of a SEEK first-year seminar course. In brief, this chapter presented the research design, including the context of the study, the participants, the questionnaires, the writing media, the procedure and an explanation of the qualitative coding schema. In Chapters 3, 4, and 5, we turn to the results of a mixed methods analysis of participants’ narratives.
Chapter III

Introducing the Results Section

As noted in Chapter 1, the importance of the narrator-audience relationship is well documented (Bakhtin, 1986; Bazerman, 2004; Ede, 1989; Flower, 1979; McLane, 1992; Ong, 1975). In the past decade researchers have been inspired to revisit questions of narrator-audience relations in light of the proliferation of digital and explicitly interactive writing media (Baker & Moore, 2008; Fishman, Lunsford, McGregor, & Otuteye, 2005; Lammers, Magnifico, & Curwood, 2014; Magnifico, 2010; Manago, Tamara, & Greenfield, 2012). While there are a multitude of interactive media, each with distinct capabilities, I argue that the ability for narrators to select their audiences, and for these audiences to comment on narrators’ writing are the two main reasons for the recent increase in importance of audience and subsequent rise in related research.

I designed the current study, within the context of a SEEK first-year seminar, in order to investigate how these interactive features influenced the way students wrote and subsequently made sense of their college experiences. A narrative analysis that focused on narrators’ evaluative language provided the basis for determining how the interactivity of the writing media influenced narrators’ writing, thinking and sense-making. Similar analyses have been applied to study the development of narrative abilities (Peterson & McCabe, 1983), and to analyze narratives in social science research (Daiute, 2010; 2014; Daiute & Griffin, 1993; Daiute, Buteau, & Rawlins, 2001; Kreniske, 2014a; Lucic, 2013). The social science researchers used an analysis of evaluative devices to gather information about how participants used narratives as a sense-making tool. In the current study, an analysis of evaluative language allowed for a comparison of how two writing media, with distinct capabilities for audience interaction, had
different influences on the way students wrote, thought, and made sense of their college transition.

This project proposed to answer three broad questions. While each research question was approached from a similar theoretical perspective and utilized the data from the same narrative analysis, the questions required distinct statistical and analytical procedures and are therefore presented separately in the following three results chapters. These questions were all focused on the ways that students writing did or did not change from the beginning to the end of the students’ first six months in school. Therefore, for each question the analysis compared how students wrote during their first writing session at Time 1 and their final session at Time 4. At each time point students were asked to write about how their transition to college experience, with students reflecting on their first week at Time 1, their first month at Time 2 and so on (For the complete prompt see Research Design p. 31).

The first question concerned the differences between students writing in the two media. Specifically, did college students’ writing in the two media (blog and word-processor) differ and did these differences change from the beginning to the end of their first six months in college?

The second question concerned how the bloggers interacted with their audience. Why did some blog posts receive more comments than others, and did these commenting patterns change from the beginning to the end of the first six months in college?

The third question explored how the linguistic trends regarding changes in student writing over the first six months in college and detailed in questions 1 and 2 played out in students’ individual narratives.
The implications of each of these questions are then explored in terms of understanding how the interactive potential of the media influenced students’ psychological development over the first six months in college.

**Research Question One: Did Students’ Writing in the Two Media (blog and word-processor) Differ and Did These Differences Change Over Time?**

Student: are you even going to read ours?
Me: Why do you ask?
Student: Well, the blogs are official because it’s a website but nobody sees Word (Personal communication from the final day of writing, December 2, 2014).

As detailed in previous chapters, research and theory on narrator-audience interactions, and the recent proliferation of interactive writing media, sparked my interest in the ways that media with differing potentials for interactivity would influence narrators’ writing. In this chapter, I focus on the first research question, define the key linguistic components of the analysis, introduce hierarchical linear modeling (HLM), detail the equations and results for each variable and finally present implications of the analyses.

The first research question was twofold: did students’ writing in the two media (blog and word-processor) differ and did these differences change over time? To explore this question I compared four characteristics of the blogged and word-processed narratives and then consider the implications of these changes for understanding students’ psychological development over the semester.

**Linguistic Characteristics**

**Why fluency?** Fluency is synonymous with narrative length or word count. The hypothesis was bidirectional because theoretical arguments could be made that either media might encourage longer narratives. The interactivity of the blog might inspire writers to use more
words in an attempt to communicate their stories to the interactive audience. In contrast, there was also the possibility that the potential for interactivity could distract students from the initial writing task. Maybe students would be excited by the opportunity to see what others were doing and therefore they might write shorter narratives as they rushed to read and comment on their classmates’ posts.

**Why fluency?** Fluency is synonymous with narrative length or word count. I wondered if perhaps one medium would encourage students to write longer narratives. There were theoretical arguments to be made that either media might encourage more writing. The interactivity of the blog might inspire writers to use more words in an attempt to communicate their stories to the interactive audience. In contrast, there was also the possibility that the potential for interactivity could distract students from the initial writing prompt. Maybe they would be excited by the opportunity to see what others were doing and therefore they might write shorter narratives as they rushed to read and comment on their classmates’ posts. Or framed in another way, imagining readers takes effort and time. Given that effort and time are finite resources any added effort and time devoted to anticipating an audience interaction may have detracted from the effort and time that students had for actually generating writing.

**Why cognitive words?** For explanatory purposes, I have I bolded the cognitive words in the following excerpt of the blogger Antonio’s final post,

Personally, when I came to this college, I was planning to major in Finance; however, as the time pass by, I saw the society of the college, surrounded by all business majors. I change my mind not due to the competition, but due to the fact that what I love and enjoy. So I recommend to think again about what you trying to major in. Take classes to see whether you like the subject or not. once you find your major, stick with it and push
yourself to do better and keep the GPA high as possible. Take classes to see whether you like the subject or not. Once you find your major, stick with it and push yourself to do better and keep the GPA high as possible.

As in this example when Antonio “recommends” the reader “think”, narrators use cognitive words to both enact and draw attention to their thinking processes. These thinking words are often used to relate moments when students realized, knew, or changed their perspective. As explored in Chapter 1, writing is a powerful tool that requires a narrator to organize their thoughts and emotions in relation to a specific topic and audience. It is through this process of organizing thoughts and emotions that a narrator makes sense of a given challenge in relation to their audience. In fact, we might even pose the question, did these thoughts actually exist before they were manifested in writing (Merleau-Ponty, 1945/2014)?

Cognitive words are critical for sense-making because they show where a narrator is enacting thoughts, or where they are doing the thinking. Along similar lines, did a specific feeling exist before it was communicated as an affect word in writing?

In the current context, the challenge being written about was the transition to college, and the bloggers, like Antonio, were thinking about their stories, and how their stories might be understood and responded to by the interactive audience. In contrast, the students who word-processed could only imagine their audience. I predicted that this activity of writing and anticipating their audiences’ responses would spur bloggers to use a greater rate of cognitive words in their narratives than their counterparts who word-processed.

**Why affect words?** As demonstrated in this excerpt where I have bolded the affect words, the student Lofticries who word-processed, used affective words to enact feelings.
I watched my friend get really sad and he started to cry. Me being the friend that I am I consulted him and told him I’m sorry for what happened. Since I valued our friendship so much I told him that we could work this out and that’s what we did. This was the lowest point of my semester and I’m happy that I’ve learned from this experience.

Affect words like cry enact sadness, and words like laugh enact joy. In this context the word “valued” was coded as an affective expression because Lofticries was using this word to express the emotion that he cared about his friendship. As with fluency, there seemed to be equally strong reasons for students in either the blog or the word processing group to use greater rates of affect. I thought the bloggers might use greater rates of affect as they worked to convey their emotions regarding their college transition to an interactive peer audience. Conversely, I considered the possibility that the lack of audience interaction in the word processing media could influence the writers share feelings and thoughts more intimately as they did not need to consider how their readers would respond. With only an imagined audience, the word processing media might function more like a diary and this could lead to the narrators using greater rates of emotions than the bloggers.

**Why intensifiers?** Intensifiers are evaluative components of language that narrators use to add emphasis. In the following excerpt, the blogger Purplelover23 used a variety of intensifying techniques that I have bolded for further explanatory purposes:

Now, that that’s out of the way, **FINALS** are coming and I’m concern but I’m happy that **I HAVE MY FRIENDS**.

**Honestly,** after this hectic semester I **can’t wait** to **HAVE MY BREAK!!!!!!!!!!!!!!!!!**

I’m glad that is over, but I’m glad that we have made **such** a strong bond in **such** a little time, I know that it might be the end of the semester but it’s not the end of our friendship.
As noted in the research design, there are numerous ways to add intensity. In this example Purplelover23 used capital letters to emphasize words like “FINALS” and her friends. She also added emphasis by using expressions like “Honestly” and “can’t wait”. Finally, Purplelover23 used numerous extra exclamation points to add intensity to her anticipation of a break. I predicted that in an attempt to engage their audience the bloggers like Purplelover23, as compared to the students who word-processed, would use greater rates of intensifiers.

**Review of narrative coding approach.** The narrative coding process was explained in detail in the Research Design section of this dissertation. In brief a significance analysis focuses on evaluative language in context (Daiute & Griffin, 1993; Daiute, Buteau, & Rawlins, 2001; Labov & Waletzky, 1967/1997; Peterson & McCabe, 1983; Kreniske, 2014; Lucic, 2013).

Examples of words that were coded as cognitive were *think, realize, know*. Examples of words coded as affective words were *feel, happy, frown*, and examples of intensifying language were *really, and very*. In addition, words punctuated with exclamation points and capital letters, and any repetition of words or letters were coded as intensifiers. To account for variation in narrative length a rate of use was then calculated for each linguistic code by dividing the number of coded words by the total number of words in a specific narrative and then multiplying by 100. In the following example, also provided in the Research Design, King Platano, used the affective word *feel* and the cognitive word *choice* (out of 23 total words) writing:

> Overall I feel good about my choice of coming to X College, one of the best schools in the city of New York.

To calculate the above rate of affect words I divided the number of affect words, 1, by the total number of words, 23, and then multiplied by 100, which amounted to an affect rate of 4.35 for this excerpt. When aggregated over the entire narrative and for many participants, a significance
analysis can highlight the ways participants enact thoughts, emotions, and intensity in their writing and how this differs over time and across media. To determine if the rates were between the media were statistically significant and if these rates changed over time I used a series of hierarchical linear models.

**Introducing Hierarchical Linear Modeling**

Hierarchical linear modeling (HLM) was used to statistically analyze how students wrote differently on a blog as compared to a word-processor and how this changed over time. Of particular interest were fluency – defined as total words in a narrative – and linguistic features such as cognitive, affective and intensifying word use (each of which were level-1 outcome variables for separate HLM equations) and how these features changed in students’ writing over time (level-1 predictor variable) and in the two different writing media (level-2 predictor variable). HLM\(^4\) is appropriate for measuring change over time between groups and individuals and has been of use to researchers in a wide range of disciplines from educational contexts to studies on mental and physical health (Connelly, Keefe, Affleck, Lumley, Anderson & Waters, 2007; Garson, 2013; Gibbons et al., 1993; West, 2009; Woltman, Feldstain, MacKay & Rocchi, 2012; Raudenbush, 1993; Raudenbush & Bryk, 2002). Researchers have suggested that HLM is well suited for studies making comparisons between media (McFarland & Ployhart, 2015).

**HLM equations and results for research question one.** The HLM analysis indicated if the intercepts and slopes for a particular variable were different. In the current study the intercept indicated the level of fluency or the rate of use for a particular linguistic device (intensifying or cognitive) at a specific time point (Time 1 or Time 4) and for each writing media (blogged or

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\(^4\) All analyses were conducted using HLM 7 (Raudenbush, Bryk, Cheong, Congdon, & du Toit, 2011).
how word-processed). The research questions were concerned with the change in students writing from the beginning to the end of the study and therefore the analysis focused on students first, Time 1, and last, Time 4, writing sessions. The slope indicated the rate of change between the two time points for the selected level 1 outcome variable (fluency, cognitive, affective, and intensifying). For readers interested in interpreting the details of the HLM models, Time 1 was coded as -1, and Time 4 was coded as 0. While in terms of media, word processing was coded as 0 and blogging was coded as 1. The tables in the text below present the intercepts for Time 4. The Time 1 intercepts are included in the tables in Appendix E. I have included only the most germane equations and values from my HLM analyses in the results section below (Singer, 1996). For additional equations and output please see Appendix E.

Before delving into the HLM models, Table 3.1 presents the means and standard deviations Fluency, Cognitive word rates, Intensifying word rates, and affective word rates for media and Time.

### Table 3.1

*Descriptive Statistics by Media*

<table>
<thead>
<tr>
<th>Media</th>
<th>Time</th>
<th>n</th>
<th>Fluency M (SD)</th>
<th>Cognitive rate M (SD)</th>
<th>Affective rate M (SD)</th>
<th>Intensifying rate M (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Word Processing</td>
<td>1</td>
<td>32</td>
<td>544.59 (199.54)</td>
<td>2.75 (1.34)</td>
<td>4.82 (1.49)</td>
<td>7.21 (2.95)</td>
</tr>
<tr>
<td>Word Processing</td>
<td>4</td>
<td>32</td>
<td>388.03 (108.43)</td>
<td>2.71 (1.29)</td>
<td>5.18 (1.72)</td>
<td>5.98 (2.48)</td>
</tr>
<tr>
<td>Blogging</td>
<td>1</td>
<td>56</td>
<td>374.63 (107.84)</td>
<td>2.84 (1.05)</td>
<td>5.40 (1.86)</td>
<td>7.66 (4.19)</td>
</tr>
<tr>
<td>Blogging</td>
<td>4</td>
<td>56</td>
<td>338.43 (85.44)</td>
<td>3.42 (1.30)</td>
<td>5.02 (1.69)</td>
<td>9.41 (7.46)</td>
</tr>
</tbody>
</table>
Note. To account for variation in narrative length a usage rate was calculated for each linguistic code by dividing the number of coded words by the total number of words in a specific narrative and then multiplying by 100.

To determine if the observable differences in this table were significant I conducted a series of HLM models.

Fluency. First, I explored the equation and results for fluency and how fluency differed for students writing with the blogging as compared to the word-processing media and over time. Equation 1 is presented below and results for intercepts and slopes are displayed in Table 3.2.

Level-1 Model

\[ \text{FLUENCY}_{ij} = \beta_{0j} + \beta_{1j}(\text{TIME}_{ij}) + r_{ij} \]

\[ \text{var} (r_{ij}) = \sigma^2 \]

Level-2 Model

\[ \beta_{0j} = \gamma_{00} + \gamma_{01}(\text{MEDIA}_j) + u_{0j} \]

\[ \text{var} (u_{0j}) = \tau_{00} \]

\[ \beta_{1j} = \gamma_{10} + \gamma_{11}(\text{MEDIA}_j) + u_{1j} \]

\[ \text{var} (u_{1j}) = \tau_{11} \]

Mixed Model

\[ \text{FLUENCY}_{ij} = \gamma_{00} + \gamma_{01}(\text{MEDIA}_j) + \gamma_{10}(\text{TIME}_j) + \gamma_{11}(\text{MEDIA}_j)(\text{TIME}_{ij}) + u_{0j} \]

\[ + u_{1j}(\text{TIME}_{ij}) + r_{ij} \]

Table 3.2

Fluency Final Estimation of Fixed Effects

<table>
<thead>
<tr>
<th>Fixed Effect</th>
<th>Coefficient</th>
<th>Standard error</th>
<th>t-ratio</th>
<th>Approx. d.f.</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTRCPT, ( \gamma_{00} )</td>
<td>389.09</td>
<td>16.65</td>
<td>23.36</td>
<td>91</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>MEDIA, ( \gamma_{01} )</td>
<td>-52.70</td>
<td>20.86</td>
<td>-2.53</td>
<td>91</td>
<td>0.013</td>
</tr>
<tr>
<td>TIME, ( \gamma_{10} )</td>
<td>-153.78</td>
<td>25.45</td>
<td>-6.04</td>
<td>91</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>TIME x MEDIA, ( \gamma_{11} )</td>
<td>114.32</td>
<td>31.98</td>
<td>3.56</td>
<td>91</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>

At Time 4 the blogging and word-processing groups’ mean narrative lengths differed significantly \( (\gamma_{01} = -52.70, t = -2.53, p = 0.013) \). As indicated in Table 3.2 the mean blogged narrative at Time 4 was 336.39 and the mean word-processed narrative was 389.09 words. A
slightly different HLM equation was used to generate Time 1 intercepts. The equation and tables are not included in the body of the text but are included in Appendix E. At Time 1 the blogging and word-processing groups’ intercepts differed significantly ($\gamma_{01} = -167.025, t = -5.132, p < .001$) indicating that at Time 1 the type of writing media (blog or word-processor) influenced the length of student narratives and that the students in the blogging group wrote shorter narratives than students in the word-processing group. At Time 1 the mean blogged narrative was 375.84 words, while the mean word-processed narrative was 542.87 words. This indicated that the writing media did influence the length of student narratives at both Time 1 and Time 4, with the students in the blogging group writing shorter narratives at both times.

*Figure 3.1. Fluency at Time 1 and 4 for blogged and word-processed narratives.*
In addition, there was a significant effect of media on the slope of fluency, with the blogging group’s mean fluency changing less than the word-processing group’s mean fluency ($\gamma_1 = 114.32, t = 3.56, p < 0.001$). As displayed in Figure 3.1, the slope of the narrative length for the blogging group was more gradual. In contrast, and as shown in Figure 3.1, the word processing group’s slope showed a more dramatic decline in the mean length of narratives from Time 1 to Time 4.

In addition, examining the final estimation of variance components in Table 3.3 determined if there was any variation left to explain in narrative length after controlling for time. The null hypothesis for the intercepts could not be rejected because $\chi^2 = 117.72, p = 0.005$. This indicated significant variation remained to be explained in the intercepts. For the slopes too the null hypothesis was rejected because $\chi^2 = 131.41, p < 0.001$, which showed significant variation remained to be explained in the slopes; not all of the variation in the narrative length could be explained by time.

Table 3.3

<table>
<thead>
<tr>
<th>Random Effect</th>
<th>Standard Deviation</th>
<th>Variance Component</th>
<th>d.f.</th>
<th>$\chi^2$</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTRCPT1, $u_0$</td>
<td>50.32</td>
<td>2532.11</td>
<td>81</td>
<td>117.72</td>
<td>0.005</td>
</tr>
<tr>
<td>TIME slope, $u_1$</td>
<td>88.23</td>
<td>7785.14</td>
<td>81</td>
<td>131.41</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>level-1, $r$</td>
<td>79.86</td>
<td>6378.18</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Var($u_{0j}$) = $\tau_{00}$ was 50.32, which was the unaccounted for variance in the intercepts ($B_{0j}$). Var($u_{1j}$) = $\tau_{00} = (88.23)$ was the unaccounted for variance in the slopes ($B_{1j}$). Var($r_{1j}$) = $\sigma^2 = 6378.18$ was the variation of observations around the predicted values of the model. While time explained some of the variation in the length of narratives, it did not explain all of the variation. The complete HLM output is available in Appendix E.
Cognitive words. I then explored the equation and results for the rate of cognitive words and how they differed for students writing with the blogging as compared to the word-processing media and over time. Equation 2 is presented below and results for intercepts and slopes are displayed in Table 3.4.

Level-1 Model
\[ \text{COGNITIVE}_{ij} = \beta_{0j} + \beta_{1j} \times (\text{TIME}_{ij}) + r_{ij} \]
\[ \text{var} (r_{ij}) = \sigma^2 \]

Level-2 Model
\[ \beta_{0j} = \gamma_{00} + \gamma_{01} \times (\text{MEDIA}_j) + u_{0j} \]
\[ \text{var} (u_{0j}) = \tau_{00} \]
\[ \beta_{1j} = \gamma_{10} + \gamma_{11} \times (\text{MEDIA}_j) + u_{1j} \]
\[ \text{var} (u_{1j}) = \tau_{11} \]

Mixed Model
\[ \text{COGNITIVE}_{ij} = \gamma_{00} + \gamma_{01} \times \text{MEDIA}_j + \gamma_{10} \times \text{TIME}_{ij} + \gamma_{11} \times \text{MEDIA}_j \times \text{TIME}_{ij} + u_{0j} + u_{1j} \times \text{TIME}_{ij} + r_{ij} \]

Table 3.4

<table>
<thead>
<tr>
<th>Fixed Effect</th>
<th>Coefficient</th>
<th>Standard error</th>
<th>t-ratio</th>
<th>Approx. d.f.</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTRCPT, ( \gamma_{00} )</td>
<td>2.7</td>
<td>0.23</td>
<td>11.79</td>
<td>91</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>MEDIA, ( \gamma_{01} )</td>
<td>0.72</td>
<td>0.29</td>
<td>2.50</td>
<td>91</td>
<td>0.014</td>
</tr>
<tr>
<td>TIME, ( \gamma_{10} )</td>
<td>-0.05</td>
<td>0.32</td>
<td>-0.15</td>
<td>91</td>
<td>0.880</td>
</tr>
<tr>
<td>TIME x MEDIA, ( \gamma_{11} )</td>
<td>0.73</td>
<td>0.40</td>
<td>1.81</td>
<td>91</td>
<td>0.074</td>
</tr>
</tbody>
</table>

At Time 4 the blogging and word-processing groups’ rates of cognitive words did differ significantly (\( \gamma_{01} = 0.72, t = 2.50, p = 0.014 \)). This indicated that the writing media did influence the rate at which students used cognitive words at Time 4, with the bloggers using cognitive words at a mean rate of 3.4 and the word processing group using cognitive words at a mean rate of 2.7: blogging was positively related to a greater rate of cognitive word use as displayed in Figure 3.2.
In order to address the issue of how the intercepts of cognitive word rates differed between the word-processed and blogged narratives at Time 1, a slightly different HLM equation was used to generate Time 1 intercepts. These equation and tables are not included in the body of the text but are included in Appendix E. This additional analysis showed that at Time 1 the blogging and word-processing groups’ intercepts did not differ significantly ($\gamma_{01} = -0.01, t = -0.04$) indicating that at Time 1 the type of writing media (blog or word-processor) did not influence the rate at which students used cognitive words. Although students in the blogging
media increased the use of cognitive words at a greater rate over time as compared to the word processing group, the difference in slopes was not significant.

I examined the final estimation of variance components in Table 3.5 to determine if there was any variation left to explain in cognitive word use after controlling for time. The null hypothesis for the intercepts was not rejected because $\chi^2 = 103.56, p = .063$. This indicated there was not significant variation that remained to be explained in the intercepts. For the slopes too the null hypothesis could not be rejected as $\chi^2 = 97.56, p = .131$, which showed there was not significant variation that remained to be explained in the slopes. In other words, the media appears to explain the variation in cognitive word rates.

Table 3.5

<table>
<thead>
<tr>
<th>Random Effect</th>
<th>Standard Deviation</th>
<th>Variance Component</th>
<th>d.f.</th>
<th>$\chi^2$</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTRCPT1, $u_0$</td>
<td>0.56</td>
<td>0.31</td>
<td>83</td>
<td>103.56</td>
<td>0.063</td>
</tr>
<tr>
<td>TIME slope, $u_1$</td>
<td>0.77</td>
<td>0.60</td>
<td>83</td>
<td>97.56</td>
<td>0.131</td>
</tr>
<tr>
<td>level-1, $r$</td>
<td>1.17</td>
<td>1.37</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

$\text{Var}(u_{0j}) = \tau_{00} = 50.32$, which was the unaccounted for variance in the intercepts ($B_{0j}$). $\text{Var}(u_{1j}) = \tau_{00} = (.77)$ was the unaccounted for variance in the slopes ($B_{1j}$). $\text{Var}(r_{1j}) = \sigma^2 = 1.37$ was the variation of observations around the predicted values of the model. Time appeared to explain the variation in the use of cognitive words. The complete HLM output is available in Appendix E.

**Affective words.** While differences in the rates of affective word use was predicted, there were no significant differences between the affective use slopes and intercepts at Time 1 or Time 4 for students using the different writing media (Appendix E).
**Intensifying language.** Finally, I generated the equation and explored results for the rate of intensifying language (INTENSE) for students writing with the blogging as compared to the word-processing media over time. Equation 3 is presented below and results for intercepts and slopes are displayed in Table 3.6.

\[
\text{Level-1 Model} \\
\text{INTENSE}_{ij} = \beta_{0j} + \beta_{1j} \times (\text{TIME}_{ij}) + r_{ij} \\
\text{var}(r_{ij}) = \sigma^2
\]

\[
\text{Level-2 Model} \\
\beta_{0j} = \gamma_{00} + \gamma_{01} \times (\text{MEDIA}_j) + u_{0j} \\
\text{var}(u_{0j}) = \tau_{00}
\]

\[
\beta_{1j} = \gamma_{10} + \gamma_{11} \times (\text{MEDIA}_j) + u_{1j} \\
\text{var}(u_{1j}) = \tau_{11}
\]

\[
\text{Mixed Model} \\
\text{INTENSE}_{ij} = \gamma_{00} + \gamma_{01} \times \text{MEDIA}_j + \gamma_{10} \times \text{TIME}_{ij} + \gamma_{11} \times \text{MEDIA}_j \times \text{TIME}_{ij} + u_{0j} + u_{1j} \times \text{TIME}_{ij} + r_{ij}
\]

Table 3.6
**Intensifier Final Estimation of Fixed Effects**

<table>
<thead>
<tr>
<th>Fixed Effect</th>
<th>Coefficient</th>
<th>Standard error</th>
<th>t-ratio</th>
<th>Approx. d.f.</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTRCPT, (\gamma_{00})</td>
<td>5.94</td>
<td>1.09</td>
<td>5.47</td>
<td>91</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>MEDIA, (\gamma_{01})</td>
<td>3.39</td>
<td>1.36</td>
<td>2.49</td>
<td>91</td>
<td>0.015</td>
</tr>
<tr>
<td>TIME, (\gamma_{10})</td>
<td>-1.27</td>
<td>1.15</td>
<td>-1.10</td>
<td>91</td>
<td>0.273</td>
</tr>
<tr>
<td>TIME xMEDIA, (\gamma_{11})</td>
<td>3.21</td>
<td>1.44</td>
<td>2.23</td>
<td>91</td>
<td>0.028</td>
</tr>
</tbody>
</table>

At Time 4 the blogging and word-processing groups’ rates of intensifiers did differ significantly (\(\gamma_{01} = 3.39, t = 2.49, p = 0.015\)). This indicated that writing media did influence the rate that students used intensifying language at Time 4 with the blogging group using intensifiers at a mean rate of 9.33 and the word processing group using intensifiers at a rate of 5.94; the blogging medium was positively related to a higher rate of intensifier use. A slightly different
HLM equation was used to generate Time 1 intercepts. The equation and tables are not included in the body of the text but are included in Appendix E. At Time 1 the blogging and word-processing groups’ intercepts did not differ significantly ($\gamma_{01} = .18, t = .21$) indicating that at Time 1 the type of writing media (blog or word-processor) did not influence the rate at which students used intensifying language.

In addition, there was a significant effect of media on the slope of intensifier use with the blogging group’s rate of intensifier use increasing over time as compared to the word-processing group whose rate of intensifier use decreased over time ($\gamma_{11} = 3.213875, t = 2.228, p = 0.028$). As displayed in Figure 3.3 media influenced the rate of intensifier use over time where the students who blogged increased their use of intensifiers from Time 1 to Time 4 and the students who word-processed decreased their use of intensifiers.

![Figure 3.3](image)

*Figure 3.3. Rate of intensifier use at Time 1 and 4 for blogged and word-processed narratives.*
Examining the final estimation of variance components in Table 3.7 determined if there was any variation left to explain in intensifier use after controlling for time. The null hypothesis for the intercepts could not be rejected because \( \chi^2 = 276.39, p < 0.001 \). This indicated significant variation remained to be explained in the intercepts. For the slopes too the null hypothesis was rejected because \( \chi^2 = 152.95, p = <0.001 \), which showed significant variation remained to be explained in the slopes; not all of the variation in the use of intensifiers could be explained by time.

Table 3.7

<table>
<thead>
<tr>
<th>Intensifier Final Estimation of Variance Components</th>
</tr>
</thead>
<tbody>
<tr>
<td>Random Effect</td>
</tr>
<tr>
<td>---------------</td>
</tr>
<tr>
<td>INTRCPT1, ( u_0 )</td>
</tr>
<tr>
<td>TIME slope, ( u_1 )</td>
</tr>
<tr>
<td>level-1, ( r )</td>
</tr>
</tbody>
</table>

\( \text{Var}(u_{0j}) = \tau_{00} = 5.10 \) which was the unaccounted for variance in the intercepts \((B_{0j})\). \( \text{Var}(u_{1j}) = \tau_{00} = (4.33) \) was the unaccounted for variance in the slopes \((B_{1j})\). \( \text{Var}(r_{1j}) = \sigma^2 = 11.72 \) was the variation of observations around the predicted values of the model. While time explained some of the variation in the use of intensifiers, it did not explain all of the variation. The complete HLM output is available in Appendix E.

**Interpretations of Results for Research Question One**

These results show the influence of writing media and specifically feedback on students writing over time and have implications for researchers and practitioners interested in studying narratives and designing curricula. The current work presents four distinct linguistic characteristics that changed over time and depending on the writing media.
Fluency. The bloggers wrote less at both Time 1 and Time 4 than students in the word-processing group. One explanation for this difference is that students may be accustomed to reading and also writing relatively short narratives in digital contexts. For the great majority of students (87%) blogging was a new activity. However, as noted in the research design 78% of students reported having used some type of social media (including Instagram, WeChat and Snapchat among others), with 76% reporting they used Facebook. Instagram is primarily a platform for sharing images while WeChat is primarily a messaging application and Snapchat is used for sending short and ephemeral messages and images. Facebook is likely the platform most similar to blogging and yet the average Facebook post is only 122 words (Cvijikj & Michahelles, 2011). The student bloggers may have been calling on their prior knowledge of digital texts and purposefully composing shorter narratives compared to their counterparts who wrote with a word-processor. Similarly, students who used the word-processor may have called upon their prior knowledge and experiences with word-processors that likely involved more extensive and often academic writing.

Another possible explanation for the difference in fluency in the two media could be that the students writing with the word-processor felt less inhibited than the bloggers. Perhaps, the peer audience and potential peer feedback served to constrain the bloggers writing. In contrast, the students who word-processed may have felt more comfortable sharing their ideas about the transition to college with an imagined peer audience that offered no potential for feedback.

It is also possible that the media had some other effect on writing that my analysis could not capture. For example, while the bloggers wrote shorter narratives they may have used richer vocabulary, or more words per sentence, or used more condensed expressions. To determine if
there were differences in these and other types of narrative expression future analyses and studies are needed.

While the word-processing group consistently wrote longer narratives, the bloggers narrative mean lengths declined less dramatically from Time 1 (375.84) to Time 4 (336.39) than the word-processing group’s narrative mean lengths at Time 1 (542.87) and Time 4 (389.09). This may indicate that the word-processing group’s motivation to write decreased more rapidly over time. In contrast, the bloggers more gradual decline in fluency may indicate that the interactive audience motivated them to write and share their emotions and ideas about the transition to college over time. This explanation is bolstered by the results from the analyses of cognitive and intensifying language.

**Cognitive words.** At Time 1 cognitive word use did not differ between the blogged and word-processed narratives. However, by Time 4 the bloggers used a significantly greater rate of cognitive words. The bloggers were literally investing more thought into their writing than the word-processing group. The prompt was designed to encourage students to use writing as a tool to make-sense of their transition to college. In this context sense-making involved figuring out how to think about, reflect on, and write about their first semester in college experience. Evaluative devices, such as cognitive words are one indicator of sense-making. The greater rates of cognitive words used by the bloggers suggests that the interactive medium encouraged them to engage in more sense-making than their peers who word-processed.

**Affective words.** Contrary to my initial hypothesis the rate of affect words did not differ between the two writing media. I hypothesized that affect would differ – though I was unsure of the direction of this difference. I thought the bloggers might be inclined to use more affect as they shared their emotions and experiences with the potentially supportive digital community.
On the other hand, I also considered that the word-processing group might be more willing to share their emotions because the writing would not receive immediate peer-feedback and therefore would be more similar to a diary type entry where students might “pour out” emotions. Although affect did not differ, the rate of intensifying language did. Previous work, and the analysis presented in research question three, indicate that intensifying language often co-occur with affect and in many cases may be used to modify and amplify affect words (Daiute, & Griffin, 1993).

**Intensifying language.** While the use of intensifying language for the bloggers and the students who word-processed did not differ at Time 1, by Time 4 the bloggers used significantly more intensifiers. In addition, the two groups slopes differed significantly with the bloggers using more intensifiers at Time 4 than they used at Time 1 and the word-processing group using fewer intensifiers at Time 4 than they used at Time 1. This indicated that the blog context – where immediate peer feedback was possible – influenced students to increase their rate of intensifier use. There are two possible reasons that are not mutually exclusive for this increase. One reason is that students were more motivated and engaged when writing in the blogging medium and they communicated this motivation and engagement by using frequent intensifying language and punctuation. Additionally, bloggers may have used more intensifiers in an attempt to attract peer readers and peer feedback.

**Implications and Conclusions for Research Question One**

The importance of audience has been well documented by literary scholars (Bakhtin, 1986; Bazerman, 2004; Ede, 1989; Flower, 1979; McLane, 1992; Ong, 1975). Recent researchers have shown that narrators write differently when addressing different audiences. (Daiute, 2010; Daiute, Todorova & Kovacs-Cerovic, 2015; Lucic, 2013). The current work presents one of the
first experimental studies to explore the ways that writing media, such as the blog, with potential for narrator-audience interaction influenced students’ writing differently than writing media, such as the word-processor, which offered no possibility of narrator-audience interaction. The current findings show that even when narrators address the same audience, the potential for interactivity in a given writing medium influences narrators’ writing.

These findings are important for researchers and practitioners alike and indicate that over time narrators write differently when addressing imagined as opposed to interactive audiences. Both groups were instructed to address their writing to current and future students transitioning to college. The main difference was that on the blog there was potential for narrator-audience interaction whereas with the word-processor the interaction was limited to computer-generated spelling and grammatical suggestions. This fundamental difference in level of potential interactivity influenced the students in the two groups to develop linguistically different writing over the semester. While the bloggers used fewer words at Time 1 and Time 4, by Time 4 they used greater rates of cognitive and intensifying language than the students who word-processed.

While initially there was little difference in the cognitive and intensifying language used in the blogging and word-processing media, over time the potential for audience interaction influenced the way narrators wrote and consequently thought about their transition to college experience. Fluency for students in the word-processing medium began at a higher rate but also declined more rapidly than the bloggers’ fluency. Additionally, the bloggers increased their use of cognitive and intensifying language over time while students who word-processed did not. These trends indicate that the highly interactive writing media encouraged students to invest greater rates of cognitive energy and intensity into their writing and to increase their use of cognitive and intensifying language over time. According to narrative theory, these results
indicate that bloggers were actually doing more intense thinking than their peers who word-processed (Daiute, 2014; Polkinghorne, 1998; Merleau-Ponty, 1945/2014). And this difference was likely due to the greater interactive potential of the blog as compared to the word-processor.

As one student asked on the final writing day, “are you even going to read ours?” When I queried, “Why do you ask?” The student responded, “Well, the blogs are official because it’s a website but nobody sees word”. This comment by a student who had been word processing suggests that over time she had begun to question her imagined audience: Was it me - the researcher, her imagined peers, or as she put it, nobody? This question also relates to future research directions. While some students blogged, and others word-processed, the students in the current study were all part of the same SEEK cohort. For example, how might first-year students write differently on an expanded network that included a larger audience, such as a campus wide network or even an open network? How such shifts in audience may influence the way first-year students used blogging to make sense of their college transition is a question for future research.
Chapter IV

Results

Research Question Two: Why Did Some Posts Receive More Comments Than Others?

Figure 4.1. Screenshot of student comment.

The previous chapter detailed the ways that the medium and the potential for audience interaction influenced students’ writing. While the students who blogged used fewer words, they used greater rates of cognitive words and intensifying techniques over time. The main difference between the blogging and word-processing media was that the blog allowed for narrator-audience interaction in the form of comments while in the word-processing medium the narrator could only imagine the audience. As noted previously most blogs follow a basic format where authors write narratives, referred to as posts, and readers can then write comments in response to the posts. Looking back on the students’ writing I wondered – why did some posts receive more peer comments than others? The objective of this results chapter was to answer that question by determining the linguistic characteristics of blog posts that received peer comments.\(^5\) In this

\(^5\) As noted in the methods section, the researchers in the current study wrote comments on all posts that had not received a peer comment within three days to one week after their initial post date. Comments written by research assistants were not counted as peer comments for the multiple linear regression.
chapter I introduce the second research question, define the key linguistic components of analysis, introduce multiple linear regression, interpret the results for each variable, and present implications of the analyses.

As in the previous chapter, I used a significance analysis to measure the ways that students used evaluative language (Daiute, 2010; 2014; Kreniske, 2014, Lucic, 2013). Based on reading the blog posts I had anecdotal evidence, some of which I present below, of how the blog functioned as a supportive peer network and for how the culture of commenting developed over time. I hypothesized that intensifying language, psychological states and fluency would be predictors of comments per post at Time 1 and Time 4. Using a mixed methods approach, I determined that the rate of intensifying language and psychological state words per post predicted a small amount of the variance in peer comments at Time 1, and by Time 4 the rate of intensifying language per post and psychological state words per post predicted over 50% of the variance. Fluency did not predict the variance in comments at either Time 1 or Time 4. These findings have implications for scholars who study narrator-audience relationships and for educators designing interactive writing curricula.

**Why Intensifying language?**

As noted in research question one, the participants who blogged used more intensifying language over time as compared to their peers who word-processed. In Purplelover23’s final post she used a high rate of intensifiers to communicate her emotions regarding finals and break:

> Now, that that’s out of the way, **FINALS** are coming and I’m concern but I’m happy that **I HAVE MY FRIENDS**..

**Honestly**, after this hectic semester I can’t wait to **HAVE MY BREAK**!!!!!!!!!!!!!!!!!!
I’m glad that is over, but I’m glad that we have made such a strong bond in such a little time, I know that it might be the end of the semester but it’s not the end of our friendship. In response to this post her peer, Zack, wrote the following comment, “good job, clearly read my mind and also portrays my point of view. i really want the break right now”. I predicted that the bloggers who used high rates of intensity, like purplover23, would receive more peer comments because the audience would perceive that these posts were written by authors who were struggling with meaningful and high-powered emotions and ideas; in essence, these posts called out for a show of support in the form of comments. Another equally plausible and not mutually exclusive interpretation was that the bloggers increased their use of intensifying language in an attempt to capture the attention of peer readers and garner peer comments.

**Why psychological states?**

Psychological states include both cognitive and affective words. As noted in research question one, the participants who blogged used more cognitive words over time as compared to their peers who word-processed. This excerpt from Lois1095’s first post on July 22nd, which she titled “My feeling”, shows how the use of psychological states elicited supportive peer comments.

The first few weeks of X college makes me feel uncomfortable and even now I still feel embarrassed. I am a shy and quiet people who doesn’t like speaking and talking with others. I could understand what they saying but I don’t know how to express myself and convey my feelings to others through speaking. In the first week of X college, many of my classmates make a lot of friends but I still not make friends now because I don’t know what I need to talk with them. However, the teachers make me feel calm because they look so nice and talk politely. I like the way they talk. It makes me feel relaxed. I
want to speak out like them. I am worried about how to get along well with my classmates. Every time I think I am a stranger in the class. I feel alone and isolated. I know it’s my fault because this is my personality that I can’t change.

Over the next two days three peers wrote supportive responses. At 2:37am on July 23rd, dalelewis13 wrote “Just go and say “hey what’s up?!?” and the conversation will follow automatically. You need to take the first step and talk to someone. We all want to make new friends so now it’s the time! 😊”. On the morning of the 23rd daydreamer19 wrote “Dont feel embarrassed im shy too and the easiest thing to do is to just come up with a question to ask somebody and start a conversation like that. Everyone is still pretty new so they wouldn’t pass up the opportunity to make new friends! 😊”. Finally, on the evening of the 24th wingedunicorn92 wrote, “hi lets be friends 5eva”. It is possible this final comment was written sarcastically.

Regardless, the first two comments show how students used the blog to write supportive comments.

Psychological states encompass both cognitive words that indicate a narrator’s thinking processes and affective words, which indicate feelings. Posts that used a high rate of cognitive words were posts in which narrators were thinking through challenging and formative struggles related to their transition to college and therefore peer readers might have been more compelled to comment on these posts. In addition, affect words communicate emotion and peer readers might be compelled to comment on posts that used a high rate of emotion. Therefore, I hypothesized high rates of psychological states per post would be a good predictor of peer comments.

Why fluency?
Finally, I hypothesized that fluency – or the number of words in a post – might predict peer comments. Like intensifying and cognitive words, the bloggers and the students who word-processed differed in their fluency – with the students who word-processed writing longer narratives at both Time 1 and Time 4. While only 12% of students had previous experience blogging, 76% reported using Facebook – a social medium with an average length of 122 words per post (Cvijikj & Michahelles, 2011). In contrast, blogs generally feature lengthier narratives – as was the case in this study where the mean post lengths for Time 1 and 4 were 389.09 and 336.39 words respectively. Perhaps peer readers were more familiar with, and therefore, might be more likely to comment on shorter posts. In addition, a shorter blog post would take less time to read and I predicted that this could have been appealing to the peer audience. Based on these considerations I hypothesized that shorter posts might be more likely to receive peer comments.

**Time 1 multiple linear regression.** I first reviewed the data to determine that there were no outliers or violations of any key assumptions of regression such as independent errors, non-standardized distribution of residuals, and homogeneity of variance. In addition, I checked for possible statistical concerns such as multi-collinearity.

**Checking Time 1 for outliers, multicollinearity and statistical assumptions.** To determine if there were any outliers at Time 1 I checked the standard residuals and I identified two data points, participants 34 and 47, which needed to be removed. After removing these data, analysis of the standard residuals indicated there were no additional outliers (Std. Residual Min = -1.38, Std. Residual Max = 1.75).

Tests of collinearity indicated that multicollinearity was not a concern (Intense, Tolerance = .99, VIF = 1.01; Psychological State, Tolerance = .96, VIF = 1.04; Fluency, Tolerance = .95, VIF = 1.05). As indicated in Appendix F, the histogram of standardized residuals indicated an
approximately normal distribution of errors, as did the normal P-P plot of standardized residuals, which showed points nearly following the trajectory of the line, the scatterplot of standardized residuals demonstrated the data met the assumptions of linearity and homogeneity of variance (Intensity = 14.27; Psychological States = 4.36; Fluency = 28378.38).

**Results of a multiple linear regression for Time 1.** A multiple linear regression using the Enter method was then conducted to determine if rates of intensifying and psychological state words, and fluency predicted the number of peer comments per post at Time 1. Results indicated that intensifying word rates and psychological state word rates, and fluency, predicted a significant amount of the variance of student comments per post \( (F(3,50) = 2.81, p = .049, R^2 = .144, R^2 Adjusted = .09) \). Further examination of the results showed that psychological state word rates (standardized regression coefficient = .351 \( t(50) = 2.63, p = .011 \)) significantly predicted the number of student comments per post. However, intensifying word rates (standardized regression coefficient = .05 \( t(50) = .40, p = .69 \)) and fluency did not significantly predict the number of student comments per post (standardized regression coefficient = .21 \( t(50) = 1.55, p = .127 \)). Therefore, psychological state word rates were the only significant predictor of student comments per post at Time 1. Furthermore, even though psychological state word rates were a significant predictor, psychological state word rates only predicted a small amount of the variance in student commenting at Time 1.

**Time 4 multiple linear regression.** I first reviewed the data to determine that there were no outliers or violations of any key assumptions of regression, independent errors, non-standardized distribution of residuals, homogeneity of variance, and possible statistical concerns such as multi-collinearity. In addition, I checked for possible statistical concerns such as multi-collinearity.
Checking Time 4 for outliers, statistical assumptions and other issues. After checking the standardized residuals I determined there were no outliers at Time 4 (Std. Residual Min = -.99, Std. Residual Max = 1.90). Tests of collinearity indicated that multicollinearity was not a concern (Intense, Tolerance = .99, VIF = 1.00; Psychological State, Tolerance = .95, VIF = 1.05; Fluency, Tolerance = .95, VIF = 1.05). The histogram of standardized residuals indicated an approximately normal distribution of errors, as did the normal P-P plot of standardized residuals, which showed points nearly following the trajectory of the line, and the scatterplot of standardized residuals demonstrated the data met the assumptions of homogeneity of variance and linearity as indicated in Appendix F (Intensity = 40.17; Psychological States = 3.47; Fluency = 9379.49).

Results of a multiple linear regression for Time 4. A multiple linear regression using the Enter method was conducted to determine if rates of intensifying and psychological state words, and fluency predicted the number of peer comments per post at Time 4. Results indicated that intensifying word rates and psychological state word rates, and fluency, predicted a significant amount of the variance of student comments per post ($F(3,52) = 22.07, p < .000, R^2 = .56, R^2_{Adjusted} = .54$). Further examination of the results showed that intensifying word rates (standardized regression coefficient = .72 $t(52) = 7.825, p < .000$) and psychological state word rates (standardized regression coefficient = .19 $t(52) = 2.09, p = .042$) significantly predicted the number of student comments per post. However, fluency did not significantly predict the number of student comments per post (standardized regression coefficient = .13 $t(52) = 1.35, p = .182$). Therefore, intensifying word rates had the largest standardized regression coefficient and smallest $p$ value. This indicated intensifying word rates were the best predictor of comments per
post at Time 4, followed by psychological state word rates. Fluency was not a predictor of comments per post at Time 4.

**Implications and Conclusions for Research Question Two**

This work has both scholarly and educational significance and shows one possible explanation for why blogging appears to contribute to emotional development (Baker & Moore, 2008; Bane, Cornish, Erspamer, & Kampan, 2012; Boniel-Nissim & Barak, 2011; Sosnowy, 2013) and cognitive development (Davidson, 2011; Ducate & Lomicka, 2008; Fishman et al., 2005). At Time 1 the posts with higher rates of psychological states were the most likely to be commented on by peers, though the use of psychological state words only predicted a small amount of the variance in student commenting. However, by Time 4 posts with high rates of intensifying language and psychological state words were the most likely to be commented on by peers and these linguistic markers predicted over 50% of the variance in student commenting patterns. Over the semester the students appeared to have developed a culture of commenting, that involved writing comments on posts with high levels of intensity and psychological states—both markers of sense-making. This process of change from Time 1 to Time 4 showed how the interactive media influenced narrators’ writing, thinking and sense-making processes.

Peer readers were sensitive to the linguistic markers of sense-making and rallied to write supportive comments on posts that communicated the highest rates of sense-making language. For example, Purplelover23 used intensity to communicate her anxiety regarding finals and her excitement about winter break and this post struck a chord with her peer Zack who wrote that he shared a similar feeling. Or when Lois1095 wrote a psychological state laden post about struggling to make friends, her peers were quick to offer uplifting comments. These findings illuminate the relationship between blog writers and reader comments and demonstrate how this
interactive media served as a supportive digital community for students transitioning to college. One prescient student even commented on her peer’s emoticon laden post, “I really like that you use emoticons, and that you approached this post in a more informal way. I also like that you were very truthful”. Emoticons were one way students added both intensity and psychological states to their writing and according to this comment and the general commenting trends this approach was appealing to peer readers.

In the previous chapter I detailed the ways that the media and subsequent narrator-audience relationship influenced students’ writing. The current chapter illustrated that students developed a culture of commenting over the semester. In the current study, the audience was limited to peers and faculty in the SEEK program and the research team. Furthermore, it is worth noting that no faculty wrote comments on student posts. Would this culture of commenting remain the same if the blog audience were changed? For example, how might commenting patterns be different on a blog that was open to the entire campus? Would the posts with the most intense language and psychological state words still receive the most comments? Or did the supportive network develop because the students were all in the same SEEK cohort and therefore were more inclined to develop supportive digital relationships?

Administrators and practitioners who design first-year curricula may find that establishing similar interactive writing communities provides their students with a critical tool for making sense of the college transition and for developing supportive networks. Of course, the blog itself only provided the tool for the social interaction. The real cognitive and emotional work of writing posts, reading posts, and commenting posts was done in and out of class by students in the context of their first-year seminar and the greater SEEK program. As argued by Fabricant and Brier (in press) establishing such interactive digital communities requires an
allocation of resources towards human faculty members who create the curriculum, manage the physical and digital space, and thus foster the creation of a student support network.

In the current study, the blogging community was restricted to students, faculty, and researchers. Future studies may consider exploring commenting patterns on blogs open to the public at large; might the comments of others – such as family members or friends from outside of the university also function as positive supports for student bloggers? Or is it possible that a more open network might inhibit bloggers who would be uncomfortable sharing their transition experiences and other personal stories with the greater public? Furthermore, will intensifying and psychological state words be predictors of comments on blogs with different network members and potentials for audience interaction? These are just a few among a myriad of questions that scholars and educators must consider as we introduce interactive writing media into curricula and encourage our students to engage with each other and with the greater digital public.
Chapter V

Results

Research Question Three: What do These Intensifying Language Trends Look Like For Individual Students Over Time?

As noted previously, engaging in expressive writing about the transition to college encourages students to use writing as a tool for making sense, and to subsequently experience a more successful transition as measured by grades and retention rates (Kuh, 2008; Young & Hopp, 2014; Walton & Cohen, 2011; Walton et al., 2013). Given the proliferation of social and highly interactive writing media, the purpose of this study was to explore how the medium influenced the way SEEK students narrated their transition to college. While research question one and two examined statistical trends, research question three asks how did these linguistic trends play out in individual narratives, and how did they change over time? In this chapter I will not conduct any further statistical, rather I will be presenting an in-depth qualitative analysis of three student cases at Time 1 and Time 4. One of these students wrote using Microsoft Word and received no peer comments. While the other two students wrote on the blogging medium that

Figure 5.1 Screenshot excerpt of MonsieurD’s conclusion to Post 4

As noted previously, engaging in expressive writing about the transition to college encourages students to use writing as a tool for making sense, and to subsequently experience a more successful transition as measured by grades and retention rates (Kuh, 2008; Young & Hopp, 2014; Walton & Cohen, 2011; Walton et al., 2013). Given the proliferation of social and highly interactive writing media, the purpose of this study was to explore how the medium influenced the way SEEK students narrated their transition to college. While research question one and two examined statistical trends, research question three asks how did these linguistic trends play out in individual narratives, and how did they change over time? In this chapter I will not conduct any further statistical, rather I will be presenting an in-depth qualitative analysis of three student cases at Time 1 and Time 4. One of these students wrote using Microsoft Word and received no peer comments. While the other two students wrote on the blogging medium that
was generated as part of a WordPress Multisite installation where my research assistants and I acted as Super Admins and the participants were enrolled as Authors. This medium was described in detail in the Research Design.

A brief review of the major findings from research question one shows that the students who blogged and the students who word-processed wrote differently and that their writing changed in different ways over time. The bloggers used higher rates of intensifying and cognitive words over time than the students who word-processed. While the students who word-processed wrote longer narratives at both time points their fluency declined more rapidly than the bloggers. Findings from research question two indicated that by Time 4 intensifying word rates were the best predictor of peer comments.

The major findings from research questions one and two indicated intensifiers were of critical importance. As noted earlier, a significance analysis (Daiute, 2014; Lucic, 2013) was used to measure the evaluative components of language in each narrative (Labov & Waletzky, 1967/1997). Evaluative devices are of particular interest to narrative researchers because they are the linguistic markers of a narrator’s sense-making process (Daiute, 2014; Daiute & Nelson, 1997; Lucic, 2013).

For the purposes of this study I focused on evaluative words that were used by narrators to add emphasis (intensifiers), or communicate psychological states such as emotions (affective) and thoughts (cognitive). For example, affective evaluative devices, such as *feel*, are used by narrators’ to communicate emotions, while cognitive evaluative devices like *think* are used to convey a narrators’ cognitive processes. Affective and cognitive evaluative devices were coded at the word level. In contrast, narrators can add intensity in a variety of ways: with phrases, words, repeated letters, or by adding punctuation such as a string of capital letters or an
exclamation point. The variability and diversity of intensifying techniques makes intensifiers a challenging linguistic category for narrative researchers. In attempt to capture this variability with my coding schema, intensifiers were coded at the phrase, word and in the case of repeated letters of punctuation at the character level.⁶

In this section I focus on three students’ writings and show how these students used different types and rates of intensifiers in the blogging and word-processing media and how this related to peer commenting patterns. These students were selected to serve as exemplars of the trends described in the previous results chapters. Therefore, I selected one student, No Comply, who word-processed and two bloggers, MonsieurD and Newbeginnings, and closely examined their Time 1 and Time 4 narratives. One blogger, MonsieurD, received many peer comments, and the other blogger, Newbeginnings, received no peer comments. The writings from these three students add context and texture to the intensifier trends detailed in the previous results sections. Like the great majority of the students in this study these three students reported being between 18-21 years old.

The in depth analysis of the uses of intensifiers showed how students were emphasizing emotions at different times in the semester and illuminated the ways that the use of intensifiers in combination with the psychological states of affect and cognition transcended media. While in the first post intensifiers almost exclusively added emphasis to affective words, by the final post the intensifiers only occasionally emphasized affect words, and were more often used to emphasize cognitive words and specifically academic struggles.

**No Comply’s Word-Processed Intensifiers Declined Over Time**

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⁶ For in depth explanation of the coding system see the methods section.
No Comply employed a variety of linguistic devices to add intensity to his first post and these intensifiers were often used to emphasize affect. He used words such as “really” and “so”, he exaggerated, and used figurative language such as similes and metaphors, included creative punctuation such as parenthesis and a capital letter placed strategically in the middle of a sentence and used some repetition. No Comply – like many of his peers who word-processed – used a higher rate of intensifying language in his first post (7.96) as compared to his last post (7.87). Though this difference is small, results from the first results chapter show that overall there were significant differences in the rates that students in the word-processing and blogging groups used intensifiers.

**What we know about No Comply.** No Comply’s choice of pseudonym likely reflects his interest in skateboarding, as No Comply is the name of a popular trick. No Comply reported being a man between 18-21 years of age. He indicated he was born in the United States, that he was ethnically Latino, Hispanic, and Spanish, and that both of his parents had earned an 8th grade education. He reported his first language was English and second language was Spanish. No Comply stated he did not have any social media accounts and rarely wrote comments on blogs or other online forums. When asked in the Media Survey if writing about the transition to college was helpful No Comply responded, “I felt like writing helped me understand the concept of growing”. When prompted to reflect further he elaborated that, “I felt like I used it to vent at times and to reflect, I felt like I could use this to say all the things I’ve been holding inside knowing someones actually going to read it and listen to me”. With the intent of illuminating the ways that No Comply used writing as process of growth and reflection I present a fine-grained analysis of the way No Comply used intensifiers in his first and last narratives.
No Comply’s first narrative. In his first narrative No Comply used words like “really” and “so” to add intensity to his emotions. He wrote of how talking with the peer mentors “really did ease me down”. In addition, No Comply used hyperbole to add emphasis to his emotions. In one instance he wrote, “Going into [College X] everything and everyone feels so intimidating…” (bold added). Even if we accept that “everything” about college was intimidating there is no way that the narrator could be sure that “everyone” feels this way. Therefore, words such as everything and everyone were likely an exaggeration that added emphasis to his description of feeling intimidated. Using words like “everything” and “everyone” was one technique No Comply used to convey his intensely heightened emotions.

No Comply followed the above statement with a cliché and a simile writing, “as they all got places to be and things to do, sort of like a shopping mall everyone’s just there an no one really knows each other yet they’re in the same stores looking for the same things”.

No Comply used the cliché “places to be and things to do” and the simile to communicate his intense sense of unfamiliarity with the people and the college setting in general.

Later in his narrative No Comply again called upon a simile to describe how he felt about his professors:

I felt as if they’re your survival guide on a wild zoo where the animals are professors and they’ve just been let out and some may look mean but may be nice and others may look pleasant but will give you migraines all semester, and you never really know who you’re going to get you just know that you have to be ready (an analogy used by one of my professors.)

Again the simile served to add emphasis and intensity to his written emotions. No Comply felt as though he had entered a “wild” environment. In addition, No Comply used parenthesis as another
intensifying tool. While the parenthesis serve to set aside the statement, in doing so they also call further attention to the clause and therefore in my narrative analyses system parentheses were consistently coded as intensifiers.

No Comply concluded his narrative with a flurry of intensifiers including another simile, repetition, a reference to a college party song and a capital letter in the middle of the sentence:

As I reached my first day it hits you, this is your new daily routine, the commute the walk to the school the constant swiping the elevator taking all [sic] to get to class every single day for over 4 years, it gets pretty overwhelming and it hits you like a ton of bricks that this isn’t No Asher Roth “I love college” music video, its college and everyone’s here for one thing only, a college degree.

Repeating the word “hit” and using the simile “like a ton of bricks” were two ways No Comply intensified this strong emotion. In addition, I coded the use of quotation marks as a technique for adding emphasis to the title of the college party song, *I Love College*. Furthermore, by using a double negative and capitalizing the first letter of the word “No”, No Comply emphasized that his college experience was distinctly different from the college experience depicted in the song and accompanying music video.

For readers unfamiliar with this song – as I was – the chorus is as follows:

That party last night was awfully crazy I wish we taped it

I danced my ass off and had this one girl completely naked

Drink my beer and smoke my weed

But my good friends is all I need

Pass out at three wake up at ten

Go out to eat then do it again
In this first post, No Comply evoked *I Love College* in order to reject the portrayal of college it depicts. The ending of this first post, where the intensifying language is related to No Comply’s academic goal—“to get a college degree”, foreshadows the shift that comes by his final post that focused on what he learned over the semester.

*No Comply’s final narrative.* In his final narrative No Comply used intensifiers to communicate his increased focus on aspects of learning and academic success.

As in his first post, in his final post No Comply used words such as “really”, figurative language and a capital letter in the middle of a sentence to add intensity. In addition, No Comply used more repetition in his final post.

In his first post No Comply used words like “really” and “so” to add intensity to emotions. In his final post No Comply did not use the word “so” and only used the word “really” once writing, “what I thought I was really good at, suddenly flew out the door and my grades were slipping”. In this instance “really” was used to emphasize No Comply’s re-evaluation of his academic strengths.

No Comply began his last post with a metaphor writing “During my first semester not only have I experienced a rollercoaster both academically and personally but I learn to adapt to a new environment that I was unfamiliar with”. He then used figurative language to communicate his emotions:

What I’ve felt throughout the semester is a loss in drive for work, what I thought I was really good at, suddenly flew out the door and my grades were slipping. I was uncomfortable talking to my professors about it and at some points I even stopped coming, but something had changed, I can say with certainty that I am not the same person who wrote their first blog post back in the summer. I burned out halfway through
the semester in College and it’s only recently that I’ve started to pick myself and try again and I’ve learned that self-responsibility and discipline is the most significant aspect of high grades.

This figurative language is used by No Compily to emphasize his cognitive process, or trouble with cognitive processes, where he felt that he was somehow losing his grasp on his prior knowledge and his emotion of feeling “burned out” that was clearly related to his academic efforts. Whereas in his first post these intensifiers added emphasis to emotions about being intimidated by the new school context, in his final post the intensifiers were more often used to emphasize his cognitive and largely academic travails.

No Comply’s use of repetition stands as the most pronounced example of the way he intensified both emotional and cognitive words in his final post.

I’ve learned that self-responsibility and discipline is the most significant aspect of high grades. I’ve learned to find myself in college and just recently learned to balance myself out. I’ve learned that I feed off competition in classes for grades. I’ve learned that I hate being in school at night, it’s quite depressing seeing the Sunset slip into the night off the 14th floor in the 23rd Street building. I’ve learned to hate the 23rd street building in general. I’ve learned that I’m a very reserved individual.

In the above excerpt No Compily capitalized the first letter of the word “Sunset” and then repeats the phrase “I’ve learned” in a series of sentences. Both of these intensifiers were used to add emphasis to No Compily’s description of his adjustment to the demands of academic college coursework. In addition, No Compily repeated the phrase “I’ve learned” seven times to emphasize how he had learned to adapt to the demands of college.
In his first post No Comply used intensifying language to emphasize predominantly emotional words, while in his final post he used intensifying language emphasized both emotional and cognitive words. Overall, in his first and last posts, No Comply used similar techniques and similar rates of intensifiers. In both posts No Comply added intensity by using words such as “really”, figurative language, capital letters, and repetition. However, in his final post he increased the number of times he used words such as “so” and “really”, and increased his use of repetition. The types and rate of intensifiers No Comply used in these posts were characteristic of his peers who wrote on a word processor. In contrast, the bloggers increased their rates of intensifiers over time and they did so by calling upon a different set of intensifying techniques.

As was expected based on previous work on writing and the college transition, despite receiving no peer feedback on his narratives No Comply used the writing activity as a tool to make sense of the transition to college. The next two cases come from students who wrote on a blog that allowed for peer commenting.

**Newbeginnings, A blogger Who Did Not Receive Peer Comments on the First and Last Posts, Developing Intensity**

In contrast to No Comply, Newbeginnings increased her rate of intensifiers from the first (8.21) to the last (11.47) post. Interestingly, like No Comply, the intensifiers in Newbeginnings first post were used to emphasize emotions, while in her final post the intensifiers were used to emphasize both emotional and cognitive processes. Newbeginnings used a variety of intensifying techniques in her first post including words such as “actually” and “really”, figurative language, strings of capital letters, and creative punctuation.

**What we know about Newbeginnings.** Newbeginnings reported being a woman between 18-21 years of age. Newbeginnings indicated she was born in the United States, her
ethnicity was Black or African-American, and that her parents had earned a High School diploma or the equivalent. Newbeginnings reported that she did not speak or read any languages other than English. Newbeginnings was active on social media; she used Facebook and Twitter many times daily and made monthly blog posts. Newbeginnings indicated she also used other social media. When queried about the names of these social media she replied “noneyobeezwax”. When asked in the Media Survey if writing about the transition to college was helpful Newbeginnings responded, “Yes, it helped a little”. When prompted to reflect further she elaborated, “I think writing was a good way to vent. The blogs are the best”. A close analysis of Newbeginnings narratives shows the way her writing changed over time and specifically how she increased the rate and variety of intensifiers.

**Newbeginnings first narrative.** In her first post, Newbeginnings used the intensifying word “actually” three times and “really” twice. Often these words were used to describe social-emotional dynamics, as when Newbeginnings described how, “it can be really difficult for me to make friends.” Later she emphasized her feelings about diversity at college writing, “I really like how diversity is a big thing hear. Its actually one of the big things I liked about [College X]”.

Newbeginnings and many of her blogging counterparts like MonsieurD used strings of capital letters to add intensity to their writing. Newbeginnings used a string of capital letters to add intensity to the phrase “VERY INTIMIDATING”. In interactive digital writing this type of capital letter use generally indicates the narrator intended the capitalized words to be emphasized and could even be read as screaming or shouting.

Finally, Newbeginnings used an ellipsis in the title of her first post to add intensity. The ellipsis traditionally implies something left out. Newbeginnings uses the ellipsis to indicate that something has been left out and in doing so she calls attention to what has been left out. This
approach to intensifying through absence is used by Newbeginnings sparsely in her first post, and more frequently in her final post. In the title of her first post Newbeginnings seems to be using the ellipsis as a way to add emphasis to the words in her title, writing “Week One…” The ellipsis indicates there is more to say about week one. The ellipsis goads the reader to investigate the post and find out the story behind “week one”. The body text of her post begins by building on this expectation, “In order for me to tell you how my first week went I have to give a slight back story on who I am”.

In her last post Newbeginnings increased her rate of intensifying language by continuing to use the intensifying techniques detailed from her first post and by expanding her intensifying repertoire. Newbeginnings continued to use intensifiers such as “really” and “actually”, she included one string of capital letters and increased her use of ellipses. In addition, she developed new techniques for adding emphasis with words like “um yea” and “lol”, and used an exclamation point, which she had not used in her first post, to punctuate two sentences.

In contrast to the first post where intensifiers such as “really” and “actually” added emphasis to emotions, in her final post Newbeginnings used these words to add intensity academic work and specifically studying. For example, Newbeginnings wrote (bold added):

I didn’t study for my global midterm and manged [sic] to past because I had [sic] least read some of the chapters but I don’t really suggest not studying. I might of just gotten lucky. Other than that I managed to pass all my midterms when I only really studied for one.

In total, in her last post, Newbeginnings used “really” four times and “actually” once and in each case the intensifier was in reference to her academic work. In addition, when Newbeginnings
used a string of capital letters it was directly related to academics. Newbeginnings capitalized the phrase “NOT FAILING”.

In her final post Newbeginnings increased her use of ellipses and used them in more varied ways. At times she used ellipses to emphasize emotions and on other occasions she used ellipses to emphasize her academic struggles. Newbeginnings used ellipses four times in her final post. Three of these ellipses were not full ellipsis as she only used two periods – not three. The first ellipsis was – like her first post – placed after the title of the post “1st Semester..”. Her next use of an ellipsis emphasized her emotion that she could not “wait for the semester to be over..”. Her third ellipsis was the only instance in which she used three periods (the traditional ellipses) and it punctuated a sentence related to seeking academic support. While the final ellipsis added extra emphasis to a sentence that also included a common Internet abbreviation and related to social life at college.

Newbeginnings also incorporated abbreviations developed and popularized in interactive digital writing such as “um yea” and “lol” to communicate humor and perhaps sarcasm about social relations in college. In one instance Newbeginnings wrote “On another [sic] social life at [College X] is um yeaa..”. Using the phrase “um yeaa” in place of a qualifier to describe “social life” at college was likely Newbeginnings’ way of using sarcasm to emphasize her opinion that the social life was lacking on the campus.

Finally, Newbeginnings used two exclamation points, the quintessential intensifying punctuation, in her final post as compared to none in her first post. These exclamation points were used in consecutive sentences in relation to academic pressures:
If you fail your math class or get an incomplete you have to come back in the winter and basically lose your entire winter break! I am so tired from all this work I want to use that entire month for sleep!

The first exclamation point added emphasis to a description of a negative academic outcome Newbeginnings was hoping to avoid and the second exclamation point emphasized an exaggeration: that she would need to use her entire winter break to catch up on all her lost sleep. These seemingly small changes in the rate of intensifying language made for a marked increase in intensity from the first (8.21) to the last (11.47) post and reflected the overall trend in the bloggers’ writings. In addition, like No Comply, Newbeginnings shifted her emphasis from her first to last post: mainly emphasizing emotional processes in her first post and emphasizing both emotional and cognitive processes in her final post. This change indicated a shift in the way that Newbeginnings was using writing to make sense of differing challenges at the beginning and the end of her first six months of college. While in her first post during the first week of college Newbeginnings used her writing to make sense of elements of her transition related to emotions, by her final post during one of the last weeks of the fall semester, Newbeginnings was using the writing activity to make sense of cognitive and largely academic challenges.

**MonsieurD: A Blogger Who Received Many Peer Comments and Increased Intensity over time**

MonsieurD used a high rate of intensifying language in his first (12.61) and last posts (56.98) and he received the most peer comments of any blogger on each of these posts. Like No Comply and Newbeginnings, MonsieurD used intensifiers to emphasize emotions in his first post. However, MonsieurD used a wider array of intensifiers and used intensifiers more frequently than either No Comply or Newbeginnings. In his last post MonsieurD used
intensifiers even more frequently to add emphasis to both cognitive and emotional aspects of his writing.

**What we know about MonsieurD.** MonsieurD reported being a man between 18-21 years of age. MonsieurD indicated he was born in the United States and that the highest degree of education either of his parents had earned was an associate’s degree. MonsieurD declined to indicate his ethnicity. MonsieurD reported that his first language was English and his second language was French. Like Newbeginnings, MonsieurD was an active social media user. He indicated that he had a Facebook account that he used many times daily and a blog that he posted to one time per day. Furthermore, he stated that he wrote comments on blogs or other online forums at least once a day. While MonsieurD indicated he used other social media he declined to specify which platforms. When asked in the Media Survey if writing about the transition to college was helpful MonsieurD responded, “Yes, it helped a lot”. When prompted to reflect further he added one word: “Awesome”. A close examination of MonsieurD’s posts highlights the way he used intensifying language to make sense of his college transition experience and how this related to the interactivity of the blogging media.

**MonsieurD’s first narrative.** In his first post MonsieurD used a wide variety of intensifiers including emoticons, superfluous capitalization, word and letter repetition, exclamation points, quotes, hyperbole, parenthesis, catchphrases, and word level intensifiers such as “really” and “very”.

In the first sentence of the first post MonsieurD used a “whale face” emoticon writing:

I was writing a post before this and it magically got deleted, so that explains my title -_____________. Anyways, I always had performance anxiety; frequently questioning my ability to do things that I have never done before. I am open to new things but when
the time comes down to it, I worry, worry, worryyyyy. I was salutatorian for my graduating class and I worried about how my speech was going to go.

Emoticons are one technique for adding emphasis or emotion, or intensified emotion, to digital written communication where such inflection is otherwise impossible (Schnoebelen, 2012). The emoticon, originally called a “smiley”, was first proposed on a Carnegie Mellon University message board to indicate a joke or a humorous statement (as cited in Baird, 2002). In the current instance the emoticon whale face could be interpreted to be conveying a sense of dissatisfaction because he “was writing a post before this and it magically got deleted”.

MonsieurD also used repletion to add emphasis to his emotions. In the above excerpt MonsieurD used two different types of repetition. He repeated the word worry three times. In third and final repetition of worry MonsieurD inserted multiple extra letters such as r’s and y’s to add emphasis to the emotion.

MonsieurD not only intensified with punctuation, he also used hyperbole. He wrote “I was ecstatic to find out that I got accepted because it was my dream college of all time”. Here MonsieurD uses the phrase “of all time” to add extra emphasis in the statement “it was my dream college” by adding the words “of all time”.

Finally, MonsieurD developed a signoff that included the Swahili phrase “Akuna [sic] Matata” preceded by a series of repeated tildes. Hakuna Matata means “no worries” in Swahili, and MonsieurD’s use of this phrase is interesting given the emphasis he places on worrying in his narrative. One interpretation of this shift could be that the writing activity helped MonsieurD work through his feelings of worry and that by the conclusion of the post he is actually feeling no worries.
Like Newbeginnings, MonsieurD also used a string of capital letters to add emphasis to his first post. MonsieurD used this string to emphasize the last line of his post writing, "KNOWLEDGE IS KEY".

In his last post MonsieurD increased his rate of intensifiers. He continued to use some of the intensifying techniques he had demonstrated in his first post, such as repeated letters, hyperbole and exclamation points. In addition, he used a simile to add emphasis writing, "Midterms were a blow like hurricane Sandy". Furthermore, in his last post MonsieurD relied more heavily on strings of capital letters than he had in his first post. In addition, in his last post MonsieurD employed intensifying conventions common to the Internet such as the abbreviations like lol and lmao, and hashtags to indicate emphasized topics. Finally, MonsieurD added emphasis by using profanity more frequently in his last post as compared to his first post. These intensifiers were used to communicate academic struggles and emotional states.

Often MonsieurD used a series of intensifying techniques simultaneously. In these instances it was often the case that the emphasis was on an emotion related to an academic struggle. For example, he used the popular Internet abbreviation lmao (laughing my ass off) with repeated letters, strings of capital letters and repeated question marks in three sentences focused on the possibility of attending winter school for students who failed their math course:

You’re going to WINTER SCHOOL lmaooooooo, not even summer school, WINTER SCHOOL. You’re non-college siblings will be laughing their asses off sipping on that COCO during their winter break. HOW EMBARRASSING IS THAT??

This instance of hyper-intensity was not the exception but rather the rule for MonsieurD and he concluded his post with a similar series of intensifiers:
Look it [sic] the bright-side, WE DON’T GET REPORT CARDS! So you can hide that sh*t whenever you get the results lmaooo, THATS WHAT IMMA DOOOO :P.

#ImGrown. ENJOY YOUR BREAK!!!!!!

SHOUTOUT TO ALL PEARS!!

~~~~HAKUNA MATATA

There are almost too many intensifiers to process. He begins the above excerpt with the somewhat cliché metaphor of looking at the bright side. Then quickly transitions to a string of capital letters topped off with an exclamation point. He then refers to report cards as “shit” and uses the asterisk as a censoring tool that simultaneously adds further intensity. This is followed by another “lmaooo” with a couple superfluous o’s for added emphasis. The sentence, if we can call it that, is then concluded with a string of capital letters some of which are repeated for emphasis – such as the four extra o’s and a colon “P” which is the emoticon for sticking one’s tongue out. MonsieurD then includes a hashtag, another string of capital letters followed by a series of exclamation points, a final string of capital letters, “SHOUTOUT TO ALL PEARS!!”7 and his trademark series of tildas and “HAKUNA MATATA” signoff.

MonsieurD is clearly feeling and communicating a high level of intensity about the end of his semester in this last blog post. Interestingly, his peers or pears, responded to these emotions and his post received six comments. This is perhaps what is most important about the capabilities of interactive digital writing: a student can be feeling high levels of intensity about their transition to college and the blog with its interactive capabilities is a place to both work

7 Based on previous correct spellings of the word “peer” by MonsieurD and the fact that the “e” key and the “a” key are not adjacent on the keyboard – making a typo unlikely– I inferred that the word “pear” was an intentional misspelling of peer and was an inside joke of some sort.
through, in this case by making light of, these intense struggles, and elicit peer support. Another interpretation might be that MonsieurD learned that high levels of intensity helped him garner comments and he therefore changed his writing to include more intensifiers because he liked getting comments.

**Research Question Three: Concluding Thoughts**

A detailed analysis of the types of intensifiers used on the blog and with the word-processor shows that the bloggers, as compared to the students who word processed, used a greater variety of intensifying language including strings of capital letters, emoticons, repeated letters and repeated punctuation. Despite these differences between the writing in the two media there appeared to be a common trend in the way the students used intensifiers with psychological state words. In the first post, as they transitioned to college, the three students used intensifiers to emphasize their emotional states. In their last post as they approached the final days of their first semester, all three students shifted the focus of their posts and the intensifiers were then used to highlight their emotional and cognitive struggles.

There were distinct differences in the way the students who word-processed used intensifiers as compared to the bloggers. While No Comply, like many of the students who word-processed, continued to use similar types and a similar rate of intensifiers in his first and last post, Newbeginnings and MonsieurD, the two bloggers, employed a greater rate and variety of intensifiers in their last posts as compared to their first posts. The potential for interactivity on the blog appears to be a catalyst that encouraged the bloggers to increase their rate and diversity of intensifiers. There are at least three possible reasons that students who blogged used a greater rate and greater variety of intensifiers over time and all of these reasons relate to the potential for interactivity in the two media.
First, it is possible that the bloggers used more intensifiers because the interactive nature of the medium influenced them to be more cognitively and emotionally invested in their writing over time. Intensifiers as their name implies, are used to add intensity and emphasis. If we take the theoretical perspective that writing is a tool to develop thoughts and emotions, and simultaneously writing produces a physical manifestation of thought and emotion, then these blogged writings, with high levels of intensified thoughts and emotions, are evidence of high levels of thinking and feeling. These greater levels of intensified thinking and feeling were linguistic markers of intense sense-making processes. In contrast, the students who word-processed used fewer intensified thoughts and emotions indicating that word-processing may be a less conducive medium for thinking and feeling and ultimately for making sense of the transition to college.

A second explanation for the bloggers higher level of intensity in their writings was that they were aware that high levels of intensity were likely to garner peer comments and therefore they used more intensity in an attempt to elicit comments. As explored in detail in the second results section by the final day of writing the students who blogged had developed a culture of commenting where posts with higher rates of intensifying and psychological state words were more likely to garner more peer comments. The potential for interactivity on the blog may have encouraged students to develop a writing style that used more intensifiers and psychological state words. In contrast, students in the word-processing condition had no such incentive to change their writing style.

A third explanation for the differences in writing style developed by students in the two media relates to a different type of interactivity. The bloggers were able to read their peers’ writings while the students who word-processed could not see each other’s narratives. It may
have been the interactive process of reading peer’s posts that contributed to a development of a writing style on the blogs, marked by higher rates of intensifiers and cognitive words (as noted in results section one) than the students who word-processed. Through reading each other’s posts over the semester the bloggers were exposed to more varied techniques for adding intensity, and they adopted some of these techniques in their own writing. While commenting is possible in traditional word processing programs such interactions are more linear with one reader writing comments on a document that is usually sent directly to that reader by an author. The capability for numerous peers to simultaneously read and comment on blog posts is one of the key characteristics of blogs and other social media sites. Through commenting, the blogs allow for a more dynamic type of interaction with many peers. It seems likely that some combination of these three explanations accounts for the differences in intensifying and psychological state words within the blogged narratives and between the blogged and word-processed narratives.

Aside from the differences in rate and variety of intensifying language, the majority of the students across the two media shifted the focus of their writing – and subsequent sense-making – from more affective focused to more cognitive focused over the course of the semester. This shift indicated that the students were likely struggling to make sense of the academic transition in their final post as opposed to the more social-emotional struggle they communicated in their first posts. This greater density of cognitive words might be signaling the effortful and reflective dimension of sense-making, while the greater density of affective devices might indicate more spontaneous engagement with an unsettled emotional nature of transition to an unfamiliar environment. Furthermore, as previous work has shown writing can be a critical tool that students can use to make sense of their transition to college. What the current work shows is
that the ways students use writing is influenced by the medium in which they are writing, and specifically the potential for peer interactivity.

Counselors and educators may make use of these findings as they seek to offer targeted guidance and support for students at different points in the transition to college. In fact, the faculty in the program of study reported that reading the narratives was a great resource for gaining further insight into about the struggles their students grappled with during their first semester. In a post-project meeting a first-year seminar instructor told of how students opened up on the blogs about struggles they would never communicate in class.

Writing about the transition to college on a blog or word-processor was an important and meaningful sense-making activity for students transitioning to college. However, the medium did matter and depending on the medium the characteristics of student writing and thus their sense-making differed. Ultimately, the blog, with its interactive capabilities, fostered the development of a writing community where peer readers were more likely to offer supportive comments to bloggers whose posts communicated heightened levels of sense-making as demonstrated by greater rates and variety of intensifying techniques over time. These differences indicate that highly interactive writing media, like blogs, may be especially useful for educators and administrators who seek to catalyze supportive digital communities that encourage students to use writing to make sense of their transition to college.
Chapter VI

Discussion

Tweet, text or post, the current digital scene is burgeoning with possibilities for narrator-audience interactions. This presents a great challenge and opportunity for contemporary researchers seeking to continue a decades long tradition of investigating narrator-audience relations. This practice based research extends the theory on narrator-audience relations, by presenting one of the first experimental studies to explore the ways that blogging, a highly interactive writing media, influenced students’ writing differently than word-processing, which offered no possibility of narrator-audience interaction. The blogging technology functioned as a tool that faculty, and in this case the researchers, and students used and form an interactive digital community. The following discussion includes a summary of the findings for the three research questions followed by overall implications and concludes with suggestions for future research directions.

A narrative analysis of the evaluative components of language and subsequent statistical analyses indicated that over time the students who blogged used greater rates of intensifying and cognitive words and fewer total words than their peers who word-processed. In addition, the students whose writing generated the highest levels of interactivity – as measured by peer comments – used the greatest rates of intensifying and psychological state words. A detailed comparison of three student exemplars suggests that the students who blogged not only used greater rates but also used greater varieties of intensifying techniques. These evaluative devices were coded in the context of the entire narrative and indicated the ways that narrators emphasized their thoughts and emotions depending on the media.
Despite these differences, some commonalities across writing media were evident. For example, students focused their sense-making on similar challenges at the beginning and end of their transition to college; at first using intensifiers to emphasize predominately emotional words and later intensifying both emotional and cognitive words. Taken together these findings have implications for researchers who study narrator-audience interactions and for practitioners involved in college transition programs. Questions for future study concern narrative analytic approaches, a further exploration of comments, and the influence of writing with a variety of interactive writing media. Finally, how might these questions and the findings from the current work relate to academic achievement measures such as GPA’s and retention rates?

**Summary of Major Findings**

The following three findings show how the interactive potential of the media influenced students’ writing. Overall, the greatest differences between students’ writings on the blog and with the word-processor were related to intensifying language, followed by psychological state words and specifically cognitive words.

**Research question one: Did students’ writing in the two media differ and did these differences change over time?** Students writing in the two media differed and changed over time in distinct ways depending on the writing media. Fluency for students in the word-processing medium began at a higher rate and declined more rapidly than the bloggers’ fluency. Initially there was little difference in the cognitive and intensifying language used in the blogging and word-processing media. However, over time the bloggers increased their use of cognitive and intensifying language while students who word-processed did not. The highly interactive media encouraged students to invest greater rates of cognitive energy and intensity into their writing over time. According to narrative theory these differences indicate that the
media influenced the way students wrote and consequently thought about and made sense of their college transition (Daiute, 2014; Polkinghorne, 1998; Merleau-Ponty, 1945/2014).

**Research question two: Why did some posts receive more comments than others?**

At Time 1 the posts with higher rates of psychological states were the most likely to be commented on by peers but the use of psychological state words only predicted a small amount of the variance in student commenting. By Time 4 posts with high rates of intensifying language and psychological state words were the most likely to be commented on by peers and these linguistic markers predicted over 50% of the variance in student commenting patterns. This commenting pattern suggests the linguistic markers of sense-making inspired peers to interact with narrators who were engaged in the most intense psychological sense-making processes. For example, the students who received the most comments, like Lois1095 who wrote about struggling to make friends, and MonsieurD who worried about his first days in school, used high rates of psychological state words and intensifying language.

These findings may offer insight into why previous researchers have found blogs contribute to positive emotional and cognitive development (Baker & Moore, 2008; Bane, Cornish, Erspermer, & Kampan, 2012; Boniel-Nissim & Barak, 2011; Davidson, 2011; Ducate & Lomicka, 2008; Fishman et al., 2005; Sosnowy, 2013). The relationship that developed between blog narrators and reader comments in the current work demonstrates how the interactive medium fostered a supportive digital community for students transitioning to college and provides clues about the ways that blogs function as supportive tools in other contexts.

**Research question three: What do these intensifying language trends look like on the narrative level, and how did they change over time?** A detailed analysis of the types of intensifiers used on the blog and with the word-processor showed that not only the rate but also
the variety of intensifiers differed between the two media. Despite these differences between the writing in the two media there appeared to be a common trend in the way the students used intensifiers with psychological state words. In the first post, as they transitioned to college, the three students used intensifiers to emphasize their emotional states. In their last post, as they approached the final days of their first semester, all three students shifted the focus of their posts and the intensifiers were then used to highlight both emotional and cognitive struggles.

**Implications**

These findings demonstrate three ways that the interactive potential of the media influenced students writing and thinking about the transition to college and have implications for both researchers and educators.

**Implications for researchers.** These findings extend the current understanding of narrator-audience relations, writing technologies, and psychological development, by demonstrating that even when narrators address the same peer audience the potential for interactivity in a given writing medium influences narrators’ writing and thinking over time.

Researchers in the 1980s and 1990s showed that narrators wrote differently when addressing distinct audiences (Cohen & Riel, 1989; Daiute, Campbell, Griffin, Reddy & Tivnan, 1993; Ede, 1989; Flower, 1979; McLane, 1992; Ong, 1975; Smagorinsky, 1994; Sperling, 1996). Researchers of college level narrators even found the more the narrators knew about the audience the higher their writing quality (Black, 1989). A decade later researchers showed that not only did the quality of writing change with changing audiences but the plot structures and evaluative components of narratives shifted too (Daiute, 2010; Daiute, Todorova Kovacs-Cerovic, In Press; Lucic, 2013). At the same historical moment researchers were calling for a renewed investigation of narrator-audience relations given the rise of interactive writing media including a variety of
user-friendly blogging platforms and other social media such as Facebook (Magnifico, 2010; Manago et al., 2012).

Despite these calls, few studies have previously investigated the effects of media with different potentials of interactivity on narrators’ writing (Lammers, Magnifico, & Curwood, 2015; Tamim, Bernard, Borokhovski, Abrami & Schmid, 2011), and the psychological implications of these effects (Manago & Vaughn, 2015; Wuyts, Broome, McGuire, 2011). The current work braids together lines of inquiry related to audience, writing technologies and psychological development and shows that the potential for audience interaction has direct influence on the way narrators write, think, and feel and that this changes over time.

It is critical to note that these differences were not immediately apparent. It took time for students to develop a writing style – marked by higher rates and varieties of intensifying language – that was tailored to engage their peer audience. Had the current work focused on just the first time point only fluency levels would have differed, with students who word-processed writing longer narratives. This finding would have been somewhat misleading as fluency also declined more rapidly for students who word-processed, and by Time 4 the students who word-processed wrote narratives that were only about 50 words longer than those who blogged. While this difference was statistically significant, the practical significance of a 50-word difference is debatable. Similarly, the linguistic predictors for which posts were more likely to receive comments were more pronounced at Time 4 than at Time 1. It took time for students to develop distinct patterns of writing and commenting in the two media. This process of change from Time 1 to Time 4 shows how the interactive media influenced narrators’ writing and thinking over time. On the blog the results of the narrator-audience interplay were narratives that were laden
with intensifying language and psychological state words—both of which are linguistic markers of sense-making.

These patterns of commenting that develop over time may help explain why researchers have found blogging contributes to emotional (Baker & Moore, 2008; Bane, Cornish, Erspamer, & Kampan, 2012; Boniel-Nissim & Barak, 2011; Sosnowy, 2013) and cognitive development (Davidson, 2011; Ducate & Lomicka, 2008; Fishman et al., 2005). Readers in the current study were particularly responsive to narratives with high levels of intense psychological sense-making language. This type of narrator-audience interaction may explain why previous studies have found blogging contributed to emotional well-being. However, much work is still needed on narrator-audience relations in highly interactive digital media. There are numerous platforms for writing to and with interactive audiences. Even within the genre of blogging and the specific WordPress platform there are settings for expanding or limiting narrator-audience interactions. After exploring the implications for educators I will return to detailing directions for future research in more detail.

**Implications for educators.** While researchers may be intent on studying the dynamics of narrator-audience relations, it is practitioners who have the dynamic skills needed to design and implement meaningful writing activities. Findings from the current work illuminate the ways that interactive writing communities develop over time and the ways that this development is related to making sense of the transition to college. It is critical to highlight that interactive writing technologies alone do not autonomously create supportive communities (Brier, 2012; Fabricant & Brier, in press). Rather, supportive communities develop when fostered by the work of educators who purposefully design curricula that integrates these tools, and through the work of students who thoughtfully use these tools to write comments.
Instructors intent on creating writing communities may be interested to learn that the highly interactive blogging medium was better suited for fostering sustained, thoughtful and engaged student writing over time as compared to the word-processing medium. However, word-processing may be better suited for one time writing activities as it appears to encourage greater fluency and in the case of a single writing assignment it did not appear to differ from blogging in any other linguistic measure.

Over time the bloggers developed a culture of commenting where peer readers offered supportive comments to narrators who expressed high rates of intense language and psychological states. This pattern of commenting may explain one of the ways that interactive writing media fosters the development of supportive digital networks. Previous work has found that support networks may be especially beneficial for students from underrepresented communities who are often the first in their family to attend college. Such support networks, historically comprised of family and friends, have been shown to be of critical importance for black and Latino first year students, and the presence of these networks has been linked to improved retention and academic success rates (Elkins, Braxton, & James, 2000; Keup & Barfieo, 2005 Thomas, 2000). Blogging networks may offer one way to generate a digital support network for students most in need of such psychological and social supports.

In the current study the digital network served as a peer support system for students who expressed the most intense thoughts and emotions about their transition experience. While a professor or guidance counselor can only offer comments to one student at a time, the interactive writing network empowered students to rally in support of their peers who expressed the most need. Furthermore, faculty and staff in the program of study reported students shared stories and emotions on the blog, which they never communicated in person, despite having ample
opportunity to share during class and counseling sessions throughout the year. While the current work focused on the way students used the interactive blogging network as compared to a word processor, future work could also explore how the media influenced faculty-student interactions. Administrators and practitioners who design first-year curricula may find that establishing similar interactive writing communities provides their students with an important tool for making sense of the college transition and for developing supportive networks.

For students writing in both media served as a tool that helped them to make sense of their first months of college. The writing activity served as a means for students to work through challenges as they adjusted to the context of an academic community. For students who blogged, this community was interactive. The interactive features of the blog created the possibility for the development of a network of peers, who over time developed a culture of commenting. This work shows there was not a single trajectory for students’ development. Rather, students working in the different media developed different writing styles marked by their distinct uses of cognitive and intensifying language. Psychological development occurs through activities, in this case writing and commenting. How students’ writing changed indicates differences in how students’ in the two media were developing different ways of thinking about their college transition.

Future Research Directions

While the findings and implications from the current study may be clear, key questions related to narrator-audience relations in interactive media demand further exploration. These questions relate to three main domains: First, in the current study one approach to narrative analysis was used to focus on rates of evaluative devices. What other trends in the data might be apparent if other analyses were called upon? Second, what might a more detailed analysis of the
comments tell researchers and practitioners about patterns and uses of commenting in the blogging medium? Third, given the multitude of interactive writing media, from Facebook and Twitter to blogging platforms such as Medium, how might other writing media with different potentials for narrator-audience interaction influence writing and commenting styles? Finally, taken together how might these three questions for future research relate to issues of college retention and academic achievement for students from historically underrepresented backgrounds?

For the current study a significance analysis (Daiute, 2014; Lucic, 2013) was used because the research questions focused on evaluative language use, and subsequent sense-making processes students engaged in as they wrote about the transition to college. This analysis was fine tuned to code words and, in some instances, characters in the context of narratives. Future researchers might consider more holistic analyses that could offer insights into other changes in students’ writing over time and between the media. Exploring the scripts or plots of each narrative could help develop further understanding of students’ transition experiences and the ways that students wrote and made sense of their transition differently in the two media. Might students not only use different linguistic tools in the two media but also employ distinct scripts too? For example, might the interactive potential of the blog influence narrators to tell more similar story scripts than students who word-processed and could not interact with their peer audience? Or, as some scholars have suggested, might the more interactive digital media encourage increased individualism that will result in a wider variety of narrative scripts on the blog as opposed to with the word-processor (Manago, Guan, & Greenfield, 2015)?

Student comments, as well, warrant further study and analysis. Depending on the specific research question, comments could be coded on the word level or the holistic level. For example,
researchers could explore if in addition to linguistic predictors of comments, there might be a specific type of blogged narrative script that was more likely to elicit peer comments. Furthermore, of the comments themselves, what was the composition of these comments, from their average length to their linguistic characteristics? How might these characteristics inform researchers and practitioners about the ways that comments are written and used to support peers? And what might we learn about the comment authors by studying their comments and commenting patterns?

In the current study, the audience, and therefore the commenting was restricted to peers in the SEEK program’s cohort. In addition, all narrators and commenters used pseudonyms. Would the patterns of writing and commenting hold if these network settings were changed? What if the blog were open to the entire campus community, or beyond and what if students wrote using their real names?

How might expanding the audience to the larger campus community change the narrator-audience relations and in what ways might this influence narrators writing, thinking, and sense-making processes? If the blog were open to the campus community would the narrators be even more motivated to write and express their transition experiences? Or would the narrators be intimidated by the potential for unknown, and potentially powerful, audiences such as upper class members and faculty who could read and comment on the transition narratives?

And what if the network were expanded to include family members as well? Researchers have noted that connections with family are of critical importance especially for first-year Latino students, and have even suggested that colleges organize systematic communication with parents including parental visits to campus (Elkins, Braxton, & James, 2000). Might a blog open to students’ family members serve as one method to systematize communication and would this
prove to be an important tool for maintaining the critical family support network? How might such modifications shift the narrator-audience relations and could researchers document these changes using similar methods to those employed in the current study?

Though blogs are prolific, there are many other interactive writing media and thus many other narrator-audience relations that warrant study. The current study showed that the potential for interaction matters and influences the ways that narrators think, feel and make sense of their transition to college. How might the characteristics of other interactive writing media influence narrators writing, thinking and sense-making processes? Furthermore, what are the relationships like between narrators and audiences in these media? The current work showed that the highly interactive blogging media influenced narrators to use more intensifying language and psychological state words than they did in the less interactive word processing media. The possibilities for commenting on the blog resulted in changes in student writing. By comparing narrator-audience relations between and within media with differing potentials for audience interaction researchers may determine the ways that specific elements of interactivity contributed to targeted changes in writing and commenting patterns and related thinking, feeling, and sense-making processes. For example, blogging medium in the current study only allowed reader comments at the end of a post. However, other interactive writing media allow readers to comment on the paragraph or line level. How might changes in commenting capabilities interact with the way narrators write and readers comment?

Perhaps the most important future research direction relates to the disproportionately high college attrition rate for students from low-income and historically underrepresented backgrounds (Clark, 2005; Hurtrado, Carter, & Spuler, 1996; Hurtado & Carter, 1997; Terenzini et al., 1994; Zhang & Smith, 2011). At CUNY, even with added supports like counseling and
tuition remission, the first-year attrition rate for low-income students in special programs like SEEK is 10% higher than that of the general population, with degree rates reflecting a similar disparity (CUNY Office of Institutional Research and Assessment, 2014). Recent writing interventions using a word processor have found exciting gains, such as increased GPA and retention rates, for students entering into new academic contexts (Kuh, 2008; Walton & Cohen, 2011; Walton, Logel, Peach, Spencer, & Zanna, 2013; Young & Hopp, 2014). These gains may have been due to the ways that students used writing to make sense of new educational contexts by engaging with the college environment (social and physical) using a range of expressive language devices and media than peers who did not write about the transition experience. Future researchers must investigate if there is a relationship between sense-making language and academic achievement rates for students in the cohort of this study. If so, could higher levels of intensity indicate that students were more effectively using the writing activity to figure out their transition to college? And might these students actually be engaging differently with their transition and subsequently be able to focus on their studies and do better academically than peers who did not use as high rates of intensifying language or peers in previous cohorts who did not write about their transition experiences at all? Or is it possible that such high levels of intensity should be interpreted as warning signals from students in social and academic distress? These questions are likely of great interest to researchers of college development and to educators in the field.

As the counselors in the program of study made clear, if specific evaluative language from students could be linked to measures of academic achievement, writing programs, such as the one described in this dissertation, could be used not only as tools to encourage students to
make sense of their transition but also as a critical resource for counselors to identify and support students most in need during the transition to college.
Appendix A

Media Use Survey
This College Story Media Survey II

* 1. What's your pseudonym?

* 2. Do you have a Facebook account?
   ☐ Yes   ☐ No

This College Story Media Survey II

* 3. How often do you use Facebook?
   ☐ Many times daily   ☐ One time per day   ☐ One time per week   ☐ One time per month

* 4. Do you have a Twitter account?
   ☐ Yes   ☐ No

This College Story Media Survey II

* 5. How often do you use Twitter?
   ☐ Many times daily   ☐ One time per day   ☐ One time per week   ☐ One time per month

* 6. Do you have a blog? (not counting the one you may have started here!)
   ☐ Yes   ☐ No

This College Story Media Survey II

* 7. How often do you blog?
   ☐ Many times daily   ☐ One time per day   ☐ One time per week   ☐ One time per month

* 8. How often do you write comments on blogs or other online forums?
   ☐ At least once a day   ☐ At least once a week   ☐ At least once a month   ☐ I rarely write comments (less than once a month)
8. Do you use any other type of social media?
   ☐ Yes ☐ No

This College Story Media Survey II

10. What are the names of the other social media you use?
    

11. On which device do you use these various media most often?
    ☐ Phone ☐ Computer ☐ Tablet ☐ I rarely use social media (less than once a month)

   Other (please specify)

12. How often do you use a word processor (like MsWord)?
   ☐ Many times daily ☐ One time per day ☐ One time per week ☐ One time per month ☐ less than once per month

13. Do you have a computer to use at home?
   ☐ Yes ☐ No

14. Where do you use a computer most often?
   ☐ Home ☐ School ☐ Library

   Other (please specify)

15. How did you feel about the writing activity this semester?
   ☐ I really disliked it
   ☐ I disliked it
   ☐ I liked it
   ☐ I really liked it
16. Do you think writing about your transition was helpful?
- No, it was not helpful at all
- Yes, it helped a little
- Yes, it helped a lot

Other (please specify)

17. Can you reflect on your writing experience this semester? What did or didn't you like about it? Can you suggest any changes for future students who participate in this course? Do you think writing helped you in any way?

18. Would you be interested in participating in a free blogging workshop at Baruch?
- Yes
- No
20. Please indicate your gender.
   - Female
   - Male
   - Other
   Other (would you like to specify?)

21. What is your first language?
   

22. Do you speak or read any other languages fluently?
   

23. Were you born in the United States?
   - Yes
   - No

24. What is the highest level of education either of your parents or guardians completed?
   - No schooling completed
   - Nursery school to 8th grade
   - High school graduate, diploma or the equivalent (for example GED)
   - Trade/technical/vocational training
   - Associate degree
   - Bachelor's degree
   - Master's degree
   - Professional degree
   - Doctorate degree
25. Please indicate your ethnic/racial group identification (select as many as apply).

- [ ] Hispanic, Latino, Spanish
- [ ] Black or African-American (non-Hispanic)
- [ ] American Indian or other Native American
- [ ] Asian, Asian-American or Pacific Islander
- [ ] South Asian
- [ ] White, European-American (non-Hispanic)

Other (please specify)

______________________________
Appendix B

Oral Script adapted from Walton and Cohen (2011)

Hi! My name is ____.

OK, now let me tell you a bit about this study. We are interested in students’ college experiences and attitudes. The first purpose is to better understand your personal experiences and attitudes here at [school name]. The second purpose of this study is to help us provide incoming [school name] students next year and in the years to come with more accurate expectations about what college is like. As you may know, the transition to college can go a lot smoother if you know what to expect. (As you can tell, the two purposes are very much related.). Does that make sense?

<makes sense>

Great. I want you to take some time and reflect on your own experiences as a freshman here at [school name]. In a moment I will ask you to write an essay about why people’s experience in college develops as it does. There are instructions here (the prompt), but the goal is to really understand how people’s experience in college changes over time. In addition, next fall we plan to take excerpts of what people write here and show them to students coming to [school name] next year or in subsequent years so they will know what their experience is likely to be like. So is this something you could do?

<assent>

Great. So again, we’d like you to write an essay about why you think people’s experience in college changes in the way the prompt describes. And be sure to illustrate your essay with examples from your own experience at [school name]. I’ll leave the survey here with you so you can look back on it as you work. Go ahead and take your time and work on this as long as you want. I am sure that the students who read about your experiences will appreciate the effort that you put in. What is important here is that you get your ideas across, so don’t worry so much about spelling or grammar or the quality of the writing. Take your time with this, but try to finish up within half an hour. If you need more time after that, you’ll have some time to polish your essay later. But for now focus on just expressing your thoughts and feelings without too much attention to the writing quality.

<handout and read prompt aloud>
Appendix C
Pseudo Child Theme
Note: I modified the theme output to remove each instance of an email being displayed so that author emails were not visible to other authors. Anyone who wishes to use this child theme should be aware that these theme modifications were not designed to override plugins.

**style.css**

/*
Theme Name:   Pseudo (Twenty Thirteen Child)
Description: A Twenty Thirteen Child theme that does not display author emails on front end or comment back end
Author:       Philip Kreniske
Author URI:   http://opencuny.org/kreniske
Template:     twentythirteen
Version:      1.0
*/

/* @phil and joe changed this to make the author name appear */
.single-author .entry-meta .author {
    display: inline;
}

/* @phil - widget updates */
div#page .nlposts-ulist-container .nlposts-ulist-wtitle {
    color: #FFF;
    font: italic 300 20px "Source Sans Pro", Helvetsica, sans-serif;
    margin: 0px 0px 10px;
    text-transform: none;
}

div#page #tertiary .nlposts-ulist-container .nlposts-ulist-wtitle {
    color: #141412;
}

body.single div#tertiary {
    display: none;
}

body.site-footer div#secondary aside.nlposts-widget {
    display: none;
}

functions.php
<?php
add_action( 'wp_enqueue_scripts', function () {
    wp_enqueue_style( 'parent-style', get_template_directory_uri() . '/style.css' );
});

//user email visibility
add_filter('comment_email', function ($email) {
    if (current_user_can('create_users')) {
        return $email;
    }
    return '';
});

//no email in comment section
add_filter('comment_notification_text', function($notify_message, $comment_id) {
    if ('trackback' != $comment->comment_type && 'pingback' != $comment->comment_type) {
        $comment = get_comment( $comment_id);
        if (empty( $comment ))
            return false;
        $post    = get_post( $comment->comment_post_ID);
        $notify_message = sprintf( __('New comment on your post "%s" '), $post->post_title ) . "\n"
            /* translators: 1: comment author, 2: author IP, 3: author domain */
        $notify_message .= sprintf( __('Author : %1$s'), $comment->comment_author ) . "\n"
        $notify_message .= __('Comment: ') . "\n"
        $notify_message .= __('You can see all comments on this post here: ') . get_permalink($comment->comment_post_ID) . "\n"
        $notify_message .= sprintf( __('Permalink: %s'), get_comment_link($comment_id) ) . "\n"
    }
    return $notify_message;
},10,2);

add_filter('comment_notification_headers', function($message_headers, $comment_id) {
    $wp_email = 'wordpress@' . preg_replace('#^www\.#', '', strtolower($_SERVER['SERVER_NAME']));
    $message_headers = "$wp_email\n" . "Content-Type: text/plain; charset=" . get_option('blog_charset') . "\n";
    return $message_headers;
},10,2);
Pseudo Child Theme Icon

Note: This is an icon that could be displayed in WordPress forum to represent the child theme used in this project.
Appendix D

List of Common Words and Frequent Evaluative Category Codes

Affect:=feel*|felt|annoy*|frustrat*|fear*|sad*|happy|happi*|worr*|stress*|nervous*|want
|hope|hate|glad |NERVOUS|HAPPY|try
interest*|tragic|serious|fun|laughed|cry|socialize|attempt|making|made|{(friends)|struggling|
(could also be cog)|should|goal (like my goal is...)|dream (also could be cog|face(ing) - { could also be
intense double code})|procrastinate|Thank you for...

“dream school” dream is affect
code these phrases as one affect: look forward | feel like | used to

Often “belief” and “used to” as in getting used to, expected | boring
favorite

have to, supposed to = affect
Know – if it like getting to know people (but usually know is cog)
Sometimes experience: e.g.: One thing i have experienced in college that they give students lot
of opportunities.
Casual:= Because | because | moreover | however | furthermore | for example | therefore | but

In order | since | when | then | so | since | another | firstly | secondly | finally | overall

“as bad as” casual connect and qualifier

NOTE- as much as
Cog:= know* | learn* | think* | idea | confus* | find | realize* | thought* | wonder* | manage* | remem
ber* | understand | compare | seems? | Struggling (could be affect if emo
struggle) | forget | focused | adapted | appear | used to | choose | check | guess | interesting
(could be affect too depending)
AND to see, or able to = cog

Sometimes “to make sure” #4,1 make sure I am in the correct room
Possibly believe but beliefs are usually affect
Sometimes words like work and read but usually in this study these are not coded as “cog”

Intense:=
every*|every|nothing|even|very|especially|extreme*|always|definitely|every*|only|any|ob
viously|right now|Wow|! | For my experience|greatest
good luck
Quotes“” “ and Parenthesis ( ) code each one as it’s own intensifier. “ is one and the “ is another
! = 1 intense, !! = 2 intense, !!! = 3 intense, any more just code as 4, unless it is over ten! Then
give it a 5 intense code
Also anything in bold or caps, per word. LIKE THIS (code the first letter caps L as one intense, the
second letter as 2 intense and the whole word as another intense LIKE = 3 intense or the T in
THIS as 1 intense, H as 2nd intense and the whole word as 3rd intense i.e. THIS = 3 intense)
For letter repetition code the first three repeats, i.e. “nooooooo” or “noooo” would both be 3 intensifiers, while “nooo” would be coded as 2 intensifiers (for the 2 extra “o”s)

For double letter repetition heeeeeeeyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyy
Appendix E

HLM Equations

Program: HLM 7 Hierarchical Linear and Nonlinear Modeling
Authors: Stephen Raudenbush, Tony Bryk, & Richard Congdon
Publisher: Scientific Software International, Inc. (c) 2010
techsupport@ssicentral.com
www.ssicentral.com

Module: HLM2.EXE (7.01.21202.1001)
Specifications for this HLM2 run

Problem Title: Fluency (FLUENCY) intercept time 4

The data source for this run = 2015-5-20
The command file for this run = C:\Users\PKRENI~1\AppData\Local\Temp\whelmtemp.hlm
Output file name = U:\1dstats\Latest Files\2015-5-20 HLM Media\hlm2.html
The maximum number of level-1 units = 194
The maximum number of level-2 units = 97
The maximum number of iterations = 100

Method of estimation: restricted maximum likelihood

The outcome variable is FLUENCY

Summary of the model specified

Level-1 Model
\[ FLUENCY_{ij} = \beta_{0j} + \beta_{1j} \times (\text{TIME}_{ij}) + r_{ij} \]

Level-2 Model
\[ \beta_{0j} = \gamma_{00} + \gamma_{01} \times \text{MEDIA}_{j} + u_{0j} \]
\[ \beta_{1j} = \gamma_{10} + \gamma_{11} \times \text{MEDIA}_{j} + u_{1j} \]

Mixed Model
\[ FLUENCY_{ij} = \gamma_{00} + \gamma_{01} \times \text{MEDIA}_{j} + \gamma_{10} \times \text{TIME}_{ij} + \gamma_{11} \times \text{MEDIA}_{j} \times \text{TIME}_{ij} + u_{0j} + u_{1j} \times \text{TIME}_{ij} + r_{ij} \]

Run-time deletion has reduced the number of level-1 records to 176
Run-time deletion has reduced the number of level-2 groups to 93
Final Results - Iteration 26

Iterations stopped due to small change in likelihood function

\[ \sigma^2 = 6378.17601 \]

\[ \tau \]

\[
\begin{align*}
\text{INTRCPT1}, \beta_0 & \quad 2532.11141 & -2490.94053 \\
\text{TIME}, \beta_1 & \quad -2490.94053 & 7785.14281 \\
\end{align*}
\]

\[ \tau \text{ (as correlations)} \]

\[
\begin{align*}
\text{INTRCPT1}, \beta_0 & \quad 1.000 & -0.561 \\
\text{TIME}, \beta_1 & \quad -0.561 & 1.000 \\
\end{align*}
\]

<table>
<thead>
<tr>
<th>Random level-1 coefficient</th>
<th>Reliability estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTRCPT1, (\beta_0)</td>
<td>0.284</td>
</tr>
<tr>
<td>TIME, (\beta_1)</td>
<td>0.379</td>
</tr>
</tbody>
</table>

Note: The reliability estimates reported above are based on only 83 of 93 units that had sufficient data for computation. Fixed effects and variance components are based on all the data.

The value of the log-likelihood function at iteration 26 = \(-1.066275\times10^3\)

Final estimation of fixed effects:

<table>
<thead>
<tr>
<th>Fixed Effect</th>
<th>Coefficient</th>
<th>Standard error</th>
<th>(t)-ratio</th>
<th>Approx. d.f.</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>For INTRCPT1, (\beta_0)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>INTRCPT2, (\gamma_0)</td>
<td>389.089625</td>
<td>16.654234</td>
<td>23.363</td>
<td>91</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>MEDIA, (\gamma_{01})</td>
<td>-52.698840</td>
<td>20.859207</td>
<td>-2.526</td>
<td>91</td>
<td>0.013</td>
</tr>
<tr>
<td>For TIME slope, (\beta_1)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>INTRCPT2, (\gamma_0)</td>
<td>-153.775940</td>
<td>25.453374</td>
<td>-6.041</td>
<td>91</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>MEDIA, (\gamma_{11})</td>
<td>114.319138</td>
<td>31.978620</td>
<td>3.575</td>
<td>91</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>

Final estimation of fixed effects
(with robust standard errors)

<table>
<thead>
<tr>
<th>Fixed Effect</th>
<th>Coefficient</th>
<th>Standard error</th>
<th>(t)-ratio</th>
<th>Approx. d.f.</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>For INTRCPT1, (\beta_0)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>INTRCPT2, (\gamma_0)</td>
<td>389.089625</td>
<td>18.793868</td>
<td>20.703</td>
<td>91</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>MEDIA, (\gamma_{01})</td>
<td>-52.698840</td>
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</tr>
<tr>
<td>For TIME slope, (\beta_1)</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>INTRCPT2, (\gamma_0)</td>
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<td>91</td>
<td>&lt;0.001</td>
</tr>
<tr>
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<td>0.002</td>
</tr>
</tbody>
</table>
### Final estimation of variance components

<table>
<thead>
<tr>
<th>Random Effect</th>
<th>Standard Deviation</th>
<th>Variance Component</th>
<th>d.f.</th>
<th>$\chi^2$</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTRCPT1, $u_0$</td>
<td>50.32009</td>
<td>2532.11141</td>
<td>81</td>
<td>117.72457</td>
<td>0.005</td>
</tr>
<tr>
<td>TIME slope, $u_t$</td>
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<td>81</td>
<td>131.41054</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>level-1, $r$</td>
<td>79.86348</td>
<td>6378.17601</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: The chi-square statistics reported above are based on only 83 of 93 units that had sufficient data for computation. Fixed effects and variance components are based on all the data.

### Statistics for current covariance components model

Deviance = 2132.550997
Number of estimated parameters = 4
Specifications for this HLM2 run
Problem Title: Fluency (FLUENCY) intercept Time 1

The data source for this run = 2015-5-20 Int 0 and 1
The command file for this run = C:UsersPKRENI~1AppDataLocalTempwhlmttemp.hlm
Output file name = U\1dstats\Latest\Files\2015-5-20 HLM Media\hlm2.html
The maximum number of level-1 units = 194
The maximum number of level-2 units = 97
The maximum number of iterations = 100

Method of estimation: restricted maximum likelihood

The outcome variable is FLUENCY

**Summary of the model specified**

**Level-1 Model**

\[ FLUENCY_{ij} = \beta_{0j} + \beta_{1j}(TIME_{ij}) + r_{ij} \]

**Level-2 Model**

\[ \beta_{0j} = \gamma_{00} + \gamma_{01}(MEDIA_{j}) + u_{0j} \]
\[ \beta_{1j} = \gamma_{10} + \gamma_{11}(MEDIA_{j}) + u_{1j} \]

**Mixed Model**

\[ FLUENCY_{ij} = \gamma_{00} + \gamma_{01}(MEDIA_{j}) \]
\[ + \gamma_{10}(TIME_{ij}) + \gamma_{11}(MEDIA_{j})(TIME_{ij}) \]
\[ + u_{0j} + u_{1j}(TIME_{ij}) + r_{ij} \]

Run-time deletion has reduced the number of level-1 records to 176
Run-time deletion has reduced the number of level-2 groups to 93

**Final Results - Iteration 36**

Iterations stopped due to small change in likelihood function

\[ \sigma^2 = 6145.62708 \]

\[ \tau \]

<table>
<thead>
<tr>
<th></th>
<th>[15545.63060, -10540.89964]</th>
<th>[8287.34981]</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTRCPT1,(\beta_0)</td>
<td>[15545.63060, -10540.89964]</td>
<td>[8287.34981]</td>
</tr>
<tr>
<td>TIME,(\beta_1)</td>
<td>[ -10540.89964, 8287.34981]</td>
<td></td>
</tr>
</tbody>
</table>

\[ \tau \] (as correlations)

<table>
<thead>
<tr>
<th></th>
<th>[1.000, -0.929]</th>
<th>[ -0.929, 1.000]</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTRCPT1,(\beta_0)</td>
<td>[1.000, -0.929]</td>
<td>[ -0.929, 1.000]</td>
</tr>
<tr>
<td>TIME,(\beta_1)</td>
<td>[ -0.929, 1.000]</td>
<td>[1.000, -0.929]</td>
</tr>
</tbody>
</table>
HOW INTERACTIVE WRITING MEDIA INFLUENCED

<table>
<thead>
<tr>
<th>Random level-1 coefficient</th>
<th>Reliability estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTRCPT1, ( \beta_0 )</td>
<td>0.717</td>
</tr>
<tr>
<td>TIME, ( \beta_1 )</td>
<td>0.403</td>
</tr>
</tbody>
</table>

Note: The reliability estimates reported above are based on only 83 of 93 units that had sufficient data for computation. Fixed effects and variance components are based on all the data.

The value of the log-likelihood function at iteration 36 = -1.066276E+003

**Final estimation of fixed effects:**

<table>
<thead>
<tr>
<th>Fixed Effect</th>
<th>Coefficient</th>
<th>Standard error</th>
<th>t-ratio</th>
<th>Approx. d.f.</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>For INTRCPT1, ( \beta_0 )</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>INTRCPT2, ( \gamma_0 )</td>
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<td>25.984468</td>
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</tr>
<tr>
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<td>32.545400</td>
<td>-5.132</td>
<td>91</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>For TIME slope, ( \beta_1 )</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>INTRCPT2, ( \gamma_0 )</td>
<td>-153.785127</td>
<td>25.477659</td>
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<td>&lt;0.001</td>
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<tr>
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</tr>
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</table>

**Final estimation of fixed effects (with robust standard errors)**

<table>
<thead>
<tr>
<th>Fixed Effect</th>
<th>Coefficient</th>
<th>Standard error</th>
<th>t-ratio</th>
<th>Approx. d.f.</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>For INTRCPT1, ( \beta_0 )</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>INTRCPT2, ( \gamma_0 )</td>
<td>542.869751</td>
<td>34.627794</td>
<td>15.677</td>
<td>91</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>MEDIA, ( \gamma_{01} )</td>
<td>-167.025450</td>
<td>37.412573</td>
<td>-4.464</td>
<td>91</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>For TIME slope, ( \beta_1 )</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>INTRCPT2, ( \gamma_0 )</td>
<td>-153.785127</td>
<td>32.081653</td>
<td>-4.794</td>
<td>91</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>MEDIA, ( \gamma_{11} )</td>
<td>114.341236</td>
<td>35.555629</td>
<td>3.216</td>
<td>91</td>
<td>0.002</td>
</tr>
</tbody>
</table>

**Final estimation of variance components**

<table>
<thead>
<tr>
<th>Random Effect</th>
<th>Standard Deviation</th>
<th>Variance Component</th>
<th>d.f.</th>
<th>( \chi^2 )</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTRCPT1, ( u_0 )</td>
<td>124.68212</td>
<td>15545.63060</td>
<td>81</td>
<td>288.78543</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>TIME slope, ( u_1 )</td>
<td>91.03488</td>
<td>8287.34981</td>
<td>81</td>
<td>136.38422</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>level-1, ( r )</td>
<td>78.39405</td>
<td>6145.62708</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: The chi-square statistics reported above are based on only 83 of 93 units that had sufficient data for computation. Fixed effects and variance components are based on all the data.

**Statistics for current covariance components model**

Deviance = 2132.551002

Number of estimated parameters = 4
Specifications for this HLM2 run
Problem Title: Cognitive Rate (COGNITIVE) Intercept Time 4

The data source for this run = 2015-5-20
The command file for this run = C:\Users\PKRENI~1\AppData\Local\Temp\whlmtemp.hlm
Output file name = U:\1dstats\Latest Files\2015-5-20 HLM Media\hlm2.html
The maximum number of level-1 units = 194
The maximum number of level-2 units = 97
The maximum number of iterations = 100

Method of estimation: restricted maximum likelihood

The outcome variable is COGNITIVE

Summary of the model specified

Level-1 Model

\[ COGNITIVE_{ij} = \beta_0 + \beta_1 \times (TIME_{ij}) + r_{ij} \]

Level-2 Model

\[ \beta_0 = \gamma_{00} + \gamma_{01} \times (MEDIA_i) + u_{0j} \]
\[ \beta_1 = \gamma_{10} + \gamma_{11} \times (MEDIA_i) + u_{1j} \]

Mixed Model

\[ COGNITIVE_{ij} = \gamma_{00} + \gamma_{01} \times MEDIA_i \\
+ \gamma_{10} \times TIME_{ij} + \gamma_{11} \times MEDIA_i \times TIME_{ij} \\
+ u_{0j} + u_{1j} \times TIME_{ij} + r_{ij} \]

Run-time deletion has reduced the number of level-1 records to 178
Run-time deletion has reduced the number of level-2 groups to 93

Final Results - Iteration 41

Iterations stopped due to small change in likelihood function

\[ \sigma^2 = 1.37285 \]

\[ \tau \]

<table>
<thead>
<tr>
<th></th>
<th>( \beta_0 )</th>
<th>( \beta_1 )</th>
<th>Reliability estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTRCPT1, ( \beta_0 )</td>
<td>0.30864</td>
<td>0.38815</td>
<td></td>
</tr>
<tr>
<td>TIME, ( \beta_1 )</td>
<td>0.38815</td>
<td>0.59794</td>
<td></td>
</tr>
</tbody>
</table>

\[ \tau \] (as correlations)

<table>
<thead>
<tr>
<th></th>
<th>( \beta_0 )</th>
<th>( \beta_1 )</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTRCPT1, ( \beta_0 )</td>
<td>1.000</td>
<td>0.904</td>
</tr>
<tr>
<td>TIME, ( \beta_1 )</td>
<td>0.904</td>
<td>1.000</td>
</tr>
</tbody>
</table>

Random level-1 coefficient  Reliability estimate
Note: The reliability estimates reported above are based on only 85 of 93 units that had sufficient data for computation. Fixed effects and variance components are based on all the data.

The value of the log-likelihood function at iteration 41 = -2.945785E+002

### Final estimation of fixed effects:

<table>
<thead>
<tr>
<th>Fixed Effect</th>
<th>Coefficient</th>
<th>Standard Error</th>
<th>t-ratio</th>
<th>Approx. d.f.</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>For INTRCPT1, $\beta_0$</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>INTRCPT2, $\gamma_{j0}$</td>
<td>2.703066</td>
<td>0.229223</td>
<td>11.792</td>
<td>91</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>MEDIA, $\gamma_{l0}$</td>
<td>0.717183</td>
<td>0.287341</td>
<td>2.496</td>
<td>91</td>
<td>0.014</td>
</tr>
<tr>
<td>For TIME slope, $\beta_1$</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>INTRCPT2, $\gamma_{j1}$</td>
<td>-0.048747</td>
<td>0.322995</td>
<td>-0.151</td>
<td>91</td>
<td>0.880</td>
</tr>
<tr>
<td>MEDIA, $\gamma_{l1}$</td>
<td>0.729006</td>
<td>0.403615</td>
<td>1.806</td>
<td>91</td>
<td>0.074</td>
</tr>
</tbody>
</table>

### Final estimation of fixed effects (with robust standard errors)

<table>
<thead>
<tr>
<th>Fixed Effect</th>
<th>Coefficient</th>
<th>Standard Error</th>
<th>t-ratio</th>
<th>Approx. d.f.</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>For INTRCPT1, $\beta_0$</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>INTRCPT2, $\gamma_{j0}$</td>
<td>2.703066</td>
<td>0.224862</td>
<td>12.021</td>
<td>91</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>MEDIA, $\gamma_{l0}$</td>
<td>0.717183</td>
<td>0.283104</td>
<td>2.533</td>
<td>91</td>
<td>0.013</td>
</tr>
<tr>
<td>For TIME slope, $\beta_1$</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>INTRCPT2, $\gamma_{j1}$</td>
<td>-0.048747</td>
<td>0.331484</td>
<td>-0.147</td>
<td>91</td>
<td>0.883</td>
</tr>
<tr>
<td>MEDIA, $\gamma_{l1}$</td>
<td>0.729006</td>
<td>0.405937</td>
<td>1.796</td>
<td>91</td>
<td>0.076</td>
</tr>
</tbody>
</table>

### Final estimation of variance components

<table>
<thead>
<tr>
<th>Random Effect</th>
<th>Standard Deviation</th>
<th>Variance Component</th>
<th>d.f.</th>
<th>$\chi^2$</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTRCPT1, $u_0$</td>
<td>0.55556</td>
<td>0.30864</td>
<td>83</td>
<td>103.55570</td>
<td>0.063</td>
</tr>
<tr>
<td>TIME slope, $u_1$</td>
<td>0.77326</td>
<td>0.59794</td>
<td>83</td>
<td>97.55664</td>
<td>0.131</td>
</tr>
<tr>
<td>level-1, $r$</td>
<td>1.17169</td>
<td>1.37285</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: The chi-square statistics reported above are based on only 85 of 93 units that had sufficient data for computation. Fixed effects and variance components are based on all the data.

### Statistics for current covariance components model

Deviance = 589.156924

Number of estimated parameters = 4
Specifications for this HLM2 run

Problem Title: Cognitive Rate (COGNITIVE) Intercept Time 1

The data source for this run = cograt int 0 and 1
The command file for this run = C:\Users\PKRENI\AppData\Local\Temp\7\whltemp.hlm
Output file name = \workspaces.gc.cuny.edu\mywork\pkreniske\1dstats\RQ1\2015-5-20 HLM Media\hlm2.html

The maximum number of level-1 units = 178
The maximum number of level-2 units = 93
The maximum number of iterations = 100

Method of estimation: restricted maximum likelihood

The outcome variable is COGNITIVE Intercepts 0, 1

Summary of the model specified

Level-1 Model

$COGNITIVE_{ij} = \beta_{0j} + \beta_{1j} \times (TIME_{ij}) + r_{ij}$

Level-2 Model

$\beta_{0j} = \gamma_{00} + \gamma_{01} \times (MEDIA_{j}) + u_{0j}$
$\beta_{1j} = \gamma_{10} + \gamma_{11} \times (MEDIA_{j}) + u_{1j}$

Mixed Model

$COGNITIVE_{ij} = \gamma_{00} + \gamma_{01} \times MEDIA_{j}$
$+ \gamma_{10} \times TIME_{ij} + \gamma_{11} \times MEDIA_{j} \times TIME_{ij}$
$+ u_{0j} + u_{1j} \times TIME_{ij} + r_{ij}$

Final Results - Iteration 66

Iterations stopped due to small change in likelihood function

$\sigma^2 = 1.31236$

$\tau$

$INTRCPT1, \beta_0 \quad 0.19174 \quad -0.27090$
$TIME, \beta_1 \quad -0.27090 \quad 0.71795$

$\tau$ (as correlations)

$INTRCPT1, \beta_0 \quad 1.000 \quad -0.730$
$TIME, \beta_1 \quad -0.730 \quad 1.000$
### Random level-1 coefficient

<table>
<thead>
<tr>
<th>Coefficient</th>
<th>Reliability estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTRCPT1, $\beta_0$</td>
<td>0.127</td>
</tr>
<tr>
<td>TIME, $\beta_1$</td>
<td>0.215</td>
</tr>
</tbody>
</table>

Note: The reliability estimates reported above are based on only 85 of 93 units that had sufficient data for computation. Fixed effects and variance components are based on all the data. The value of the log-likelihood function at iteration 66 = -2.945785E+002.

### Final estimation of fixed effects:

<table>
<thead>
<tr>
<th>Fixed Effect</th>
<th>Coefficient</th>
<th>Standard error</th>
<th>t-ratio</th>
<th>Approx. d.f.</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>For INTRCPT1, $\beta_0$</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>INTRCPT2, $\gamma_{00}$</td>
<td>2.751808</td>
<td>0.216794</td>
<td>12.693</td>
<td>91</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>MEDIA, $\gamma_{01}$</td>
<td>-0.011813</td>
<td>0.270055</td>
<td>-0.044</td>
<td>91</td>
<td>0.965</td>
</tr>
<tr>
<td>For TIME slope, $\beta_1$</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>INTRCPT2, $\gamma_{10}$</td>
<td>-0.048713</td>
<td>0.322945</td>
<td>-0.151</td>
<td>91</td>
<td>0.880</td>
</tr>
<tr>
<td>MEDIA, $\gamma_{11}$</td>
<td>0.728960</td>
<td>0.403551</td>
<td>1.806</td>
<td>91</td>
<td>0.074</td>
</tr>
</tbody>
</table>

### Final estimation of fixed effects

(with robust standard errors)

<table>
<thead>
<tr>
<th>Fixed Effect</th>
<th>Coefficient</th>
<th>Standard error</th>
<th>t-ratio</th>
<th>Approx. d.f.</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>For INTRCPT1, $\beta_0$</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>INTRCPT2, $\gamma_{00}$</td>
<td>2.751808</td>
<td>0.233282</td>
<td>11.796</td>
<td>91</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>MEDIA, $\gamma_{01}$</td>
<td>-0.011813</td>
<td>0.277817</td>
<td>-0.043</td>
<td>91</td>
<td>0.966</td>
</tr>
<tr>
<td>For TIME slope, $\beta_1$</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>INTRCPT2, $\gamma_{10}$</td>
<td>-0.048713</td>
<td>0.331477</td>
<td>-0.147</td>
<td>91</td>
<td>0.883</td>
</tr>
<tr>
<td>MEDIA, $\gamma_{11}$</td>
<td>0.728960</td>
<td>0.405931</td>
<td>1.796</td>
<td>91</td>
<td>0.076</td>
</tr>
</tbody>
</table>
Final estimation of variance components

<table>
<thead>
<tr>
<th>Random Effect</th>
<th>Standard Deviation</th>
<th>Variance Component</th>
<th>d.f.</th>
<th>$\chi^2$</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTRCPT1, $u_0$</td>
<td>0.43788</td>
<td>0.19174</td>
<td>83</td>
<td>86.40496</td>
<td>0.377</td>
</tr>
<tr>
<td>TIME slope, $u_1$</td>
<td>0.84732</td>
<td>0.71795</td>
<td>83</td>
<td>102.05372</td>
<td>0.076</td>
</tr>
<tr>
<td>level-1, r</td>
<td>1.14558</td>
<td>1.31236</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: The chi-square statistics reported above are based on only 85 of 93 units that had sufficient data for computation. Fixed effects and variance components are based on all the data.

Statistics for current covariance components model

Deviance = 589.156950
Number of estimated parameters = 4
Specifications for this HLM2 run
Problem Title: Affect intercept Time 4

The data source for this run = affect Intercept Time 4
The command file for this run = C:\Users\PKRENI~1\AppData\Local\Temp\whlmtemp.hlm
Output file name = U:1dstats\RQ1\2015-5-20 HLM Media\hlm2.html
The maximum number of level-1 units = 194
The maximum number of level-2 units = 97
The maximum number of iterations = 100

Method of estimation: restricted maximum likelihood

The outcome variable is AFFECT

Summary of the model specified

Level-1 Model

\[ \text{AFFECT}_{it} = \pi_{0i} + \pi_{1i}(\text{TIME}_{it}) + e_{it} \]

Level-2 Model

\[ \pi_{0i} = \beta_{00} + \beta_{01}(\text{MEDIA}_{i}) + r_{0i} \]
\[ \pi_{1i} = \beta_{10} + r_{1i} \]

Mixed Model

\[ \text{AFFECT}_{it} = \beta_{00} + \beta_{01}(\text{MEDIA}_{i}) + \beta_{10}(\text{TIME}_{it}) + r_{0i} + r_{1i}(\text{TIME}_{it}) + e_{it} \]

Run-time deletion has reduced the number of level-1 records to 178
Run-time deletion has reduced the number of level-2 groups to 93

Final Results - Iteration 81

Iterations stopped due to small change in likelihood function

\[ \sigma^2 = 2.64832 \]

\[ \tau \]
\[ \text{INTRCPT1}, \pi_0 \quad 0.23537 \quad -0.17997 \]
\[ \text{TIME}, \pi_1 \quad -0.17997 \quad 0.34043 \]

\[ \tau \text{ (as correlations)} \]
\[ \text{INTRCPT1}, \pi_0 \quad 1.000 \quad -0.636 \]
HOW INTERACTIVE WRITING MEDIA INFLUENCED TIME, \( \pi_1 \) -0.636 1.000

<table>
<thead>
<tr>
<th>Random level-1 coefficient</th>
<th>Reliability estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTRCPT1, ( \pi_0 )</td>
<td>0.082</td>
</tr>
<tr>
<td>TIME, ( \pi_1 )</td>
<td>0.060</td>
</tr>
</tbody>
</table>

Note: The reliability estimates reported above are based on only 85 of 93 units that had sufficient data for computation. Fixed effects and variance components are based on all the data.

The value of the log-likelihood function at iteration 81 = -3.552696E+002

**Final estimation of fixed effects:**

<table>
<thead>
<tr>
<th>Fixed Effect</th>
<th>Coefficient</th>
<th>Standard error</th>
<th>t-ratio</th>
<th>Approx. d.f.</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>For INTRCPT1, ( \pi_0 )</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>INTRCPT2, ( \beta_{00} )</td>
<td>5.027005</td>
<td>0.261399</td>
<td>19.231</td>
<td>91</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>MEDIA, ( \beta_{01} )</td>
<td>0.076646</td>
<td>0.295978</td>
<td>0.259</td>
<td>91</td>
<td>0.796</td>
</tr>
<tr>
<td>For TIME slope, ( \pi_1 )</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>INTRCPT2, ( \beta_{10} )</td>
<td>0.005298</td>
<td>0.252252</td>
<td>0.021</td>
<td>92</td>
<td>0.983</td>
</tr>
</tbody>
</table>

**Final estimation of fixed effects**
**(with robust standard errors)**

<table>
<thead>
<tr>
<th>Fixed Effect</th>
<th>Coefficient</th>
<th>Standard error</th>
<th>t-ratio</th>
<th>Approx. d.f.</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>For INTRCPT1, ( \pi_0 )</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>INTRCPT2, ( \beta_{00} )</td>
<td>5.027005</td>
<td>0.238822</td>
<td>21.049</td>
<td>91</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>MEDIA, ( \beta_{01} )</td>
<td>0.076646</td>
<td>0.272173</td>
<td>0.282</td>
<td>91</td>
<td>0.779</td>
</tr>
<tr>
<td>For TIME slope, ( \pi_1 )</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>INTRCPT2, ( \beta_{10} )</td>
<td>0.005298</td>
<td>0.250200</td>
<td>0.021</td>
<td>92</td>
<td>0.983</td>
</tr>
</tbody>
</table>

**Final estimation of variance components**

<table>
<thead>
<tr>
<th>Random Effect</th>
<th>Standard Deviation</th>
<th>Variance Component</th>
<th>d.f.</th>
<th>( \chi^2 )</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTRCPT1, ( r_0 )</td>
<td>0.48515</td>
<td>0.23537</td>
<td>83</td>
<td>93.16736</td>
<td>0.209</td>
</tr>
<tr>
<td>TIME slope, ( r_1 )</td>
<td>0.58347</td>
<td>0.34043</td>
<td>84</td>
<td>90.80667</td>
<td>0.287</td>
</tr>
<tr>
<td>level-1, ( e )</td>
<td>1.62737</td>
<td>2.64832</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: The chi-square statistics reported above are based on only 85 of 93 units that had sufficient data for computation. Fixed effects and variance components are based on all the data.
Statistics for current covariance components model

Deviance = 710.539202
Number of estimated parameters = 4
Specifications for this HLM2 run

Problem Title: Affect intercept Time 1

The data source for this run = affect Intercept time 1
The command file for this run = C:\Users\PKRENI~1\AppData\Local\Temp\whlmtemp.hlm
Output file name = U:\1dstats\RQ1\2015-5-20 HLM Media\hlm2.html
The maximum number of level-1 units = 194
The maximum number of level-2 units = 97
The maximum number of iterations = 100

Method of estimation: restricted maximum likelihood

The outcome variable is AFFECT

Summary of the model specified

Level-1 Model

\[ AFFECT_{it} = \pi_{0i} + \pi_{1i}TIME_{it} + e_{it} \]

Level-2 Model

\[ \pi_{0i} = \beta_{00} + \beta_{01}MEDIA_i + r_{0i} \]
\[ \pi_{1i} = \beta_{10} + r_{1i} \]

Mixed Model

\[ AFFECT_{it} = \beta_{00} + \beta_{01}MEDIA_i + \beta_{10}TIME_{it} + r_{0i} + r_{1i}TIME_{it} + e_{it} \]

Run-time deletion has reduced the number of level-1 records to 178
Run-time deletion has reduced the number of level-2 groups to 93

Final Results - Iteration 96

Iterations stopped due to small change in likelihood function

\[ \sigma^2 = 2.59069 \]

\[ \tau \]

INTRCPT1,\pi_{0}  0.98518  -0.56285
TIME,\pi_{1}  -0.56285  0.44196

\[ \tau \text{ (as correlations)} \]
HOW INTERACTIVE WRITING MEDIA INFLUENCED

\[
\begin{align*}
\text{INTRCPT1}, & \quad \pi_0 & 1.000 & -0.853 \\
\text{TIME}, & \quad \pi_1 & -0.853 & 1.000 \\
\end{align*}
\]

Random level-1 coefficient	Reliability estimate

<table>
<thead>
<tr>
<th>Random Effect</th>
<th>Coefficient</th>
<th>Standard error</th>
<th>t-ratio</th>
<th>Approx. d.f.</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTRCPT1, π₀</td>
<td>5.021229</td>
<td>0.276035</td>
<td>18.191</td>
<td>91</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>MEDIA, β₀₁</td>
<td>0.077317</td>
<td>0.296335</td>
<td>0.261</td>
<td>91</td>
<td>0.795</td>
</tr>
<tr>
<td>INTRCPT2, π₁</td>
<td>0.005267</td>
<td>0.251958</td>
<td>0.021</td>
<td>92</td>
<td>0.983</td>
</tr>
</tbody>
</table>

Note: The reliability estimates reported above are based on only 85 of 93 units that had sufficient data for computation. Fixed effects and variance components are based on all the data.

The value of the log-likelihood function at iteration 96 = -3.552693E+002

Final estimation of fixed effects:

<table>
<thead>
<tr>
<th>Fixed Effect</th>
<th>Coefficient</th>
<th>Standard error</th>
<th>t-ratio</th>
<th>Approx. d.f.</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>For INTRCPT1, π₀</td>
<td>5.021229</td>
<td>0.276035</td>
<td>18.191</td>
<td>91</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>MEDIA, β₀₁</td>
<td>0.077317</td>
<td>0.296335</td>
<td>0.261</td>
<td>91</td>
<td>0.795</td>
</tr>
<tr>
<td>INTRCPT2, β₀₀</td>
<td>0.005267</td>
<td>0.251958</td>
<td>0.021</td>
<td>92</td>
<td>0.983</td>
</tr>
</tbody>
</table>

Final estimation of fixed effects (with robust standard errors)

<table>
<thead>
<tr>
<th>Fixed Effect</th>
<th>Coefficient</th>
<th>Standard error</th>
<th>t-ratio</th>
<th>Approx. d.f.</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>For INTRCPT1, π₀</td>
<td>5.021229</td>
<td>0.221576</td>
<td>22.661</td>
<td>91</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>MEDIA, β₀₁</td>
<td>0.077317</td>
<td>0.272086</td>
<td>0.284</td>
<td>91</td>
<td>0.777</td>
</tr>
<tr>
<td>INTRCPT2, β₀₀</td>
<td>0.005267</td>
<td>0.250212</td>
<td>0.021</td>
<td>92</td>
<td>0.983</td>
</tr>
</tbody>
</table>

Final estimation of variance components

<table>
<thead>
<tr>
<th>Random Effect</th>
<th>Standard Deviation</th>
<th>Variance Component</th>
<th>d.f.</th>
<th>χ²</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTRCPT1, r₀</td>
<td>0.99256</td>
<td>0.98518</td>
<td>83</td>
<td>117.53197</td>
<td>0.008</td>
</tr>
<tr>
<td>TIME slope, r₁</td>
<td>0.66480</td>
<td>0.44196</td>
<td>84</td>
<td>92.82685</td>
<td>0.239</td>
</tr>
<tr>
<td>level-1, e</td>
<td>1.60956</td>
<td>2.59069</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: The chi-square statistics reported above are based on only 85 of 93 units that had sufficient data for computation.
units that had sufficient data for computation. Fixed effects and variance components are based on all the data.

**Statistics for current covariance components model**

Deviance = 710.538596  
Number of estimated parameters = 4
Specifications for this HLM2 run

Problem Title: Intensifier rate (INTENSE) intercepts Time 4

The data source for this run = 2015-5-20
The command file for this run = C:\Users\PKRENI~1\AppData\Local\Temp\whlmtemp.hlm
Output file name = U:\1dstats\Latest Files\2015-5-20 HLM Media\hlm2.html
The maximum number of level-1 units = 194
The maximum number of level-2 units = 97
The maximum number of iterations = 100

Method of estimation: restricted maximum likelihood

The outcome variable is COGNITIVE

Summary of the model specified

**Level-1 Model**

\[
COGNITIVE_{ij} = \beta_0 + \beta_{ij}(TIME_{ij}) + r_{ij}
\]

**Level-2 Model**

\[
\beta_0 = \gamma_{00} + \gamma_{01}(MEDIA_i) + u_{0j}
\]

\[
\beta_{ij} = \gamma_{10} + \gamma_{11}(MEDIA_i) + u_{ij}
\]

**Mixed Model**

\[
COGNITIVE_{ij} = \gamma_{00} + \gamma_{01}(MEDIA_i) + \gamma_{10}(TIME_{ij}) + \gamma_{11}(MEDIA_i)(TIME_{ij}) + u_{0j} + u_{ij}(TIME_{ij}) + r_{ij}
\]

Run-time deletion has reduced the number of level-1 records to 178
Run-time deletion has reduced the number of level-2 groups to 93

**Final Results - Iteration 41**

Iterations stopped due to small change in likelihood function

\[
\sigma^2 = 1.37285
\]

\[
\tau
\]

<table>
<thead>
<tr>
<th>Parameter</th>
<th>INTRCPT1,\beta_0</th>
<th>TIME,\beta_1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value</td>
<td>0.30864</td>
<td>0.38815</td>
</tr>
<tr>
<td></td>
<td>0.38815</td>
<td>0.59794</td>
</tr>
</tbody>
</table>

\[
\tau \text{ (as correlations)}
\]

<table>
<thead>
<tr>
<th>Parameter</th>
<th>INTRCPT1,\beta_0</th>
<th>TIME,\beta_1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value</td>
<td>1.000</td>
<td>0.904</td>
</tr>
<tr>
<td></td>
<td>0.904</td>
<td>1.000</td>
</tr>
</tbody>
</table>
Note: The reliability estimates reported above are based on only 85 of 93 units that had sufficient data for computation. Fixed effects and variance components are based on all the data.

The value of the log-likelihood function at iteration 41 = -2.945785E+002

**Final estimation of fixed effects:**

<table>
<thead>
<tr>
<th>Fixed Effect</th>
<th>Coefficient</th>
<th>Standard error</th>
<th>t-ratio</th>
<th>Approx. d.f.</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>For INTRCPT1, $\beta_0$</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>INTRCPT2, $\gamma_{00}$</td>
<td>2.703066</td>
<td>0.229223</td>
<td>11.792</td>
<td>91</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>MEDIA, $\gamma_{01}$</td>
<td>0.717183</td>
<td>0.287341</td>
<td>2.496</td>
<td>91</td>
<td>0.014</td>
</tr>
<tr>
<td>For TIME slope, $\beta_1$</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>INTRCPT2, $\gamma_{10}$</td>
<td>-0.048747</td>
<td>0.322995</td>
<td>-0.151</td>
<td>91</td>
<td>0.880</td>
</tr>
<tr>
<td>MEDIA, $\gamma_{11}$</td>
<td>0.729006</td>
<td>0.403615</td>
<td>1.806</td>
<td>91</td>
<td>0.074</td>
</tr>
</tbody>
</table>

**Final estimation of fixed effects (with robust standard errors)**

<table>
<thead>
<tr>
<th>Fixed Effect</th>
<th>Coefficient</th>
<th>Standard error</th>
<th>t-ratio</th>
<th>Approx. d.f.</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>For INTRCPT1, $\beta_0$</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>INTRCPT2, $\gamma_{00}$</td>
<td>2.703066</td>
<td>0.224862</td>
<td>12.021</td>
<td>91</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>MEDIA, $\gamma_{01}$</td>
<td>0.717183</td>
<td>0.283104</td>
<td>2.533</td>
<td>91</td>
<td>0.013</td>
</tr>
<tr>
<td>For TIME slope, $\beta_1$</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>INTRCPT2, $\gamma_{10}$</td>
<td>-0.048747</td>
<td>0.331484</td>
<td>-0.147</td>
<td>91</td>
<td>0.883</td>
</tr>
<tr>
<td>MEDIA, $\gamma_{11}$</td>
<td>0.729006</td>
<td>0.405937</td>
<td>1.796</td>
<td>91</td>
<td>0.076</td>
</tr>
</tbody>
</table>

**Final estimation of variance components**

<table>
<thead>
<tr>
<th>Random Effect</th>
<th>Standard Deviation</th>
<th>Variance Component d.f.</th>
<th>$\chi^2$</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTRCPT1, $u_0$</td>
<td>0.55556</td>
<td>0.30864</td>
<td>83</td>
<td>103.55570</td>
</tr>
<tr>
<td>TIME slope, $u_1$</td>
<td>0.77326</td>
<td>0.59794</td>
<td>83</td>
<td>97.55664</td>
</tr>
<tr>
<td>level-1, $r$</td>
<td>1.17169</td>
<td>1.37285</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: The chi-square statistics reported above are based on only 85 of 93 units that had sufficient data for computation. Fixed effects and variance components are based on all the data.

**Statistics for current covariance components model**

Deviance = 589.156924

Number of estimated parameters = 4
Specifications for this HLM2 run
Problem Title: Intensifier rate (INTENSE) intercepts Time 1
The data source for this run = 2015-5-20 Int 0 and 1
The command file for this run = C:\Users\PKRENI~1\AppData\Local\Temp\whlmtemp.hlm
Output file name = U:\1dstats\Latest Files\2015-5-20 HLM Media\hlm2.html
The maximum number of level-1 units = 194
The maximum number of level-2 units = 97
The maximum number of iterations = 100

Method of estimation: restricted maximum likelihood

The outcome variable is INTENSE

Summary of the model specified

**Level-1 Model**

\[
INTENSE_{ij} = \beta_{0j} + \beta_{1j} \times (TIME_{ij}) + r_{ij}
\]

**Level-2 Model**

\[
\beta_{0j} = \gamma_{00} + \gamma_{01} \times (MEDIA_j) + u_{0j} \\
\beta_{1j} = \gamma_{10} + \gamma_{11} \times (MEDIA_j) + u_{1j}
\]

**Mixed Model**

\[
INTENSE_{ij} = \gamma_{00} + \gamma_{01} \times MEDIA_j \\
+ \gamma_{10} \times TIME_{ij} + \gamma_{11} \times MEDIA_j \times TIME_{ij} \\
+ u_{0j} + u_{1j} \times TIME_{ij} + r_{ij}
\]

Run-time deletion has reduced the number of level-1 records to 178
Run-time deletion has reduced the number of level-2 groups to 93

**Final Results - Iteration 31**

Iterations stopped due to small change in likelihood function

\[\sigma^2 = 12.52189\]

\[\tau\]

<table>
<thead>
<tr>
<th></th>
<th>INTRCPT1,(\beta_0)</th>
<th>TIME,(\beta_1)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2.80371</td>
<td>2.67640</td>
</tr>
<tr>
<td></td>
<td>2.67640</td>
<td>17.08383</td>
</tr>
</tbody>
</table>

\[\tau\text{ (as correlations)}\]

<table>
<thead>
<tr>
<th></th>
<th>INTRCPT1,(\beta_0)</th>
<th>TIME,(\beta_1)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1.000</td>
<td>0.387</td>
</tr>
<tr>
<td></td>
<td>0.387</td>
<td>1.000</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Random level-1 coefficient</th>
<th>Reliability estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTRCPT1,(\beta_0)</td>
<td>0.183</td>
</tr>
</tbody>
</table>
**Final estimation of fixed effects:**

<table>
<thead>
<tr>
<th>Fixed Effect</th>
<th>Coefficient</th>
<th>Standard error</th>
<th>t-ratio</th>
<th>Approx. d.f.</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>For INTRCPT1, $\beta_0$</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>INTRCPT2, $\gamma_{00}$</td>
<td>7.210931</td>
<td>0.691501</td>
<td>10.428</td>
<td>91</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>MEDIA, $\gamma_{01}$</td>
<td>0.176170</td>
<td>0.861367</td>
<td>0.205</td>
<td>91</td>
<td>0.838</td>
</tr>
<tr>
<td>For TIME slope, $\beta_1$</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>INTRCPT2, $\gamma_{10}$</td>
<td>-1.270036</td>
<td>1.150831</td>
<td>-1.104</td>
<td>91</td>
<td>0.273</td>
</tr>
<tr>
<td>MEDIA, $\gamma_{11}$</td>
<td>3.213731</td>
<td>1.441477</td>
<td>2.229</td>
<td>91</td>
<td>0.028</td>
</tr>
</tbody>
</table>

**Final estimation of fixed effects (with robust standard errors)**

<table>
<thead>
<tr>
<th>Fixed Effect</th>
<th>Coefficient</th>
<th>Standard error</th>
<th>t-ratio</th>
<th>Approx. d.f.</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>For INTRCPT1, $\beta_0$</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>INTRCPT2, $\gamma_{00}$</td>
<td>7.210931</td>
<td>0.512011</td>
<td>14.084</td>
<td>91</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>MEDIA, $\gamma_{01}$</td>
<td>0.176170</td>
<td>0.763151</td>
<td>0.231</td>
<td>91</td>
<td>0.818</td>
</tr>
<tr>
<td>For TIME slope, $\beta_1$</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>INTRCPT2, $\gamma_{10}$</td>
<td>-1.270036</td>
<td>0.472130</td>
<td>-2.690</td>
<td>91</td>
<td>0.009</td>
</tr>
<tr>
<td>MEDIA, $\gamma_{11}$</td>
<td>3.213731</td>
<td>1.143703</td>
<td>2.810</td>
<td>91</td>
<td>0.006</td>
</tr>
</tbody>
</table>

**Final estimation of variance components**

<table>
<thead>
<tr>
<th>Random Effect</th>
<th>Standard Deviation</th>
<th>Variance Component</th>
<th>d.f.</th>
<th>$\chi^2$</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTRCPT1, $u_0$</td>
<td>1.67443</td>
<td>2.80371</td>
<td>83</td>
<td>104.39051</td>
<td>0.056</td>
</tr>
<tr>
<td>TIME slope, $u_1$</td>
<td>4.13326</td>
<td>17.08383</td>
<td>83</td>
<td>143.17967</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>level-1, $r$</td>
<td>3.53863</td>
<td>12.52189</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: The chi-square statistics reported above are based on only 85 of 93 units that had sufficient data for computation. Fixed effects and variance components are based on all the data.

**Statistics for current covariance components model**

Deviance = 1056.871747

Number of estimated parameters = 4
Appendix F
Regression Time 4 and 1

REGRESSION
/MISSING LISTWISE
/STATISTICS COEFF OUTS R ANOVA COLLIN TOL
/Criteria=PIN(.05) POUT(.10)
/NOORIGIN
/DEPENDENT BLGSCALcmmt
/METHOD=ENTER INTENSEse ratpsychstate FLUENCY
/SCATTERPLOT=(*ZRESID ,*ZPRED)
/RESIDUALS DURBIN HISTOGRAM(ZRESID) NORMPROB(ZRESID).

USE ALL.
COMPUTE filter_$=( Time  = 4).
VARIABLE LABELS filter_$ ' Time  = 4 (FILTER)'.
VALUE LABELS filter_$ 0 'Not Selected' 1 'Selected'.
FORMATS filter_$ (f1.0).
FILTER BY filter_$.
EXECUTE.
REGRESSION
/MISSING LISTWISE
/STATISTICS COEFF OUTS R ANOVA COLLIN TOL
/Criteria=PIN(.05) POUT(.10)
/NOORIGIN
/DEPENDENT BLGSCALcmmt
/METHOD=ENTER INTENSEse ratpsychstate FLUENCY
/SCATTERPLOT=(*ZRESID ,*ZPRED)
/RESIDUALS DURBIN HISTOGRAM(ZRESID) NORMPROB(ZRESID).

Regression TIME 4

<table>
<thead>
<tr>
<th>Output Created</th>
<th>29-JUL-2015 12:47:52</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comments</td>
<td></td>
</tr>
<tr>
<td>Input</td>
<td>Data</td>
</tr>
<tr>
<td></td>
<td>Active Dataset</td>
</tr>
<tr>
<td></td>
<td>Filter</td>
</tr>
<tr>
<td></td>
<td>Weight</td>
</tr>
<tr>
<td></td>
<td>Split File</td>
</tr>
<tr>
<td></td>
<td>N of Rows in Working Data File</td>
</tr>
<tr>
<td>Missing Value Handling</td>
<td>Definition of Missing</td>
</tr>
<tr>
<td></td>
<td>Cases Used</td>
</tr>
<tr>
<td></td>
<td>Data</td>
</tr>
<tr>
<td></td>
<td>DataSet1</td>
</tr>
<tr>
<td></td>
<td>Time = 4 (FILTER)</td>
</tr>
<tr>
<td></td>
<td>&lt;none&gt;</td>
</tr>
<tr>
<td></td>
<td>&lt;none&gt;</td>
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<tr>
<td></td>
<td>98</td>
</tr>
<tr>
<td></td>
<td>User-defined missing values are treated as missing.</td>
</tr>
<tr>
<td></td>
<td>Statistics are based on cases with no missing values for any variable used.</td>
</tr>
</tbody>
</table>
### HOW INTERACTIVE WRITING MEDIA INFLUENCED

#### Syntax

```plaintext
REGRESSION
/MISSING LISTWISE
/STATISTICS COEFF OUTS R ANOVA COLLIN TOL
/CRITEIRA=PIN(.05) POUT(.10)
/NOORIGIN
/DEPENDENT BLGSCALcmmt
/METHOD=ENTER INTENSEse ratpsy chstate FLUENCY
/SCATTERPLOT="*ZRESID ,"*ZPRED"
/RESIDUALS DURBIN HISTOGRAM(ZRESID)
NORMPROB(ZRESID).
```

#### Resources

<table>
<thead>
<tr>
<th>Resource</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Processor Time</td>
<td>00:00:00.33</td>
</tr>
<tr>
<td>Elapsed Time</td>
<td>00:00:00.29</td>
</tr>
<tr>
<td>Memory Required</td>
<td>6912 bytes</td>
</tr>
<tr>
<td>Additional Memory</td>
<td>648 bytes</td>
</tr>
<tr>
<td>Required for Residual Plots</td>
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</tr>
</tbody>
</table>

#### Variables Entered/Removed

<table>
<thead>
<tr>
<th>Model</th>
<th>Variables Entered</th>
<th>Variables Removed</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
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a. Dependent Variable: Blog only scalar comments

b. All requested variables entered.

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a. Predictors: (Constant), FLUENCY, INTENSEse, ratpsy chstate

b. Dependent Variable: Blog only scalar comments

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a. Dependent Variable: Blog only scalar comments

b. Predictors: (Constant), FLUENCY, INTENSE, ratpsychstate

## Coefficients

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<th>Standardized Coefficients</th>
<th>Collinearity Statistics</th>
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<th>Condition Index</th>
<th>Variance Proportions</th>
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a. Dependent Variable: Blog only scalar comments
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a. Dependent Variable: Blog only scalar comments

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a. Dependent Variable: Blog only scalar comments

**Charts:**

---

**HOW INTERACTIVE WRITING MEDIA INFLUENCED**

---

148
Histogram

Dependent Variable: Blog only scalar comments

Mean = 2.76E-17
Std. Dev. = 0.972
N = 56
Normal P-P Plot of Regression Standardized Residual

Dependent Variable: Blog only scalar comments
USE ALL.
COMPUTE filter_$=(Time = 1).
VARIABLE LABELS filter_$ 'Time = 1 (FILTER)'.
VALUE LABELS filter_$ 0 'Not Selected' 1 'Selected'.
FORMATS filter_$ (f1.0).
FILTER BY filter_$. EXECUTE.

REGRESSION
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/STATISTICS COEFF OUTS R ANOVA COLLIN TOL
/CRITERIA=PIN(.05) POUT(.10)
/NOORIGIN
/DEPENDENT BLGSCALcmmt
/METHOD=ENTER INTENSEse ratpsychstate FLUENCY
/SCATTERPLOT=(*ZRESID ,*ZPRED)
/RESIDUALS DURBIN HISTOGRAM(ZRESID) NORMPROB(ZRESID)
/SAVE COOK.
Regression TIME 1

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<td>Filter</td>
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<td>Weight</td>
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User-defined missing values are treated as missing. Statistics are based on cases with no missing values for any variable used.

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<td>Additional Memory Required for Residual Plots</td>
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<table>
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<tr>
<td>COO_2</td>
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<td>Definition of Missing Cases Used</td>
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User-defined missing values are treated as missing. Statistics are based on cases with no missing values for any variable used.
Syntax

REGRESSION
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NORMPROB(ZRESID)
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Additional Memory Required for Residual Plots 896 by tes

Variables Created or Modified COO_2
Cook’s Distance

[DataSet1] U:\Idstats\RQ2\2015-7-17 T1and4.sav

Variables Entered/Removed*

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a. Dependent Variable: Blog only scalar comments
b. All requested variables entered.

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a. Predictors: (Constant), FLUENCY, INTENSEse, ratpsychstate
b. Dependent Variable: Blog only scalar comments
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a. Dependent Variable: Blog only scalar comments
b. Predictors: (Constant), FLUENCY, INTENSEse, ratpsychstate

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a. Dependent Variable: Blog only scalar comments

### Collinearity Diagnostics

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a. Dependent Variable: Blog only scalar comments

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a. Dependent Variable: Blog only scalar comments

Charts
Appendix G
Selected Narratives

No comply Post 1

Going into College X I felt quite uneasy due the different vibes while going into the school. As in high school I was in relatively close with many of my peers and teachers as well to the point where I felt like I had connected with my teachers as well as I did with my peers. Going into College X everything and everyone feels so intimidating as they all got places to be and things to do, sort of like a shopping mall everyone’s just there an no one really knows each other yet they’re in the same stores looking for the same things. As opposed to my high school, where you wouldn’t be frightened by approaching a teacher or even having small talk. What I felt really did ease me down a little were my mentors or students who are mentors for other groups. Many would say hi to you talk to you and even show an interest to you, as well as professors who were fresh out of college, they knew what you were going through they empathized with your feelings and you as students getting used to your transitions. I felt like there was more of a connection with them as they all made you feel enthusiastic about being here rather than nervous and frightened. They gave you tips ranging from things to do before school starts to knowing how to navigate around the school and outside, I felt as if they’re your survival guide on a wild zoo where the animals are professors and they’ve just been let out and some may look mean but may be nice and others may look pleasant but will give you migraines all semester, and you never really know who you’re going to get you just know that you have to be ready(analogy used by one of my professors.) I’ve grown to realize in just the 5 days that I’ve been going here that I face a long hard working journey ahead, by I also face an interesting and amazing group of a bunch of friendly people I have yet to meet that will not only help me on my journey but will
also make college a pleasurable experience for me. One particular moment I’ll remember is during tutoring, peer mentors from other classes had came and introduced themselves to us but after they were done some approached me and asked me questions basic questions you ask you ask to someone you find interesting, and that made me think to myself that in other people’s eyes I look interesting they want to get to know me on a personal level and that made me feel relatively less nervous and shy because they didn’t have to ask me questions it wasn’t required that they even get to know my name yet they did it on their own. As I reached my first day it hits you, this is your new daily routine, the commute the walk to the school the constant swiping the elevator taking all to get to class every single day for over 4 years, it gets pretty overwhelming and it hits you like a ton of bricks that this isn’t No Asher Roth “I love college” music video, its college and everyone’s here for one thing only, a college degree.
No Comply Post 4

During my first semester not only have I experienced a rollercoaster both academically and personally but I learn to adapt to a new environment that I was unfamiliar with. Throughout the course of the semester I have experienced hardships, one of which was coping with the reality that I am in college. What I’ve felt throughout the semester is a loss in drive for work, what I thought I was really good at, suddenly flew out the door and my grades were slipping. I was uncomfortable talking to my professors about it and at some points I even stopped coming, but something had changed. I can say with certainty that I am not the same person who wrote their first blog post back in the summer. I burned out halfway through the semester in College and it’s only recently that I’ve started to pick myself and try again and I’ve learned that self-responsibility and discipline is the most significant aspect of high grades. I’ve learned to find myself in college and just recently learned to balance myself out. I’ve learned that I feed off competition in classes for grades. I’ve learned that I hate being in school at night, it’s quite depressing seeing the Sunset slip into the night off the 14th floor in the 23rd Street building. I’ve learned to hate the 23rd street building in general. I’ve learned that I’m a very reserved individual. College X is tough I give it that, the professors are intimidating and little things can slip up and you can have a bad day and suddenly that A you had in a class is now a B- all because you blanked out on a quiz, but that doesn’t mean you have an excuse to drop a class and forget about it. I always thought to myself if s/he is doing just fine and getting amazing grades, then why can’t I? Just now I’m starting to realize that no matter how life chews you up; you have to make sure that whatever happens outside of school has to stay out. I’ve learned to realize that I love math. Math in general is like a huge puzzle piece and the satisfaction to find the answer drives me to do it. I’ve also come to realize that I’m horrible at expressing myself in words. I’ve learned I’m not the best writer and that at times I can’t express my thoughts onto paper. I’ve learned that the only thing stopping you from succeeding is you. You are your own worst enemy, if you let yourself be; you can be the very best you can if you let yourself be. I know that sounds cliché but the significance in the words aren’t supposed to be taken lightly. My semesters been tough but that doesn’t mean it’s impossible.
Newbeginnings Post 1

Week One...

In order for me to tell you how my first week went I have to give a slight back story on who I am. I’m not the most outgoing person in the world and on occasion it can be really difficult for me to make friends. It might just be that its my personality to be a little reserved but with different people I can act the total opposite. So coming to a completely new school where I wouldn’t know anyone was VERY INTIMIDATING. I’ve had to go to new places plenty of times and sometimes it worked out and many other times it didn’t. So because I didn’t want a repeat of previous situations, this time I had a plan.

Instead of looking at going to a new place as a negative, I decided to look at the situation in a brand new light. I decided that going to a huge school would give me the chance to reinvent myself.

So the first day at College X I was nervous but I just put a smile on my face and walked into class. But as soon as I walked in I knew we were going to have discussions, because the chairs were set up in a circle, and I loathe discussions. To my surprise I wasn’t awkward and actually had a conversation with someone, so that was a start. Transitioning from classes wasn’t hard because everyone in your class is going to the same place so I just made small talk and for me this is a big deal. The next class went about smoothly because the professor seemed very down to earth and funny so that always helps.

The next three days went better. I really like how diversity is a big thing hear. Its actually one of the big things I liked about College X. There are so many different people that are races and cultures that I’ve never even heard of before. Unlike high school most of these classes aren’t boring and they actually make you think. Throughout the week we had to constantly introduce ourselves in class to the teachers so that was a bit awkward but it did push me out of my comfort zone. So all in all the first week at College X wasn’t too bad and hopefully it will just get better.
Newbeginnings Post 4

1st Semester..

The first semester at College X has made me realize how incredibly easy high school really was. I never really tried that hard in high school and managed to somehow graduate with honors. College is a completely different story. The classes are longer and the workload is 10 times the amount you’d get in high school. For example the class that I find the most difficult is math. I already hate math so the fact that I get 60 questions of homework twice a week doesn’t help. I barely even remember having to do this much work. At first I missed a lot of the assignments but instead of waiting to the last minute, I have adapted to starting the homework early so I don’t miss the deadline. Nonetheless math is the class that has stressed me out the most. The final is coming up and I find myself panicking every time I think about it. Finals in general make me cringe at this point. Besides math and English the rest of my classes are based solely on reading. Anthropology, Global History, and Art History are the classes where if you don’t at least know what’s going on you’re bound to fail. I didn’t study for my global midterm and managed to pass because I had least read some of the chapters but I don’t really suggest not studying. I might of just gotten lucky. Other than that I managed to pass all my midterms when I only really studied for one. Again I believe this to be luck. Hopefully this lucky streak will keep going so I don’t have to repeat any classes, especially math. If you fail your math class or get an incomplete, you have to come back in the winter and basically lose your entire winter break! I am so tired from all this work I want to use that entire month for sleep! So I am trying my hardest to pass this class in particular. I’m going to multiple tutors and asking my professor if there’s anything extra I can do. I am NOT FAILING. But yeah, college is difficult and I can’t wait for this semester to be over. The most important thing would be time management and asking a lot of questions. The classes that take place in large classrooms are kind of intimidating so asking professors questions after class is ideal if you want to boost a participation grade. I actually need to start doing that… On another social life at College X is um yeaa… Maybe it just me but it kind of feels like College X is like high school 2.0. There probably are parties but I just don’t know about them. Its a commuter school so the parties aren’t what you see in the movies. But regardless of that I’ve managed to still keep most of the friends I made over the summer, well besides one but I guess people just find their niche and go their own way. But its cool. Im still giving this school a chance and its not so bad I just have to continue making friends and the exciting college life should find me. lol
MonsieurD Post 1

What the heck, Man. (College Experience, so far.)
I was writing a post before this and it magically got deleted, so that explains my title -______________-. Anyways, I always had performance anxiety; frequently questioning my ability to do things that I have never done before. I am open to new things but when the time comes down to it, I worry, worry, wooooooooo. I was salutatorian for my graduating class and I worried about how my speech was going to go. Luckily, I had individuals who helped me edit and form my speech into something short, sweet, and comedic, and individuals who tried their best to help me stay calm when I had to go up in that stage. It turned out to be a gratifying success! The next big thing was College X college. I was ecstatic to find out that I got accepted because it was my dream college of all time; however, I worried about how my academic work ethic will play out at the college level. Obviously, we all never went to college before, but we experienced “college level work” like college now or AP classes. That still is less significant than the real deal. So at this moment, I am worried, but I realize that I do have the resources to help me stay on my A-game throughout the year so I am, at the same time, relaxed like a sloth.

I like meeting new people because everyone has something to offer that is worth value. That is the reason why I am open and willing to start friendships with anyone I meet and encounter throughout my life. It makes me sad to see people who do not go about their ways the way I do. For example, there is this girl (I’ll use a fake name, Shaquisha) in my pre-calc class who is nice to everyone else, except me. I do not even know the reason she seems to dislike me. It troubles me and ruins the flow of my college experience. I do not know how to deal with people who do not like me without a a good reason. But, I also have to realize that people have unreasonable reasons to dislike other individuals so I just go with the floooooooooooooow. Things will turn out well in time so, why force anything? Besides that, the SEEK program at College X has been really interesting. Learning will always be a new experience and I love to see what is new and what stories people can tell me. That is how you grow as a person. KNOWLEDGE IS KEY.

~~~Akuna Matata
This semester has been something. Midterms were a blow like hurricane Sandy and I have just been going through life nonchalantly. I have seemed to have bonded with some people but, realistically speaking, it has really just been months lol. It is not really a community like what you witness on T.V. or what some of your high school friends are experiencing if they went to a dorming college. But I digress. It enables me to see how experiences can be priceless, so in a way it humbles me and makes me look back at my choices. Despite that, I have met some good people. People who have given me insight on things that I never even thought of. That made me realize that I missed out on a lot of things I could have done but did not see the opportunity to.

BUT ENOUGH OF THAT DEPRESSING BULLSH*T. Lets talk about these finals that are coming up soooooooon. WHO READY FOR THAT MATH RAPE? I knooooow some of y’all gonna be freezing during the math winter session with Florence. You guys ain’t ready! That cold sweat you feel when you wake up at night screaming from seeing that F! on your Math final. I KNOOOOOOW all my people of color will have their parents ready with a 14mm black leather belt, with M9-47 CHANKLATA, with a F-14 72 Caliber High-Frequency wooden spoon ready for whooping that ass. You’re going to WINTER SCHOOL lmaooooooooo, not even summer school, WINTER SCHOOL. You’re non-college siblings will be laughing their asses off sipping on that COCO during their winter break. HOW EMBARRASSING IS THAT?? I would never step foot in my house anymore, fack yuh mean. That’s the end of my rant. We have several days left of college, enjoy your last
days and study hard for them finals my peoplez. Look it the bright-side, WE DON’T GET REPORT CARDS! So you can hide that sh*t whenever you get the results lmaooo, THATS WHAT IMMA DOOOO :P. #ImGrown. ENJOY YOUR BREAK!!!!! SHOUTOUT TO ALL PEARS!! ~~~~HAKUNA MATATA
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