

ABSTRACT

Title of Dissertation: HOW ADOLESCENT SECOND LANGUAGE WRITERS DEVELOP WRITING COMPETENCE THROUGH MULTIMODAL ACTIVITIES

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The purpose of the study was to examine how the processes and different activities that adolescent English L2 writers engage in producing multimodal texts influence the development of their multimodal and writing competence. This dissertation fills existing gaps regarding how multimodal pedagogies are implemented in L2 contexts to facilitate adolescent L2 writers' development of writing and multimodal competence.

The research was conducted in an English classroom within a junior high school (JHS) located in a small village in southern Ghana. Forty-eight second year JHS students (the equivalent of 8th grade) participated in the study; three of these were selected as focal students. Both qualitative and quantitative data were collected concurrently through an embedded, developmental case study design, with the quantitative data playing a supportive role. Data collected through this design included surveys, multiple drafts of students' expository texts, posters, poster presentations, guided reflections and text-based interviews.

The qualitative and quantitative analysis of the data showed that the adolescent L2 writers' mediated, distributed and complex multimodal activities

created opportunities for developing new intellectual tools, strategic competence, and technical knowledge about multimodal composing as well as an in-depth understanding of, and interest in, social and cultural issues that affected the writers and their communities. The qualitative and quantitative analyses of the multiple drafts of the writers' expository texts also suggested that the multimodal activities helped the writers to improve the development and organization of their ideas and the overall quality of their paper.

These findings offer new insight and ways to think about how L2 teachers can develop students' academic language by helping students draw on ideas from their multimodal texts to revise their word-based expository texts and other genres of writing. Next, not only does this research help to expand the definition of adolescent English L2 writing competence beyond word-based composing, but it also provides an empirical evidence of how this reconceptualization can play out in concrete adolescent English L2 writing contexts. Finally, by bringing together multiple theoretical and interdisciplinary perspectives, this study offers a new framework for examining transformations in students' understanding of multimodal meaning making.

HOW ADOLESCENT SECOND LANGUAGE WRITERS DEVELOP WRITING
COMPETENCE THROUGH MULTIMODAL ACTIVITIES

By

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Dissertation submitted to the Faculty of the Graduate School of the
University of Maryland, College Park in partial fulfillment
of the requirements for the degree of
Doctor of Philosophy
2012

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Dedication

This work is dedicated to the Blessed Virgin Mary,
My Queen and My Mother

And to the following wonderful and loving people in my life:
Stephen, Cecilia, Sr. Veronica, Cynthia, Anastasia, Robert, Abraham, Bernard, Wilfred
and Kwesi (my oldest nephew who is now in the “Arms of Grace”) and all my nephews
and nieces

Acknowledgements

I express my heartfelt gratitude to Dr. Melinda Martin-Beltrán for being a wonderful advisor and for directing this research. With her support, I have successfully turned my interest in L2 writing into a meaningful research. I acknowledge, with thanks, the immeasurable support I have received from my advisory committee: Dr. Patricia Alexander, Dr. Jennifer Turner, Dr. Joseph McCaleb and Dr. Megan Peercy. I appreciate the immense contribution of Dr. Denis Sullivan and Dr. Rebecca Oxford.

I also acknowledge the support and encouragement I have received from Most Rev. Matthias Nketsia and His Eminence Peter Cardinal Turkson. I am grateful to them for the opportunity to undertake this study. I thank Msgr. Richard Bozelli, Msgr. Bruce Jarboe, Frs. Jesse Bolger, Michael DeAscanis and Michael Panful for their words of encouragement, and my beloved parishioners for their prayers. I thank Fr. Polycarp Hagan, Sr. Charo, Sr. Mary and the teachers and staff at St. Anne for their support.

To my colleagues who have been on this journey with me – Nordia, Rashi, Julian, Yu Bai, Ben & Eva Quansah and Diana Tai– many thanks for the support. And to my brother and friend, Fr. Richmond Dzekoe: *Mbo na edwuma pa! Aseda daapem!*

Finally, to the adolescent writers who participated in this research: I will always remember your great work, enthusiasm and achievements. You have made all the difference.

Ad Majorem Dei Gloriam! To the Great I AM, the Good Lord, be all the Glory!

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CHAPTER 1: INTRODUCTION

Background and Rationale

Teaching and learning in all disciplines and at all levels are increasingly taking a multimodal turn. From mathematics to language arts, science to social studies, anthropology to mechanical engineering - the advancement in technology and access to digital tools have made it easier to mesh different modes (visual, oral, written, etc) together to create single and multiple texts, and to share these texts with people all over the world. In fact, many consider this a paradigm shift in education in general (e.g. Kress, 1995, 2003; Royce, 2002; Warschauer, 2000). In a more general sense, such a shift causes us to think again about what constitutes knowledge, and about how to acquire, analyze, create and communicate knowledge (Jewitt, 2008). More specifically in this research, taking note of the multimodal turn causes us to think about making and communicating meanings through English second language (L2) writing.

As Kroll (1994) and many others have pointed out, becoming a writer is a complex and ongoing process. Writing, whether for the self or for others can be difficult, but it can also be “spellbinding and colorful” (Strong et al., 1994, p. 4). For those engaged in learning to write in a second language (L2), the complexity of mastering writing skills is compounded both by the difficulties inherent in a second language learning and the ways in which first language (L1) literacy may influence the learning of L2 literacy skills (Kroll 1994). The situation is even more challenging when, as 21st century language learners, English L2 writers (like their first language

speaker counterparts) are expected to use their target language to communicate in meaningful ways, to acquire and share knowledge and build relationships. In fact, the nature and understanding of second language learning and literacy are changing so fast that L2 learners in general and ESL learners in particular, are expected to develop more than basic (traditional) listening, speaking, reading and writing skills, even though these skills are still highly privileged. Beyond the basic skills, they are expected to engage in productive meaning-making experiences by being able to critique, analyze, evaluate and create multi-media and multimodal texts. The reason for this expectation is that these texts surround L2 learners all the time. They encounter them in traditional print textbooks, visually enhanced magazines and newspapers, online (screen-based) texts, television and Internet-based commercials, and in many other places. Multimodal texts integrate written, oral, visual and electronic modes in making meaning, and those who have the ability to engage in reading and writing such texts are better positioned to participate in the kinds of communication practices that surround them (Bateman, 2008).

These challenges and complexities notwithstanding, the literature shows that teachers can help L2 learners become effective writers if there is a collaborative effort at defining clear goals and choosing appropriate approaches to teaching writing (Cumming, 2007; Ferris & Hedgcock, 2005; Kroll, 1994; Hyland, 2009). I also suggest that, in light of the proliferation of multimodal texts made possible by technological advancement and prevalence of digital tools, efforts made at improving L2 writing need to consider engaging students in reading and producing such texts (Royce, 2002; Stein 2000).

In 1996, the New London Group signaled this trend by positing the notion of “multiliteracies” to describe the new approaches to pedagogy needed to respond to the changing social conditions facing teachers and learners, including “the ways in which literacy practice is colliding with new technological modes of representation and shifting heterogeneous demographics” (Cole & Pullen, 2010, p. 1). In making their argument, the ten-member scholarly Group focused on expanding the understanding of literacy pedagogy to include “negotiating a multiplicity of discourses” and maintained that this kind of scope has the potential to “account for the context of our culturally and linguistically diverse and increasingly globalized societies [... and] for the burgeoning variety of text forms associated with information and multimedia technologies” (New London Group, 1996)

As seen from their argument, the complementary nature of this multiplicity highlights, and legitimatizes, the use or orchestration of different modes to construct, represent and communicate meaning. In other words, their call to expand the notion of literacy (and positing the notion of “multiliteracies”) is also a “call to understand knowledge and pedagogy as multimodal” (Jewitt, 2009b, p. 19). The argument is that meaning making, representation and communication processes always involve the use of more than one mode – whether it is the use of image, gesture, gaze, speech, writing or space. In this sense, then, the idea of using multiple modes or different modalities for communication is the norm, rather than the exception. Even more significant is the fact that, partly due to the development of different technologies and digital tools, the communicational landscape is changing so fast that “the need to understand the

complex ways in which speech and writing interact with ‘non-verbal’ modes can no longer be avoided” (Jewitt, 2009, p. 3).

Statement of the Problem

In my efforts to identify the problems that needed attention in this study, I focused on both global issues (as relating to the field of L2 writing research and pedagogy) and local issues (as relating to L2 writing research and pedagogy in a specific context – which here refers to the English L2 writing context of Ghana). Globally, there is a noticeable gap in the field of L2 writing regarding adolescent L2 writing research. Most of the work to date in this relatively new field has focused on the college level (Enright & Ortmeier-Hooper, 2011; Leki, Cumming & Silva, 2008), with limited and often sporadic attention to adolescent L2 writing research. As Harklau and Pinnow (2009, p. 126) observe, “research specifically addressing adolescent second- and foreign language writing remains sparse, characterized by isolated studies with few sustained threads of inquiry.” My focus on adolescent L2 writing was meant to help bridge this widening gap in the field.

Secondly, multimodality is an emerging framework with great potentials for transforming the way writing is done (Jewitt, 2009; Kress, 1995, 2003, 2010). With particular reference to English L2 writing, a number of researchers have made recommendations regarding the use of multimodality as a framework for developing L2 learners’ writing competence (Leki, Cumming & Silva, 2008; Hyland, 2009; Royce, 2002; Warschauer, 2000). However, empirical studies focusing on multimodality and adolescent English L2 writing competence are very few.

Besides, most of the empirical studies that have used multimodality as a framework for teaching and learning English language in general, and English L2 writing in particular have focused mainly on how the use of different modes give students the opportunity to express themselves in ways that are not possible with the use of language alone (e.g. Archer, 2007; Kendrick, Jones, Mutonyi & Norton, 2007; Newfield & Maungedzo, 2007; Nyirahuku & Hoeing, 2007; Stein, 2008). Together, these studies make meaningful contributions to our understanding of how the incorporation of multimodality as an instructional practice in the classroom can offer innovative possibilities for how teachers might validate students' experiences and cultures to support their learning of English. They also offer rich insights into how the adoption of multimodal pedagogies can enhance students' engagement in school literacies.

However, most of these studies fail, to a large extent, to address the question of multimodal and writing competence, and to show how learners can be assisted to expand their enthusiasm in multimodal activities to include gaining access to forms of literacies that they are still required to develop in order to succeed academically. As Janks (2000, 2007) points out, failing to help students gain access to dominant literacies is a disservice to students and a major gap. This empirical study, therefore, is a sustained and systematic effort at helping to bridge this gap and to contribute to the fields of L2 writing and other related fields of study (e.g., TESOL, Second Language Education, and Applied Linguistics) by examining the connection between multimodality and English L2 writing pedagogy, with specific interest in the development of adolescent English L2 writers' multimodal and writing competence.

At the local level, my attention was drawn particularly to the perennial problem in L2 writing among secondary education students in Ghana¹ – the ESL context in which I have experienced learning, teaching and research. Although the world is turning multimodal (Kress, 2010), in the current approach to teaching English L2 writing in the Ghanaian context, learners’ engagement with the world (especially in the school setting) is restricted to word-based understanding of literacy. The problem associated with such an emphasis is that it does not give students the needed opportunity to engage the world through the use of new forms of multimodal texts, which currently saturate the real world. In a sense, we are preparing citizens whose competencies do not match the communication demands of the real social and economic environment, both locally and globally.

This research sought to address this gap by seeking to understand how adolescent L2 writers in Ghana engage in composing multimodal texts in an English classroom context where they are given instruction about multimodal composing. By giving learners the opportunity to compose in different modes (written, oral, visual, electronic, etc.), the research has implications for enhancing learners’ competencies in participating in the kinds of communication practices that surround them. This research is important because it seeks to understand how adolescent English L2 writers in Ghana can discover their voices using their L2 and so become active constructors of knowledge and agents of change, rather than mere receptacles of knowledge and consumers of values.

¹ The problems identified in Ghana may be reflected in other parts of the world. For instance, there are similar problems in other parts of Africa, such as Uganda, Nigeria, Rwanda and South Africa (Newfield & Stein, 2007).

Secondly, a recent national policy in Ghana has placed emphasis on the use of information and communication technology (ICT) for economic, social and educational development (Ministry of Communications, Ghana, 2003). In response to this policy, the Ministry of Education, Science and Sports (MOESS, 2007) revised the school curriculum to include the teaching and learning of computer literacy in schools. The missing piece in this effort is that the use of technology in the schools has very little to do with students' learning in the content areas (Boakye, 2008). The focus is on computer literacy skills, rather than on using technology to facilitate learning. By focusing on the use of different technologies to compose multimodal texts, this research seeks to understand how adolescent English L2 writers in Ghana use technology to enhance language learning.

Purpose

The purpose of this study, then, was to investigate how L2 writers, particularly adolescent English L2 writers, engage in producing multimodal texts, and how the multimodal instruction might influence the development of their multimodal and writing competence in English. Focusing particularly on adolescent English L2 writers in Ghana, the research sought to understand how adolescent L2 writers in this context improve their writing competence in English through multimodal composing activities.

Research Questions

Two main questions were formulated to guide this study. Research question one had three sub items and focused on understanding the processes and different activities that the adolescent English L2 writers engaged in producing multimodal texts. The overarching goal in posing these questions was to trace the adolescent English L2 writers' experiences in composing multimodal texts, paying attention to (a) students' awareness of the affordances of different modalities (i.e., pictures and words) as well as students' familiarity with using digital technologies to compose different multimodal texts, (b) the specific multimodal composing activities the students engaged in, and (c) the benefits and challenges (contradictions) that arose as part of the composing process. The focus of research question two was to investigate how adolescent English L2 writers' multimodal activities influenced the development of their multimodal and writing competence. The two questions were phrased as follows:

Q1. How can adolescent English L2 writers engage in producing multimodal texts in an English as a second language classroom context, where students receive instruction about multimodal composing?

- (a) What multimodal composing experiences did adolescent L2 writers bring to the composing process, with specific reference to (i) their awareness of the meaning potentials (affordances) of different text forms (i.e., pictures and words), and (ii) their familiarity with using different technologies to compose multimodal texts?

- (b) What multimodal composing activities did they engage in, and what instructional support do they receive?
 - (c) What benefits (i.e., achievement of intermediate goals) and challenges (contradictions) arose as part of the multimodal composing process, and how were the challenges addressed?
- Q2. How did the adolescent English L2 writers' multimodal activities influence the development of their L2 writing and multimodal competence?

Significance of the Study

The significance of this study is related to its implications for L2 writing research and pedagogy. The study draws attention to the connection between multimodal communication and English L2 writing as viable research focus. By so doing, the study contributes to broadening the scope of the field of English L2 writing as an interdisciplinary field of research (Hyland, 2009; Matsuda & Silva, 2005; Prior, 1998). The study also focuses on English L2 writers' development of writing and multimodal competence. This focus has several pedagogical implications, particularly for the ESL context in Ghana. Among other things, it is hoped that the results of the study will introduce a new perspective into ESL education in Ghana, particularly addressing and helping strengthen the ways adolescent learners use different technologies to compose multimodal texts and improve their writing competence. Also, as the spread of technology continues to influence the way we think about, teach, and enact writing (Belcher, 2008; Canagarajah, 2006), assisting adolescent L2 writers in Ghana to enhance their multimodal communication competencies has

implications for preparing students to succeed first in the classroom, and later in their chosen careers (Block, 2008, p. 16).

Overview of Conceptual Framework

As stated earlier in this chapter, the purpose of this study was to investigate (seek to understand) how adolescent English L2 writers develop writing and multimodal competence through multimodal activities. By putting the spotlight on students' multimodal activities and how they may influence students' writing competence, I am particularly pushing forward the idea of placing multimodality at the center (and not on the fringes or margins) of English L2 writing research and pedagogy, and pointing to its significance in reconceptualizing English L2 writing in the 21st century (Canagarajah, 2006; Hyland, 2009; Royce, 2002; Stein, 2008).

In what follows, I discuss the perspective of multimodality I have adopted in this study by drawing on specific theoretical lenses in the literature. These theoretical lenses include social semiotic approach to multimodal representation (Halliday, 1978; Kress, 2009; Stein, 2008), and sociocultural theory of writing, focusing particularly on cultural historical activity theory (CHAT) (Engeström, 1987, 1999; Lantolf & Pavlenko, 2001; Lantolf & Thorne, 2006; Prior, 1998, 2006). Following this, I discuss how this perspective shapes the way I have conceptualized English L2 writing competence. Here, I draw on the framework for describing progress in multimodal text making (Bearne & Wolstencroft, 2007), the theory of expansive learning (as a component of CHAT; Engeström, 1999, 2009), and the Model of Domain Learning (Alexander, 1997, 2003, 2005; Alexander & the Disciplined Reading and Learning

Research Laboratory, 2010) as theoretical lenses to understand the adolescent English L2 writers' path to multimodal and writing competence.

Social semiotics approach to multimodality

I take a social semiotics approach to understand multimodality as a framework for this research. Multimodality refers to the use of several semiotic resources to construct, represent and communicate meanings. It highlights the fact that communication, representation and meaning making are processes that always draw on and combine different modes (such as language and images). The combination and integration of modes to make meaning is referred to as *intersemiotic relations* or *multimodal ensemble* (Kress, 2010; Kress & Van Leeuwen, 2001). I take a social semiotics approach to multimodality because I want to understand the adolescent L2 writers' multimodal practices as socially and culturally constructed activities (Stein, 2008).

This perspective of multimodality is based on social semiotics. Social semiotic theory is concerned with the making and using of signs in specific social contexts. It is based on a social semiotic account of language developed by Halliday (1978). In this account, Halliday conceptualized meaning making as a choice from a range of interlocking options. Halliday argued that the grammar of language is not simply a set of rules, but “a resource for making meaning” (1978, p. 192). Kress and van Leeuwen (1996, 2006) extended the idea of meaning making as choice beyond language, into visual communication. They argued that visual modes, like images, have their specific grammars and can be analyzed for meaning. Thus, a social semiotic analysis is concerned with “comparing and contrasting different modes,

analyzing how they work together in multimodal ensembles” (Stein, 2008). Using a social semiotic approach to multimodality allowed me to analyze the adolescent L2 writers’ multimodal texts to understand how the different modes they combined in their texts worked together to communicate their intended meanings.

Sociocultural theory of L2 writing

The approach I take to understand adolescent L2 writers’ multimodal composing activities is also informed by a sociocultural theory (SCT) of L2 writing. SCT is a system of ideas on the development of the mind. Mind and consciousness, from a SCT perspective, are social in nature (Vygotsky, 1978, 1986; Wertsch, 1991). They are fundamentally the result of the internalization of socially and temporally bound modes of thinking, feeling and behaving. With this theory, learning is also a social phenomenon intrinsically connected with “specific social, cultural, historical, and institutional contexts” (Hyland & Hyland, 2006, p. 23).

In my study, I focus on Engeström’s cultural-historical activity theory (CHAT or simply, activity theory), and discuss how it informs my research. CHAT is a theory of learning and development, which places emphasis on activity system as unit of analysis. Activity system refers to the network of elements that work together to produce an outcome. Minimum elements of this system include the subject, object, mediating artefacts, rules, community, and division of labor.

By focusing on activity system as unit of analysis, CHAT maintains that humans (*subject*) construct their knowledge (*object of activity*) through actions and interactions with others (*division of labor*), mediated by cultural tools or *artefacts* (such as language, computers, digital cameras). These actions and interactions take

place in historically defined situations (*community*), are guided by *rules* and result in the development of intellectual tools and new patterns of collaboration (*outcome*) (Engeström, 1999; Cumming, 2006; Lantolf & Pavlenko, 2001; Yamagata-Lynch, 2010).

Prior (1998, 2006) draws on CHAT to conceptualize writing as a socially and historically organized activity in which individuals or groups of people use cultural tools (e.g. languages and technologies) to produce and disseminate meanings in texts. Paul Prior's explanation is that seeing writing as mediated and distributed means recognizing that all writing is collaborative, involving divisions of labor and forms of coauthorship. In this sense, writing is not just the action of a single writer, but a situated literate activity that involves individuals in different forms of interactions aimed at making and representing meanings.

In this research, I draw on CHAT to help me understand and analyze students' multimodal composing as situated literate activities; that is, as actions that do not stand alone as the discrete acts of the writers, but that emerge as a confluence of many activities carried out with others in specific situations of the classroom and other sites of meaning making, such as the computer lab, home and the writers' social and cultural communities (Prior, 1998, 2006).

Multimodality and English L2 writing competence

The notion of multimodality (from a social semiotic perspective) has influenced the way researchers, teachers, and students perceive and describe writing. The definition of writing in relation to producing verbal or alphabetic (written) texts is changing. Researchers, teachers and students now pay more attention to how information and

communication technologies (ICT) enable individuals to mesh (verbal) text, video, audio and image together to make meaning (Royce, 2002). In other words, the notion of multimodality points the field of English L2 writing towards a new understanding of writing, and of its research and pedagogy (Bearne & Wolstencroft, 2007; Wysocki, 2004). Canagarajah (2006, p. 26) explains this new understanding succinctly:

Texts have become polysemic, multimodal and multilingual. That is, texts now include symbols other than the alphabet (such as icons, images and sound), modalities other than writing (such speech, graphics and moving images), and languages other than English (as diverse dialects, registers, and language now inhabit the same textual space). As texts have changed, so are our practices of reading and writing them.

Suresh Canagarajah made this observation in connection with addressing the issues that needed attention as TESOL (Teachers of English to Speakers of Other Languages) turned forty, an overview in which he sought to delineate the direction of pedagogical developments in the field of English as a second language education and research. As Canagarajah indicates, the nature and notions of literacy are changing. Our understanding about literacy has expanded beyond just the acts of reading and writing (in the sense of decoding and encoding printed- texts) to include the notion of engaging in educational practices that allow individuals to construct knowledge about their world and about themselves through multiple modes, and to become active participants in and contributors to the changing nature of the world they know and in which they live.

In light of this changing trend century, I conceptualize L2 writing in this study to include the use of different modes (i.e. written language and images) in the same text. As Hyland (2009, p. 59) observes, “Writing now means ‘assembling text and images’ in new visual designs, and writers often need to understand the specific ways of configuring the world which different modes offer.” Following this understanding, I also suggest that L2 writing competence needs to describe more than linguistic competence; it should include multimodal competence, which I describe in this study as progressing from predominantly verbal composing to multimodal composing, as well as the ability to decide which modes to use to meet one’s purpose and communicate one’s message to an audience (Bearne & Wolstencroft, 2007; Kress & Bazerman, 2009; Royce, 2002).

My reasons for identifying word-based composing as the starting point for, and integral part of, multimodal competence are two-fold. The first reason is that word-based composing reveals schools’ biases toward written texts. In spite of the changing nature of texts (Canagarajah, 2006; Hyland, 2009), word-based texts are still privileged in schools and are still the major means of assessment of learning in school contexts. It is practical, therefore, that in conceptualizing multimodal competence in relation to school-base learning, researchers and educators begin from what school privileges and expand their notion from there.

The second reason is that the conceptualization of L2 writers’ multimodal competence need to seek continuity with existing understanding of, and opportunities for, written communication. Such an approach will make it possible for writers to draw on their existing funds of knowledge about writing and also become aware of

the tensions inherent in their efforts at expanding their knowledge about written communication through multimodal composing.

Three main theoretical lenses informed my understanding of L2 writing competence: (i) the framework for describing multimodal text making (Bearne, 2009; Bearne & Wolstencroft, 2007), (ii) the theory of expansive learning (Engeström, 1999, 2009) and (iii) the Model of Domain Learning (Alexander, 1997, 2003, 2005; Alexander & the DRLRL, 2010). In this overview, I explain these theoretical frameworks briefly and indicate my reasons for adapting them. I will take up a detailed discussion of these theoretical frameworks in chapter two.

Framework for describing multimodal text making

The framework for describing multimodal texts suggests four stages of multimodal text making: from a multimodal text maker in the early stages through to being an increasingly assured multimodal text maker, growing in experience, then becoming a more experienced and often independent multimodal text maker and later an assured, experienced and independent multimodal text maker (Bearne, 2009; Bearne and Wolstencroft, 2007).

Bearne and Wolstencroft explain that at every stage, a writer's progression in multimodal text making is marked by increasing ability to (i) decide on mode and content for specific purposes and audiences (e.g., deciding on words rather than images, or deciding between images to include in text, or selecting appropriate content to express personal intentions); (ii) structure texts (e.g., structure longer texts with visual and verbal cohesive devices); (iii) use technical features for effects (e.g.,

choose language, punctuation, font, typography and presentational techniques to create effects and clarify meaning); and (iv) reflect on their composing activities (e.g., explain choices of modes(s) and expressive devices, including words and images).

Expansive learning theory

The expansive learning theory describes learning as a process of expansion (Engeström, 1987, 1999, 2009). Expansion is “the result of a transition process from actions currently performed by individuals to a new collective activity” (Sannino, Daniels and Gutierrez (2009, p. xi). The transition process from action to activity is considered *expansive* when the object is transformed, and when individuals become aware of the contradictions and tensions inherent in their current activity (e.g. composing word-based or written texts) in light of new forms of activities (e.g. composing multimodal texts). These tensions and contradictions are not regarded as defects in the activity system, but as opportunities for development (Engeström (1999b).

Using expansive learning theory as theoretical lens, I describe L2 writing competence as a process of development, in which writers transform the object of their activity (i.e., from composing predominantly written texts to composing multimodal texts), and are aware of the struggles and challenges inherent in this process. I also see competence as progress that writers make along identifiable yet complex stages of learning and development, a view that is captured in Alexander’s (1997; 2003) Model of Domain Learning.

Model of Domain Learning (MDL)

MDL is a developmental model of literacy (i.e., reading and writing) that encompasses systematic changes across the lifespan (Alexander, Jetton, & Kulikowich, 1995; Alexander, Murphy, Woods, Duhon, & Parker, 1997; Murphy & Alexander, 2002). The goal of the MDL is improved student learning and development. A central argument of this model is that efforts made at understanding competence and at helping learners become competent readers and writers should focus on how learners' knowledge and capacities deepen, expand, or transform over time and with experience (Alexander, 2003; Alexander & the DRLRL, 2010).

In this research, I used MDL (Alexander, 2003) and the theory of expansive learning (Engeström, 1999) to help me analyze adolescent English L2 writers' multimodal and writing competence. As I understand them, both MDL and expansive learning theory focus on transformation, but from different angles. Expansive learning focuses on **contradictions** in the activity system as the driving force for development. MDL places emphasis on the **interplay** of knowledge, strategic processing and interest as the bedrock for developing competence in literacy. By using these theoretical lenses to complement the framework for describing multimodal text (Bearne, 2009), I sought to understand the changes in English L2 writers' competence over time, along with the challenges (contradictions) in the developmental process. This will be discussed in detail in chapter two.

Definition of Key Terms

Throughout this paper, key terms are explained in the context of their usage. However a few have been defined upfront because of their central role in helping us understand

the arguments and perspectives expressed in this study. The terms defined here include *multimodality*, *multimodal pedagogy*, and *mode (or semiotic resource)*.

Multimodality

Multimodality is defined as the “use of several semiotic modes in the design of a semiotic product or event” (Kress & Van Leeuwen, 2001, p. 20). Its starting point is to extend the social interpretation of language and its meanings to the many and different semiotic resources that people draw on to make meaning in specific cultural contexts, including the use of image, gaze, speech, gesture and writing (Jewitt, 2009b). From the perspective of multimodality (and drawing on social semiotic approach), language itself (that is, its linguistic and verbal/word form, and the grammar associated with it) is seen as one of many semiotic resources, and cannot stand alone in the process of making meaning. To put it differently, in a “multimedia [and] multimodal landscape, [offering] linguistic meanings alone is not enough” (Jewitt, 2009b, p. 19; see also Kress 2010).

This is not an attempt to ‘side-line’ language. Rather, as Jewitt (2009a) and Scollon and Scollon (2009) argue, multimodal perspectives have been influenced significantly by the study of language and vice-versa. Jewitt (2009b) explains it thus:

A key aspect of multimodality is indeed the analysis of language, but language as it is nestled and embedded within a wider semiotic frame.

This offers new ways to explore and understand language, and its place in a multimodal communicational landscape. (Jewitt, 2009 b, p. 3)²

² I take up further discussion on the tensions between language and multimodality in chapter two, under the sub-heading *Language and Multimodality*.

With this in mind, and in the light of my focus on writing, I explain multimodality to mean bringing different modes together with appropriate content, structure and tone to suit audience, context and purpose (Matthewman, Blight & Davies, 2004).

The definition of multimodality in this research also highlights how adolescent L2 writers' use of integrated technologies helps them to construct and represent meaning. *Integrated technologies* refers to the use of visual stimuli generated by different technologies including digital cameras, video, computers and computer generated texts, alongside the more traditional 'technology' of writing, artwork, model making and drama (United Kingdom Literacy Association, 2004). Using the concept of integrated technologies in this study made it possible to draw on both modern technologies and innovative teaching practices as well as traditional technologies and practices as complementary resources for improving students' L2 writing in English.

Multimodal pedagogies

The term 'multimodal pedagogies' has been used to refer to curriculum, pedagogy and assessment practices which focus on mode as a defining feature of communication in learning environments (Stein and Newfield 2004; Stein, 2007). In other words, there is recognition that all acts of communication in classrooms are multimodal: there is no monomodal communication. Multimodal pedagogies acknowledge learners as agentive, resourceful and creative meaning-makers who communicate using the communicative potential and multiple resources of their bodies and of their environment to interconnect. Learners engage with different

modes differently: they have different relationships, histories and competencies in relation to modes.

Acknowledging the agency and creativity of writers does not diminish the different roles that teachers play in multimodal pedagogies. As Cope and Kalantzis (2001, 2007) indicate, teachers have the responsibility to offer overt (explicit) instruction within multimodal and multiliteracies pedagogies. For instance, they propose that teachers should introduce students to specific and explicit metalanguages, which describe and interpret the design elements of specific modes. Also, teachers should be in the position to offer any form of technical (such as technological) assistance to students to help them engage in producing multimodal texts. For example, in this study, because students needed to use computers and digital cameras to help them create different multimodal texts, I provided specific instructional and technological support to students to help them succeed (see chapter three for details).

Mode

Within social semiotics (i.e. social approach to the study of signs and meaning making), a mode is understood as socially- and culturally-shaped material. Modes are the effect of the work of culture in shaping materials into resources for meaning making. In other words, in a specific context (time and space) modes are shaped by the daily social interaction of people (Jewitt, 2009). It is in this sense that modes are said to be semiotic resources; that is, they are the actions, materials and artifacts we use for communicative purposes. Some resources or modes are more effective than others depending what communicative purpose we want to achieve. In this proposal,

unless otherwise stated, the terms mode, semiotic resource, and resource will be used interchangeably.

Brief statement of methodology

The research was conducted in an English classroom within a junior high school located in a small village in southern Ghana. Forty-eight second year junior high school students (JHS 2) in the selected school participated in the study. Both qualitative and quantitative data were collected concurrently (i.e. in a single-phased study; Creswell, 2009) through an embedded, developmental case study design (Brown & Rodgers, 2002; Yin, 2009). This design was selected to examine how adolescent English L2 writers engage in producing multimodal texts, and how the multimodal approach influenced the development of their writing competence.

A ‘case’ (of a phenomenon) is said to be developmental when its observations and analyses focus on changes that occur over a measurement period (Cooper, 2006; Yin, 2009). Developmental case study designs integrate features of developmental research into an intensive study of a ‘case’, and aim at investigating patterns and sequences of growth of the ‘case’ over a specified time period. Applying this methodological framework to the study enabled me keep track and offer thick descriptions of the changes that occurred in the adolescent L2 writers’ multimodal composing practices over a period of three months.

Delimitations (Scope of the study)

It goes without saying that students learning practices (in the classroom context) are interwoven with teaching practices. In this research, the teaching activities have been discussed in detail (see description in chapter three and analysis in chapter four);

however, there is no separate question on teaching. In order to delimit the scope of the study, I focused my analysis mainly on the adolescent L2 learners and the development of their writing and multimodal competence.

Overview of Research

This research report consists of six main chapters. In this introductory chapter, I have presented the rationale and significance of conducting a study to investigate what possible influences a multimodal approach might have on the ways adolescent English L2 writers develop writing and multimodal competence. In light of recent interest in how different technologies have influenced the way we think about, teach and enact writing, I have conceptualized English L2 writing to include a multimodal framework and argued, like many scholars in the field, that “the need to understand the complex ways in which speech and writing interact with ‘non-verbal’ modes can no longer be avoided” (Jewitt, 2009, p. 3).

Chapter two takes up a detailed discussion on these arguments and insights through a review of the literature. The central focus of this review is to examine how adolescent English L2 writers develop writing competence through multimodal activities. I discuss how multimodality is conceptualized in relation to L2 writing pedagogy and competence, synthesize and critique empirical research relating to multimodality and English L2 writing, and examine how these discussions connect to my research focus.

Chapter three focuses on discussing the methodology for the study (see statement of methodology above).

The findings of the study are organized around the two research questions and will be reported in two interrelated chapters. Findings related to question one are reported in chapter four, which focuses on using activity theory to trace the process of the adolescent L2 writers' multimodal composing experience over a three-month period.

In chapter five, I adopt a social semiotics perspective in analyzing data and presenting findings relating to research question two. The findings presented in chapter five indicate that the adolescent English L2 writers' engagement in multimodal activities helped them to develop their multimodal and writing competence in very significant ways.

Chapter six synthesizes the findings of the study and discusses their implications for adolescent English L2 writing pedagogy and research.

CHAPTER 2: LITERATURE REVIEW

Introduction

In this review, I take up the challenge to examine the complexities associated with using multimodality as a framework for developing writing competence among adolescent English L2 writers. Considering that multimodality is a relatively new framework regarding L2 writing research, I also want to examine where such a phenomenon fits into the broader picture of *doing* L2 writing research. The purpose for undertaking this task is four-fold: (1) to place this research focus in broader historical and research context; (2) to synthesize theoretical concepts on multimodality (and multiliteracies) to gain new perspectives; (3) to identify the main methodologies and research techniques that have been used to investigate how engaging in multimodal activities might influence L2 composing practices and indicate how this informs my research; and (4) to identify gaps in the literature and discuss how my research is designed to respond to some of these gaps. I have adopted such an integrated approach to this review to enable me develop a productive insight (Randolf, 2009) into the interconnectedness between multimodality (multiliteracies) and English L2 writing, and to examine the implications of this interconnectedness for my research focus.

General organization

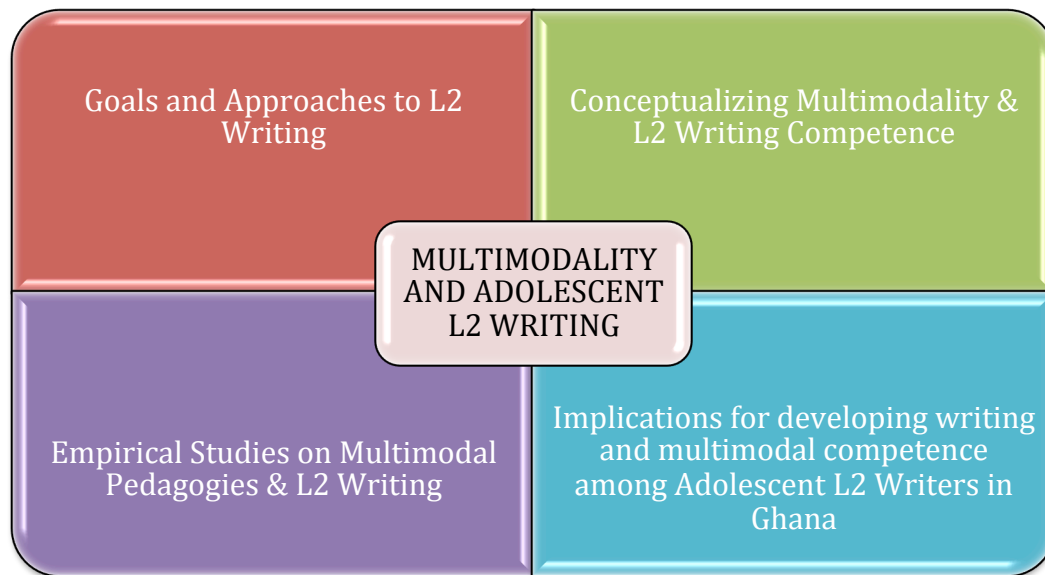


Figure 1. Literature review matrix

The matrix in Figure 1 gives a graphic presentation of the major sections of this review. The central focus of this review is to examine how adolescent English L2 writers develop writing competence through multimodal activities. To accomplish this feat, the review is divided into four major sections. Section one places this research focus in broader historical context. Section two takes up a discussion on my theoretical framework by focusing on how multimodality is conceptualized in relation to L2 writing pedagogy and competence. In the third section, I will synthesize and critique empirical research relating to multimodality and English L2 writing. The fourth major part of the review focuses on the implications of these studies for practice and research. I focus particularly on how these discussions influenced my research focus, relating particularly to adolescent English L2 writers in Ghana.

Scope and methodology for selecting articles

The theoretical and methodological tools of multimodality have been applied to a wide range of research in different content areas and disciplines, such as in math and science (Lemke, 1990) Arts/Visual Studies (Mavers, 2009), Communication (Finnegan, 2002) and English (Stein, 2008). In the theoretical section of this review I will draw on insights from all these areas of research. However, in analyzing empirical studies, I focus particularly on studies relating to English education. My attention is specifically on studies that focus on adolescent (middle and high school) English language learners. However, studies relating to other age groups (elementary and college) will be selected for their relevance to the arguments and perspectives expressed in this review.

Methodology for selecting articles for the review entailed searches of various electronic databases and hands on searches of particular journals and reviews. ERIC, EBSCO and JSTOR were helpful databases. *TESOL Quarterly*, *The Modern Language Journal*, *Journal of Second Language Writing*, *Written Communication*, and *Journal of English Studies in Africa* were also useful sources. Also relevant were reviewed chapters selected from Carey Jewitt's *Handbook of multimodal analysis*, which contains twenty two reviewed chapters on the subject; MacArthur, Graham, and Fitzgerald's (2006) *Handbook of writing research*; and the *Handbook of adolescent literacy research* edited by Christenbury, Bomer and Smagorinsky (2009). In order that the literature review would address the focused questions, articles selected go as far back as the 1980s, with a few foundational readings from the 1970s.

SECTION I: Goals and Approaches to L2 Writing

Historically, what goals and approaches have been adopted in teaching L2 writing?

This section seeks to address this question as a way of placing the research focus within broader historical and research context. To accomplish this purpose the review in this section is situated within the framework of theoretical principles in L2 writing, with specific reference to context, nature, and goals of L2 writing. The discussions on approaches to L2 writing are explored within the product-process debate and the post process era perspective, citing the academic literacies and genre approach as examples. This is followed by a discussion on the critical literacy approach.

Understanding the Context and Nature of English L2 Writing

I am primarily concerned with an ESL teaching and learning context. Context is understood in this review as the cultural, political, social, situational and economic dimensions of the writer's text and composing practices (Ferris and Hedgcock, 2005; Silva 1990). Context also refers to the experiences of learners and teachers, as well as the activities they engage in creating a classroom environment needed for second language learning (Gebhard, 1999). This way of looking at "context" allows researchers and teachers to consider the identity of the L2 writer, the sociology of the writer, the purpose for writing, the subject matter or particular message, the medium used, and the audience addressed.

Defining the context has implications for classroom applications. The definition enables us to become aware of the various factors that make the teaching of writing what it is - syllabus, materials, methodology/approach, learner needs, teacher

ability and socio-cultural situation. Highlighting the importance of defining one's teaching context, Silva (1994) proposes that for an effective teaching of writing, teachers need to understand the relationships, which exist between the writer, reader, text and context. For him, this will lead to viable approaches to the teaching of ESL writing. He states that an ESL situation needs a purposeful and contextualized communicative interaction. Also, because context highlights the identity and needs of the L2 writer, it helps in understanding the nature of L2 writing. A chief characteristic distinguishing ESL writers from their monolingual, native speakers (NS) is that ESL learners come to the classroom with the ability to speak, and often write, one or more languages than English. This multilingual, and in some cases multiliterate knowledge, gives ESL students a unique status as learners that entails a set of linguistic, cognitive and metacognitive skills, and which may be very different from the skill sets of monolingual, NS of English (Carrell & Monroe, 1995; Harklau, Losey, & Siegel, 1999; Ferris and Hedgcock, 2005).

With regard to cognitive and metacognitive skills, I argue that unless these are understood from the perspective of sociocultural theory (SCT) (Vygotsky 1978), it might be difficult to decipher a fundamental difference between ESL and native speakers of English. SCT is a system of ideas on the development of the mind. Mind and consciousness, from an SCT perspective, are social in nature. They are fundamentally the result of the internalization of socially and temporally bound modes of thinking, feeling and behaving. With this theory, learning is also a social phenomenon intrinsically connected with "specific social, cultural, historical, and institutional contexts" (Hyland and Hyland, 2006, p. 23). I like to suggest then, that

the unique nature of L2 writing should be seen as more sociocultural than psycholinguistic.

Wolff (2000) presents a slightly different nuance on this debate. Exploring the ways in which the results of L2 writing research can be used in teaching writing, Wolff indicates that from a psycholinguistic angle L2 writing skills are both different but at the same time dependent on L1 writing skills, and from an instructional angle the L2 learner unconsciously develops specific writing skills that need to be taught in order to promote L2 writing competence. This author's conclusion is that learning to write in an L2 and actually writing in an L2 are probably the best ways of learning the second language.

Again, let me comment that instructional choices and practices are not decontextualized activities. They are embedded in and assume contextual and sociocultural characteristics. Thus, what Wolff (2000) describes as “instructional angle” could in fact be influenced largely by sociocultural factors.

Defining Goals for Teaching and Learning L2 Writing

Brown (1995) defines goals as a “general statement concerning desirable and attainable program purposes and aims based on perceived language and situation” (p. 71). Ferris and Hedgcock (2005) also recognize goals as “global targets around which particular instructional programs and syllabi are designed” (p. 87), and that goals for a particular program and its course sequence should address both the needs of students and requirements of educational institution.

I appreciate the connection these authors make between goals, instruction, syllabi, students needs and institutional requirements. However, inherent in the definition is the tension between student needs and institutional requirements. Which of these exerts more influence with regard to how goals relate to instructional practices? I ask this question with the situation in Ghana in mind, although the observation may be applicable to other educational and cultural contexts. Teachers are aware of the communicative, academic and occupational needs of students; yet, in my opinion, the weight that tilts the instructional “scale” is more institutional than learner needs. Examination-oriented approaches in the teaching-learning process are usually shaped by pressures other than student needs.

In defining goals for teaching L2 writing, I wish to place the learner at the center (Cummins, 2006). L2 student writers need to be regarded as the originators of their texts (Johns 1994) through which they discover themselves (Berlin 1998) and meet their needs (Flower, 1985). We need to keep in mind that L2 writers have a relationship with their societies that have helped to shape or construct their identity as writers, and which they can also influence or help to construct through their writing (Norton, 1997). We also need to understand that beyond their local culture, there is the global culture [understood as world-wide] of which they have the legitimacy to be part. Their purpose, message, language and resources and audience for writing need to be simultaneously intranational and international in perspective. Their writing experience, to borrow Lin, Wang, Akamatsu, and Mehdi Riazi’s (2002) term, can be described as a *glocalized* experience.

With these characteristics in mind, I propose that teaching L2 writing should aim at developing writers who have discovered their voices, are competent in drawing on different cultural and semiotic resources (including different modes and digital tools) to make meaning, and can communicate their thoughts and experiences as competently and effectively as possible. These should be writers with sense of originality, creativity and responsibility, sensitive to the needs of their audience or readers. L2 learners and users of English should become writers who aim at sharing who they are and being understood by their intended audience, local as well as global. The goals I am proposing are intentionally broad and flexible to allow different learners to identify what kinds of writers they want to be, or to define their own set of goals, depending on their experiences and needs.

Achieving the Goals: What Approaches?

What teaching approaches to L2 writing are appropriate in achieving the described goals? I discuss four major trends: the product-process debate, the post-process era, the critical literacy approach and the multimodal (multiliteracies) approach.

Product-process debate

For many years, the product-process debate occupied the center stage with regard to approaches to teaching both L1 and L2 writing. The product approach can be described as a traditional approach in which students are encouraged to imitate a model text. This approach is interested in the aim of a task and in the end product (Kroll 1994). The approach also focuses solely on accuracy, appropriate rhetorical

discourse and linguistic patterns. The idea is that grammar study, handbook rules, and exercises lead to good writing.

The process approach focuses more on the varied classroom activities, which promote the development of language use. In this approach, content, ideas, and the need to communicate determine what form to use. The emphasis is on expressing ideas and conveying meaning. It also provides a positive, encouraging, and collaborative environment within which students can work through their composing processes (Silva 1994). The process approach also has a number of inter-connected stages. Buscemi (2002) and Silva (1994) identify four major inter-connected stages in the process: prewriting, drafting, revising and editing. In the process approach writing is seen as an act of communication in which the writer addresses a particular audience in order to achieve a particular purpose. It is also assumed that content determines form and that good writing is evolved writing.

The post-process era

Some of the groundwork for constructing a post process framework was laid by constructivists, who recognized that writing, as a form of literacy, is an inherently social, transactional process that required mediation between the writer and his or her audience (Gee, 1996, 1998; Ferris and Hedgcock, 2005). As an interactional activity, writing is often done with the audience in mind. Writers seek to know and understand the needs and expectations of their readers in order to construct texts that meet these expectations (Hyland, 2003). According to this social constructivist view, the writer's audience forms a target discourse community, which largely determines knowledge, language and the nature of both spoken and written discourse.

The concept of apprenticeship finds a home in the post-process era. The discourse community is described as comprising expert members and apprentice members who operate on the basis of implicit and explicit public goals (Swales, 1998). These members often have participatory mechanisms that they use to transmit information and feedback, as well as texts types that promote their goals.

The genre approach

The academic literacies and genre approach to writing is a good example of this socially grounded perspective on literacy. L1 and L2 writing professionals – researchers and practitioners - posit a strong connection between social practices and literacy. For instance, Ann Johns (1997) refers to this connection as a “socioliterate” practice in which learners acquire “literacies principally through exposure to discourses from a variety of social contexts” and through these exposures to “gradually develop theories of genre” (p. 14). As Johns explains, holding this view has a lot of implications for literacy instruction. For example, from a socioliterate standpoint, literacy instructors can encourage students to draw from their past experiences and strategies to develop new approaches to texts and tasks; research into their literacy and text histories, into current approaches to literate practices, and into strategies that work in a variety of contexts; and investigate and critique the literacy practices of others, particularly those with more advanced proficiency.

The critical literacy approach

In the 1990s, L2 writing in general and ESL in particular took a more sociopolitical and critical pedagogy approach. A major thread in applications of critical pedagogy to

literacy stems from the charge that the constructivist views neglected the sociopolitical issues affecting life in and outside the academic environment. The critical pedagogy approach is thus seen as an alternative that challenges the status quo and liberates the learner. Shor (1999) defines critical literacy (CL) as a way of using language to rethink our identities in the world; it is an attitude towards history, a way of learning to read and write that leads to our becoming conscious of our experiences as historically constructed within specific contexts, specific power relations. Put differently, CL offers learners a more adequate and accurate opportunity to “read” the world, in order to “re-write” it into a formation in which their identities, legitimate aspirations and interests are more fully present.

Integrating the Approaches

What we need to realize is that these approaches are not necessarily incompatible. Rather, they are complementary, and can be integrated to help L2 learners and users of English become better writers. Kroll (1994), for instance, believes that process writing can be integrated with the practice of studying written models in the classroom. She is of the view that once students have written their first drafts, model texts can be introduced as texts for comparison. What teachers have to do is encourage as much student participatory writing as possible and then help students to criticize their own work in the light of the model texts.

We could also integrate into this process a critical literacy perspective, aware that students are more likely to engage in activities that have some relevance to their situation (Moje, 2008). As Moje (2008) explains, a number of studies have argued that young people read and write both to enact and to explore identities and

challenges of their lives. She therefore considers reading and writing as “powerful” literate practices that can allow young learners to “engage with the world while they also make decisions about who they want to be and what they want to do” (p. 62).

We realize, however, that all these goals and approaches focus on word-based understanding of writing and literacy. As I have argued earlier, this conception could be broadened to include other modes. The next section takes up this discussion.

SECTION II: Bringing Together Theories of Multimodality and Learning

In chapter one and the previous discussions, I have hinted at the close connection between multimodality, literacy, and L2 writing. I have stated that literacy studies in general and L2 writing in particular are taking a multimodal turn (Bateman, 2008; Kress, 2010; Lemke, 1999; Tardy, 2009). In this section I further this discussion by examining how multimodality has been conceptualized, and how this conceptualization might influence the ways we think about second language writing. To address this focus, I do the following two things:

1. I discuss the theoretical assumptions that underpin multimodality; and
2. I discuss how the notion of multimodality combines with other significant theories to influence the way I frame research on English L2 writers’ multimodal composing activities and competence building. I will focus specifically on the framework for describing multimodal texts proposed by Bearne and Wolstencroft (2007), on cultural historical activity theory (CHAT) (Engeström, 1999) and Model of Domain Learning (MDL) (Alexander, 1997, 2003, 2005).

What Is Multimodality, And What Are Its Underpinning Assumptions?

Multimodality refers to the use of several semiotic resources to construct, represent and communicate meanings. It highlights the fact that communication, representation and meaning making are processes that always draw on and combine different modes. (Kress & Van Leeuwen, 2001; Kress, 2010; Jewitt, 2009). This brief explanation reveals several interconnected theoretical assumptions underpinning multimodality. These assumptions relate to 1) the place of language in multimodal communication and representation; 2) the potential of a mode in a multimodal ensemble to realize different communicative works, and the configuration of modes to orchestrate meanings; and 3) the social nature of modes and meanings (Jewitt, 2009). I discuss each of these assumptions.

Language and multimodality

The first theoretical assumption underpinning multimodality is that human communication and meaning-making processes involve more than the use of language, and that language is part of a multimodal ensemble (Finnegan, 2002; Jewitt, 2009). Multimodal ensemble refers to the interrelationships between modes in a meaning-making process, such that the meanings constructed bear the mark of the modes that are present in the process. One way of illustrating this is by looking at individuals engaged in a conversation. What usually happens is that as the individuals try to construct and communicate meaning they use speech (language), gestures, facial expressions, and movements to make sense of their communication with each other. Finnegan (2002) sees this as a fundamental human experience, which renders all forms of human communicating multimodal. In this sense, then, multimodality

“looks beyond language to explore a wide range of multimodal communicational contexts” (Jewitt, 2009, p. 2).

By making this claim, proponents of multimodality step away from the widely held understanding of language as the most significant mode of communication, particularly in the contexts of teaching and learning. This is by far the most radical and most contested assumption underpinning multimodality. As Jewitt (2009) observes, “Multimodality is sometimes misunderstood as an attempt to ‘side-line’ language” (p. 2).

Scollon and Scollon (2009) argue against this misunderstanding by showing the way multimodal perspectives and language studies have influenced each other, amidst tensions and complexities. Among other things, they suggest that the tension inherent in the discussions about multimodality and language is rooted in the histories and complex understandings of these terms. As they put it:

‘Multimodality’ is a new term. ‘Language’ is a very old one. ... The task of relating multimodality and language, then, is a task of relating this new and fresh but still largely amorphous perspective on human communication to a complex perspective which is ancient, richly developed, and historical, and one which is also differently naturalized in different cultures. (Scollon & Scollon, 2009, pp. 170-171)

In this complex relationship, language has played an important role in the development of multimodality. In many cases, what is known about language has been used as a model for organizing knowledge about non-linguistic modes. For instance, there has been a lot of research done on multimodal discourse analysis

(Jewitt, 2009; O'Halloran, 2004). Some of these analyses have focused on three-dimensional material objects in space – such as the multimodal discourse analysis of the Sydney Opera House (O'Toole's, 2004); a museum exhibition in Singapore (Pang Kah Meng, 2004); and a semiotic study of Singapore's Orchard Road and Marriott Hotel (Alias, 2004). What is significant is that not only are such material objects regarded as having 'discursive' qualities, uses and influences, but also that the analyses are based on the notions of systemic functional linguistics, particularly on Halliday's (1978) description of the social functions of language.

Halliday theorized that, as a social construct, language has three metafunctions or meaning potentials: *ideational* (i.e., *logical and experiential*) function refers to how people use language as a resource to represent what goes on in the world, as well as their experiences of the world; *interpersonal* function refers to how language is used to represent the kinds of social relationship in which people engage in the world; *textual* function describes how these relationships and experiences are organized into texts.

Halliday's concept, based primarily on how meaning is achieved through grammar and language, is extended to apply to all modal or semiotic resources (Jewitt, 2009), as is found in the analyses of three-dimensional objects (O'Toole, 2004; Alias, 2004; Pang Kah Meng, 2004). For example, summarizing O'Toole's analysis of the Sydney Opera House, O'Halloran (2004) writes:

In [O'Toole's] paper, the usual definition of 'functionalism' in architecture is significantly extended. Like language, the building embodies an Experiential function: its purposes, the 'lexical content' of

its components ... and the relations of who does what to whom, and when and where. It also embodies a stance vis-à-vis the viewer and user. ...

That is, it embodies an Interpersonal function like language. The Sydney Opera House also embodies a Textual function: its parts connect with each other and combine to make a coherent 'text.' (O'Toole, 2004, p. 2)

O'Toole (2004) himself suggests that using a systemic functional linguistics approach to analyzing the three-dimensional object allows one to identify features that would otherwise be missed. He explains, for instance, that using the notion of metafunctions gives one the opportunity to understand and appreciate what the building means to all those who have interest in it, including the architect, the individual viewer, the Sydney community and contemporary society or future generations.

John Bateman (2008) also supports the idea of using empirical evidence in language studies as a model for constructing frameworks for multimodal analysis. He argues that using linguistic approaches will enable one to uncover, systematically and empirically, the extent to which a multimodal analysis constructs meanings that are analogous to or different from those established for language. He adopts a corpus linguistics perspective for developing a framework for multimodal analysis, which he refers to as the Genre and Multimodality (GeM) model. Offering a rationale for using a linguistic perspective he explains, "We select linguistics because there is no doubt that it is with language that we have now amassed the greatest experience on how complex semiotic artefacts can be structured to carry meanings" (p. 14).

Similarly, Ivarsson, Linderöth and Saljö (2009) take a socio-cultural approach to the multimodality-language debate and make reference to the "apparent

contradiction” between the “multimodal programme” (p. 202) and the socio-cultural tradition. While many of the scholars proposing a multimodal approach react against the dominant role that language and discourse play in meaning making and communication, those with a sociocultural bent emphasize the decisive role that language plays as a symbolic resource. Commenting on these differences, Ivarsson et al indicate that from a sociocultural perspective, non-linguistic modes (such as drawings and pictures) are readily accepted as significant symbolic tools of mediation, and that these tools are not considered “second-order representations to language” (p. 203).

However, as Ivarsson et al explain, there is some sense in which verbal language plays such a dominant role in the sociocultural interpretation of human mediation. As humans, we seek ways to make sense of our identities and environment and to communicate this sense with others. In this sense making and communicating process, we rely on the ways we have been socialized to interpret and make connections between the biological, social and cultural dimensions of our development and existence. We learn to categorize objects, show their similarities and differences, as well as their possible configurations and meaning potentials. The endless communication that goes on in these processes is multimodal in nature. However, “language fulfils a bridging function when engaging in multimodal communication” (Ivarsson, et al, 2009, p. 205).

My take on this debate follows the lines of both the social semiotics and sociocultural perspectives. The argument I make is that while it is important to emphasize the interconnectedness between representational tools and the way they are

brought together to make meaning (semiotic perspective), it is equally beneficial to acknowledge the role of language as the ‘connecting link’ in this kind of interconnectedness (sociocultural perspective). Figure 2 below is a graphic representation of this focus. It shows the overlapping concepts in the social semiotic and sociocultural perspectives of multimodality.

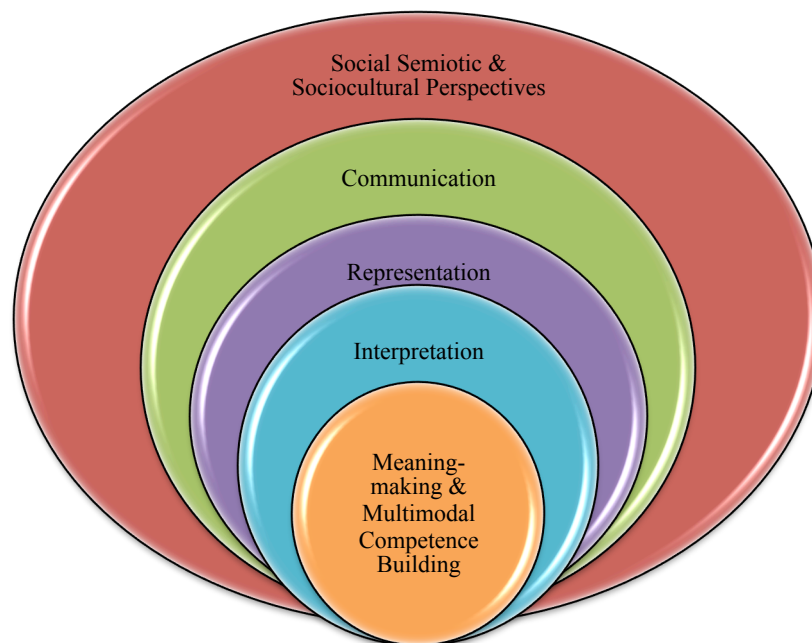


Figure 2. Overlapping concepts within a semiotic-sociocultural frame of multimodality

As Figure 2 shows, inherent in the multimodal perspective are the concepts of *representation* and *communication* regarding meaning making (Jewitt, 2009). A third concept, which is always present but oftentimes less highlighted in the meaning-making process is *interpretation*. In the explanations that follow, I propose that these three concepts may be treated as overlapping concepts in relation to the way we make meaning. I also suggest that, in the case of learning and teaching English L2 writing,

efforts made to assist learners to engage in multimodal meaning making could be extended to include helping them build multimodal competence. In other words, both *meaning making* and *competence building* occupy a central place within the dual sociocultural/social semiotic frame of multimodal L2 writing pedagogy.

Representation and communication are distinct, yet overlapping social practices (Kress, 2010). As Kress explains, representation focuses on how we engage with the world, and on how we translate this engagement and meanings about the world into a material form. Communication focuses on our wish or need to make that representation available to others, in our interaction with them. In engaging with the world we use signs or modes (e.g. gesture, image, gaze, speech, writing, posture, space etc.) to *represent* our thoughts and understandings (i.e. the meanings we make) and to *communicate* these thoughts and understandings to others when we interact with them. The *signs* or *modes* we use are the *material forms* or *material realizations* of our thoughts and understandings (i.e. of our *meanings*). Here, we ‘see’ an inter-dependent relationship between signs on one side, and representation and communication on the other. Both representation and communication depend on the sign or mode for their operation, just as the sign depends on representation and communication for its existence and availability.

Also present and equally important element in this overlapping and inter-dependent relationship between mode, representation and communication is the concept of *interpretation*. Our understanding of the world is always interpretative. We do not necessarily have the same understanding of the world, nor do we have neutral thoughts. From a sociocultural perspective, our understandings and thoughts

are always *mediated*, to use Vygotsky's (1978) term. We 'see' and understand the world through the lenses of our experiences, which always serve as *interpretative tools*. In this sense, then, the *meanings* we construct of the world (any event, situation, person, object etc), as well as the *modes* or *signs* we select to *represent* and *communicate* these meanings, have a lot to do with how we *interpret* what we are 'seeing'.

Thus said, I adopt C. S. Peirce's (1991) interpretation theory to explain how language plays an interpretative role within the multimodal ensemble (i.e. the mix of modes/signs for meaning making). Charles Sanders Peirce, an American philosopher (1857-1913), is known for his contribution to the study of signs and how they are used for meaning making (i.e. Semiotics). In the Peircian model of semiotics, the one who receives the sign is known as the *interpreter*. When a sign is received, the interpreter processes the sign (names and categorizes it; thinks about it; compares it with other signs within the scope of his/her experience, etc) and transforms it into an *interpretant*. The interpretant is the meaning that the recipient/interpreter makes of the sign; which is another way of saying that meaning is an interpreted sign (Kress, 2010).

Applying Peirce's account to our discussion here, I maintain that the processes of interpretation (i.e. naming, categorizing, thinking about, and comparing signs for meaning) depend to a large extent on the use of language, as a mediating tool (Vygotsky, 1978). It is with language that we name, categorize, think about and compare signs. This is where I find a common ground between the semiotics and the sociocultural. In Semiotics, signs or modes have meaning potentials; in sociocultural

theory, signs are used as mediating tools for meaning making (Ivarsson, Linderöth & Saljö, 2009).

The multimodal perspective I have adopted has both theoretical and practical implications. Theoretically, using semiotic and sociocultural lenses allows for an interdisciplinary approach to understanding multimodality as a concept. Particularly, adopting this interdisciplinary approach coincides with the idea of multimodality as a “multipurpose toolkit” (Baldry and Thibault, 2005). As these authors explain, the term multimodality is used to cover “a diversity of perspectives, ways of thinking and possible approaches. It is not a single principle or approach. It is a *multipurpose* toolkit, not a single tool for a single purpose” (p. xv). Kress (2009) also notes that the term multimodality “maps a domain of inquiry” (p. 54), which has gained significance in various disciplines and professions, such as in medicine, psychology, anthropology, linguistics, language education, science and mathematics education; and that in whatever discipline the concept of multimodality is used, theories from the specific discipline are brought to multimodal issues. Thus, from semiotic and sociocultural standpoints, we can, simultaneously, underline how particular modes connect with other resources for meaning making, and point to language as playing a linking role in this relationship among modes.

This brings us to considering the practical benefits, which I discuss in relation to language learning, particularly learning to write in English as a second language. As explained earlier in this review, English L2 learners and writers need to acquire the English language, while at the same time using it to learn other school subjects, or engage in different forms of communication. Adopting a semiotic/sociocultural

perspective has the potential to examine how a multimodal approach might influence L2 learners' acquisition and use of language, as well as how language combines with other modes in the meaning-making process. In other words, because competence in language usage is crucial to the academic and social achievement of English L2 learners and writers, it is only practical to adopt a kind of multimodal approach that supports their learning (Royce, 2002; Stein, 2000, 2008).

Also practical is the fact that in a world-turned-multimodal, schools and society still have a strong interest in speech and writing in its many forms, particularly with regard to teaching and learning English, and for that matter language (Kress, Jewitt, Bourne, Franks, Hardcastle, Jones & Reid, 2005). Using a longitudinal qualitative methodology, these authors – all of them proponents of multimodality – examine the teaching and learning of English in urban classrooms from a multimodal perspective. From a semiotic standpoint, they conclude that the learning and teaching of English focus on meaning in all the ways it is made in culture. In making this assertion, they also quickly note that taking a multimodal perspective does not mean forgetting the relevance of language especially in its oral and written form:

[Speech and writing] are and remain central means of producing that which English is; central means of making the meanings of English material. We might even insist that our emphasis of looking at all the means whereby the meanings of English are materialized entails a more serious look at speech and at writing than hitherto taken. ... A multimodal approach to meaning making provides a fuller, richer and more accurate sense of what language is, and what it is not. (Kress, et. al, 2005. p. 2)

My understanding of the expressed observation is that it places language right where it is supposed to be: in the mix of modes – all of them important to the meaning making process, and each of them unique and significant in the way it shapes meaning – language still occupies a central place. In an English L2 writing classroom, to ignore this will be a disservice to students and society (Janks, 2007). The idea of a mixture of modes is further explained in the second assumption underpinning multimodality.

Mode, multimodal ensemble and communication

The second assumption underpinning multimodality is that, in a multimodal ensemble, each mode has the potential to achieve specific communicative purposes. Kress (2009, p. 54) defines mode as “a socially shaped and culturally given resource for making meaning.” Modes are semiotic resources; that is, they are actions, materials and artifacts we use to achieve different forms of communication. Multimodal ensemble refers to the interrelationships between modes to make meaning. When the resources of different modes are combined, the result is the realization of corresponding, complementary, and often times dissonant meanings that harmonize in an integrated whole (Jewitt, 2009). This way of looking at modes and how they are combined to make and communicate meanings also changes the way we think about written communication.

As a concept, multimodality signals a shift in the ways communication and representation are conceptualized in relation to human interconnectedness and meaning making. Explaining this shift Ruth Finnegan (2002), an anthropologist by profession, offers a comparative and transdisciplinary analysis of communication,

which counters the cognitive and word-centered emphases of the more traditional accounts of communication. From a traditional standpoint, communication is conceptualized as a monomodal process in which messages are transmitted, through language, from a sender to a receiver (Ellis & Beattle, 1986). Finnegan, on the other hand, uses examples from many cultures and historical times and draws on recent research in different disciplines, such as in anthropology, cultural studies, sociolinguistics and animal communication, to explain the multidimensional character of human communicating. She defines communication broadly as “a dynamic interactive process made up of organized, purposive, mutually-influential and mutually-recognisable actions and experiences that are created in a variety of modes by and between active participants as they interconnect with each other” (Finnegan, 2002, p. 29).

A distinctive characteristic about this definition is that it connects our experiences and our human agency to our ability to make and communicate meanings through the use of different modes. All of these happen within, and are influenced by social and Discourse practices. I take up this discussion in the third assumption underpinning multimodality.

The social and discourse nature of mode and meaning

I have emphasized at different parts of this review that, within social semiotics, a mode is understood as an outcome of cultural shaping of a material (Jewitt, 2009). Particular resources come to display regularities due to the way people use them in particular social contexts. This idea is fleshed out in Gee’s (2008) understanding of

how human meaning making and communication practices are shaped by Discourse practices.

Gee (2008) makes a distinction between discourse with a small “d” and Discourse with a capital “D”. Gee uses discourse with a small “d” to refer to “language in use or connected stretches of language that make sense, like conversations, stories, reports, arguments, [and] essays” (p.154). Discourse with capital “D”, on the other hand, is always more than language. Gee’s own definition of a Discourse is as follows:

A Discourse is a socially accepted association among ways of using language and other symbolic expression, of thinking, feeling, believing, valuing, and acting, as well as using various tools, technologies, or props that can be used to identify oneself as a member of a socially meaningful group or “social network,” to signal (that one is playing) a socially meaningful “role,” or to signal that one is filling a social niche in a distinctively recognizable fashion (p. 161).

A Discourse, then, is a way of identifying ourselves as specific persons in specific contexts and at specific times. It indicates how our individual identities are closely connected to how our social group identifies itself in relation to other groups.

Relating Gee’s (2008) explanation on discourse and Discourse to the concept of multimodality, I argue that not only are tools or semiotic resources socially and culturally shaped by specific Discourses (or Discourse communities), but also that the ways we use these resources to make and communicate meanings are shaped by our

socialization into specific Discourse communities. In other words, both the tools or resources and the pattern of using these resources are socially constructed.

In chapter one, I discussed how social semiotic approach to multimodal representation and sociocultural theory inform the way I conceptualize L2 writing. Essentially, I have described L2 writing as a situated multimodal activity. I have also suggested that L2 writing competence could be expanded to describe more than linguistic competence; the description of L2 writing competence may also focus on understanding how writers progress from composing predominantly linguistic texts to composing multimodal texts.

In the sub-sections that follow I further this discussion by paying attention to how the notion of multimodality combines with other significant theories to influence the way I frame the research on English L2 writers' multimodal composing activities and competence building. As I mentioned earlier in this chapter, and also in chapter one, I will focus specifically on the framework for describing multimodal texts proposed by Bearne and Wolstencroft (2007), on the concept of expansive learning (within cultural historical activity theory (CHAT – Engeström, 1999) and Model of Domain Learning (MDL – Alexander, 1997, 2003, 2005).

Framework for Describing Multimodal Text Making

The framework for describing multimodal text is informed by several research projects conducted among elementary and middle school learners, with the overarching goal of trying to understand what it means to get better at multimodal composing (e.g. Bearne, 2003; Bearne & Wolstencroft, 2007; United Kingdom

Literacy Association/ Qualifications and Curriculum Authority, 2004, 2005) This framework describes 4 stages of multimodal competence:

- i. A multimodal text maker in the early stages
- ii. An increasingly assured multimodal text maker, growing in experience
- iii. A more experienced and often independent multimodal text maker
- iv. An assured, experienced and independent multimodal text maker

Bearne and Wolstencroft (2007) explain that at every stage, a writer's progression in multimodal text making is marked by increasing ability to decide on mode and content for specific purposes and audiences, structure texts, use technical features for effects, and reflect on their composing activities. I describe these briefly³.

- 1. Decide on mode and content for specific purpose(s) and audience(s).** This decision- making requires that the writer is able to choose which mode(s) will best communicate meaning for specific purposes (deciding on words rather than images, or deciding between images to include in text) and use perspective, color, and language to engage and hold a reader's attention. It also involves selecting appropriate content to express personal intentions, ideas and opinions, and adapting, synthesizing and shaping content to suit personal intentions in communication.
- 2. Structure texts.** This involves the ability to pay conscious attention to design and layout of texts, and use structural devices (pages, sections, frames, paragraphs, blocks of text) to organize texts. Successful structuring of texts

³ Bearne and Wolstencroft's (2007) descriptors take all modes into consideration (including writing, images, color, sound, gesture, facial expression etc) (See appendix C). However, in presenting their description, I have focused on modes that are specific to my research.

also requires that the writer is able to integrate and balance modes for design purposes, structure longer texts with visual and verbal cohesive devices, as well as use background detail to create mood and setting.

3. The ability **to use technical features for effect** entails handling technical aspects and conventions of different kinds of multimodal texts (including line, color, perspective, camera angles and language). A multimodal text maker should also be able to choose language, punctuation, font, typography and presentational techniques to create effects and clarify meaning, as well as choose and use a variety of sentence structures for specific purposes.
4. **Reflect.** This descriptor requires the ability to explain choices of modes(s) and expressive devices, including words; improve one's own composition or performance through reshaping, redesigning and redrafting for purpose and readers'/viewers' needs; comment on the success of a composition in fulfilling the design aims; and comment on the relative merits of teamwork and individual contribution for a specific project.

The framework for describing multimodal texts (Bearne, 2009; Berane & Wolstencroft, 2007) provides a heuristic and vocabulary for the analysis of students' multimodal and writing competence in my research. One weakness of the framework is that it does not discuss in any detail the theoretical assumptions underpinning it. Without such discussion, the path to competence described in the framework appears linear and unproblematic. The expansive learning theory and the Model of Domain Learning (discussed below) are therefore meant to complement the framework for

describing multimodal texts in order to provide a more robust analysis of learners' multimodal and writing competence in my research.

Expansive Learning and L2 Writing Competence

In addition to emphasizing activity system as unit of analysis, CHAT also describes learning as a process of expansion (Engeström, 1987, 1999, 2009). Sannino, Daniels and Gutierrez (2009, p. xi) describe this process as follows:

Expansion is a form of learning that transcends linear and socio-spatial dimensions of individual and short-lived actions. Within the expansive approach, learning is understood within the broader and temporally much longer perspective of a third dimension, that is, the dimension of the development of activity. Expansion is the result a transition process from actions currently performed by individuals to a new collective activity.

The transition process from action to activity is considered *expansive* when the object is transformed, and when individuals become aware of the contradictions and tensions inherent in their current activity (e.g. composing word-based or written texts) in light of new forms of activities (e.g. composing multimodal texts). These tensions and contradictions are not regarded as defects in the activity system, but as opportunities for development. As Engeström (1999b, p. 90) explains, in activity-theoretical terms, activity systems travel through zones of proximal development, which he describes as “a terrain of constant ambivalence, struggle and surprise.”

It is also important to note that expansion does not imply an abrupt break with the past, or a once-for-all replacement of the existing object with a totally new one.

Instead, the historical nature of CHAT implies that expansion “both transcends and retains previous layers of the object” (Engeström, Pounti, & Seppanen, 2003, p. 181-183; cited in Sannino et al, 2009). It is this process of transcending and yet seeking to retain the layers of the existing object, that causes contradictions and struggles in the activity system. But it is also the same process that creates opportunities for transformation and development. Engeström (1999) explains this process of development through the use of the expansive cycle of activity system.

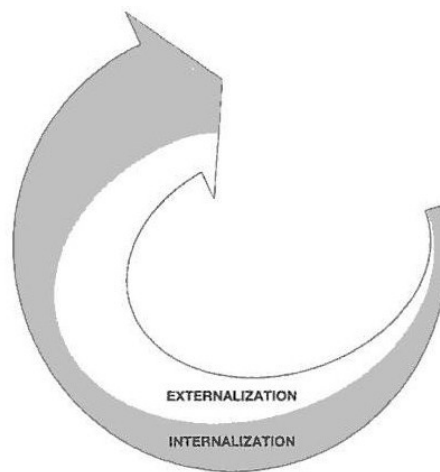


Figure 3. The expansive cycle (Engestrom 1999, p. 34)

As Figure 3 shows, the expansive cycle describes developmental process that contains both internalization and externalization. Engeström explains that the process begins with an almost exclusive emphasis on internalization, that is, on socializing and training novices to become competent members of the activity system. Individual innovations mark the first step of creative externalization. As the contradictions and disruptions of the activity system become more intense, internalization begins to take the form of critical self-reflection, leading to the search for solutions, that is, to

increasing externalization. Externalization reaches its peak when a new model for the activity is designed and implemented. Finally, as the system stabilizes, internalization becomes, once again, the dominant form of learning and development.

Using expansive learning theory as a theoretical lens, I describe L2 writing competence as a process of development, in which writers transform the object of their activity (i.e., from composing predominantly written texts to composing multimodal texts), and are aware of the struggles and challenges inherent in this process. I also see competence as progress that writers make along identifiable yet complex stages of learning and development, a view that is captured in Alexander's (1997; 2003) Model of Domain Learning.

Model of Domain Learning (MDL) and L2 Writing Competence

MDL is a developmental model of literacy (i.e., reading and writing) that encompasses systematic changes across the lifespan. The model is presented as a perspective on expertise that arose from extensive research in student learning in academic domains, such as reading and history. A central argument of this model is that efforts made at understanding competence and at helping learners become competent readers and writers should focus on how learners' knowledge and capacities deepen, expand, or transform over time and with experience (Alexander, 2003; Alexander & the DRLRL, 2010).

As Alexander (2003, 2005) explains, the MDL focuses on three components that play a role in the journey toward proficiency or expertise (i.e., knowledge, strategic processing, and interest). It also considers the interplay of these components at three stages of development in domain learning (i.e., acclimation, competence, and

proficiency). In what follows, I briefly describe the components and how they interrelate at the different stages.

1. *Knowledge* pertains to individuals' understanding of the domain (e.g., history or biology; *domain knowledge*) or particular topic about which they are writing or reading (i.e., *topic knowledge*).
2. *Strategies* are the intentional, purposeful, and effortful procedures used to deal with domain-specific problems or for a more general concern (e.g., composing an extended, reasoned text that is supported by evidence and details; Wong Fillmore & Snow, 1999). Alexander (2003) explains that strategies can be directed toward making sense of or managing the elements of a problem at hand (e.g., restating or rereading the text, or looking up word meanings; or attending to specific lexical items or mechanics in writing; *surface-level strategies*). On the other hand, efforts can be focused on delving deeply into, transforming, or critiquing the given problem (e.g., questioning the author, evidence-seeking, or re-representing the text; or revising a text to enhance meaning; *deep-processing strategies*).
3. *Interest* may come in the form of heightened attention, engagement, or curiosity sparked by the present features of the task, text, or context (i.e., *situational interest*). Or, it can refer to a more enduring and stable form of involvement in, identification with, or a passion for the domain or topic in which individuals are engaged (i.e., *individual interest*; Murphy & Alexander, 2002).

While all three components are present at every developmental stage, the way they combine at the specific stages is different.

Acclimation

Acclimation is the initial stage in domain expertise. As Alexander (2003) explains, learners at this stage are just beginning to orient (acclimate) to a complex, unfamiliar domain. At this stage, learners have limited and fragmented knowledge of the domain (e.g. history) or specific topic about which they are writing or reading. Also, learners at acclimation frequently use surface-level strategies to tackle novel and challenging domain-specific tasks. Finally, individual interest, at this stage, is very limited; learners are expected to rely mostly on situational interest to maintain their focus and spark their performance.

Competence

The transformation into competence is marked by quantitative and qualitative changes in individuals' knowledge base (Alexander, 2003). Competent learners demonstrate foundational body of domain knowledge that is both cohesive and principled in structure (i.e., principled knowledge). Individuals at this stage rely on a mix of surface-level and deep-processing strategies to solve domain specific problems. Moreover, these knowledge and strategy changes in competent learners are linked to increases in individuals' personal interest in the domain and less dependence on situational features of the environment.

Proficiency/Expertise

A unique characteristic of proficient learners is that their knowledge base is broad and deep, allowing them to contribute new knowledge to the domain. “To create new knowledge, experts must be well versed in the problems and methodologies of the domain and actively engaged in problem finding” (Alexander, 2003, p. 12). Experts are able to pose questions and institute investigations that push the boundaries of the domain. Individual at this stage use mostly deep-processing strategies, and the level of their strategy use remains high. The individual interest of experts is also very high, with decreasing reliance on situational interest, allowing proficient learners (writers and readers) to maintain a high level of engagement over time.

In this research, I use MDL (Alexander, 2003) and the theory of expansive learning (Engeström, 1999) to help me analyze adolescent English L2 writers’ multimodal and writing competence. Both MDL and expansive learning theory focus on transformation, but from different angles. Expansive learning focuses on contradictions in the activity system as the driving force for development. MDL places emphasis on the interplay of knowledge, strategic processing and interest as the bedrock for developing competence in literacy. By using these theoretical lenses to complement the framework for describing multimodal text (Bearne, 2009; discussed above), I seek to understand the changes that may occur in English L2 writers’ competence over time, along with the challenges (contradictions) that may take place in the developmental process.

Integrating these complementary lenses from social semiotic approach to multimodality, sociocultural theory of L2 writing, cultural-historical activity theory (focusing on activity system and expansive learning), and the Model of Domain Learning allowed me to understand how adolescent L2 writers engage in producing multimodal texts, and how their multimodal activities influence their writing competence. By placing multimodality at the center of my research, I seek to understand and analyze students' multimodal activities, multimodal documents, and multimodal and writing competence. The conceptual framework and theoretical lenses I have discussed above work in concert to help formulate and address my research questions.

Summary

I have discussed the theoretical assumptions underpinning multimodality as a concept, namely: 1) that human communication and meaning-making processes involve more than the use of language, and that language is part of a multimodal ensemble; 2) that in a multimodal ensemble, each mode has the potential to achieve specific communicative purposes; and 3) that human meaning making and communication practices are shaped by social and Discourse practices. The discussions in this section have also focused on how the social semiotic approach to multimodality and other theoretical lenses work together to frame and address my research questions.

Several researchers have employed the notions of multimodality in English education research, including English L2 writing and literacy (e. g. Archer, 2007;

Janks, 2007; Kendrick et al, 2007; Kress et al, 2005; Matthewman, Blight & Davies 2004). In the sections that follow I synthesize and critique this body of empirical research and discuss their implications for my research.

SECTION III: Empirical Research

(Analyzing Empirical Studies on Multimodal Pedagogies and English L2 Writing)

In this section, I focus on synthesizing and critiquing empirical studies that have used multimodality and multimodal (multiliteracies) pedagogies as framework to investigate the way we *do* English and engage in English L2 writing and literacies. In discussing and critiquing these studies, I will highlight the questions they seek to answer, the methodology they adopt and their major findings. I will take up this task shortly, but first, what do we mean by multimodal pedagogies and multiliteracies pedagogy?

Explaining Multimodal Pedagogies

The term ‘multimodal pedagogies’ has been used to refer to curriculum, pedagogy and assessment practices which focus on mode as a defining feature of communication in learning environments (Stein and Newfield, 2007). Adopting multimodal pedagogies is an acknowledgement of the fact that all acts of communication in classrooms are multimodal.

As Stein and Newfield (2007) also point out, “multimodal pedagogies acknowledge learners as agentive, resourceful and creative meaning-makers who communicate using the communicative potential and multiple resources of their bodies and of their environment to interconnect” (p.10). Kress (1993) developed the

idea of *interest* to explain the agency and motivation of individual learners to select and use specific resources in specific ways. Individuals are shaped by their histories, experiences and interactions to develop specific interests in things around them. Their interest is their ‘take’ on the world at a given moment in time (Jewitt, 2009).

Motivated by ‘interest’ learners select and engage with different modes differently: they have different relationships, histories and competencies in relation to modes. In multimodal pedagogies, therefore, “there is a conscious awareness of the relationship between modes, learning and identity” (Stein & Newfield, 2007, p. 10; also Stein 2008).

My understanding of these explanations is that the focus in these pedagogies is not just on meaning making as a modal system (i.e. as patterns and configurations of modes), but especially on the individual learner’s agency and interest to engage in a meaning making process, and to make choices regarding what modes to use to construct, represent and communicate meaning. It involves learners’ ability to interpret their environment, and to offer their interpretation drawing on available resources. Put differently, the ways we use modes and the meanings that result from these usages always bear the mark of our interests, identities and interpretations, all of these shaped by our interactions in particular social and cultural contexts. In this sense, then, multimodal pedagogies become the site for engaging the ‘social’ and the ‘individual’, resulting in the creation of a new form of knowledge and new resources. What we create, in turn, becomes a resource to engage others and us in further interpretation, representation, and communication of meanings. In short, engaging in multimodal pedagogies offers learners the opportunities to “design social futures”

(New London Group, 1996).

In multimodal and multiliteracies pedagogies, ‘designing’ refers to the process of shaping emergent meaning, and of transforming knowledge “by producing new constructions and representations of reality” (New London Group, 2000, p. 22).

Learners are regarded as persons with the ability to transform, rather than simply repeat knowledge. The overlapping pedagogies of multimodality and multiliteracies, therefore, aim at helping learners become ‘designers’ of their world, able to create something new out of available resources.

Explaining Multiliteracies Pedagogy

The New London Group (1996, 2001) coined the term ‘multiliteracies’ and ‘multiliteracies pedagogy’ to describe an approach to literacy pedagogy which responds to the changing social environment facing students and teachers. The authors argue that the multiplicity of communications channels and increasing cultural and linguistic diversity in the world today call for a much broader view of literacy than portrayed by traditional language-based approaches. According to this group of researchers and practitioners, multiliteracies overcomes the limitations of traditional approaches by emphasizing how negotiating the multiple linguistic and cultural differences in our society is central to the demands of the working, civic, and private lives of students. They argue that the use of multiliteracies approaches to pedagogy will enable students to succeed in creating access to the evolving language of work, power, and community, and fostering the critical engagement necessary for them to design their social futures and achieve success through fulfilling employment.

The multiliteracies framework proposes that good teaching should have four

inter-related angles on learning: Situated Practice, Overt Instruction, Critical Framing and Transformed Practice. The explanations and evidence of achievement of these pedagogical angles are offered in Table1.

Table 1

Multiliteracies Pedagogical Model

Pedagogical Angels	Description	Evidence
Situated Practice	Immersion in experience and the ability to use available Designs, including those from the students' real life experiences (lifeworlds) and those experiences in which students participate through simulation.	Successful teaching and learning using this pedagogical angle would culminate in a communication problem solved, whether intuitively, with an expert's help or with scaffolded assistance.
Overt Instruction	Systematic, analytic and conscious understanding; requires the introduction of explicit metalanguages, which describe and interpret the Design elements of different modes of meaning.	Results in students ability to describe the processes and patterns of Design in a meaningful way
Critical Framing	Interpreting social and cultural contexts of particular Designs of meaning. Students stand back from the meanings they are studying and view them critically in relation to their context.	Culminates in students ability to show that they know what the Design is for – what it does and why it does it.
Transformed Practice	Entails transfer in meaning-making practice, which puts a transformed meaning to work in other contexts or cultural sites.	Successful teaching and learning from this particular angle will involve either good reproduction or some measure of the extent and value of creativity in the transformation and the aptness of the transformation or transfer to another context.

As Cole and Kalantzis (2001, 2007) explain, all the four pedagogical angles should be part of the learning process, although not in any fixed order, or as separate bits. The tenets of this model and those outlined as describing multimodal pedagogies serve as the major frameworks for most of the research reviewed below.

Empirical Research on Multimodality and L2 Writing

Many researchers have used multimodality and multiliteracies as overlapping or complementary pedagogical and conceptual frameworks for their practice and research. In this review, I concentrate particularly on studies that have focused on English education and English L2 writing. I begin with studies that seek to answer the question about what the notions of multimodality and multiliteracies might mean for English as a school subject (Kress et al, 2005; Matthewman, Blight & Davies 2004). Next, I will focus on studies that address the use of multimodality and multiliteracies pedagogies to develop English language competence in the context of marginalization or disadvantaged situations (e.g. Archer, 2007; Janks, 2007; Kendrick et al, 2007).

What does the focus on multimodality and multiliteracies mean for English?

Kress, Jewitt, Bourne, Franks, Hardcastle, Jones, and Reid (2005) conducted a longitudinal study involving three secondary schools in Inner London. The students from these were mostly minority ethnic students – e.g., Bangladeshi, Black African, Black Caribbean, Indian, Pakistani, Chinese, and White working-class population. A significant number of these students were refugees (over 20%), and many were from low-income families (over 43% received free meals). Over 80% of the students used English as an additional language. They were mostly native speakers of Cantonese, Bengali, Gujariti, Urdu, Farsi, Arabic and Portuguese. The students' standards in English were well below the national average (based on forms of national assessments). With regard to teachers who participated in the study, other than a quick mention of educational backgrounds and years of experience, the researchers do not give enough information to help create a clear picture of who the teachers were.

Considering that this research focused on understanding the multimodal character of the teaching and learning of English, a clearer understanding of those doing the teaching would go a long way to help readers understand the English classroom context.

The researchers' work is published in their book: *English in Urban Classrooms: A multimodal perspective on teaching and learning*. In conducting this research they aimed at answering two broad questions: one about the school subject English, the other about a way of looking at English in the classroom, what they describe as a methodology for seeing (p. 1). The goal of the research was to understand how, in the specific social, political and institutional contexts of the participating schools, the activities and relations of the English classroom are patterned, and how the school subject 'English' is constructed. They collected data through classroom observation, video-recording and formal in-depth interviews as well as informal conversations with teachers and students. Materials used in the classrooms (such as books, videos, worksheets etc.) and policy documents of the schools were also collected for analysis.

The significance of this study, with respect to my study, lies especially in the range of issues that it uncovers as fashioning an understanding of the school subject English. Using multimodal semiotics (i.e. studying how modes are used as signs for meaning making) as a framework for the study, Kress et al (2005) discussed several aspects of their findings, including how the English classroom is constructed as a multimodal sign; how time is organized in the English classroom; how 'ability' is pedagogically constructed in school English; how character is socially produced as an

entity of school English; and how text is cycled in the English classroom. I highlight a couple of these findings.

English Classroom as Multimodal Sign: The authors' analysis shows that a focus on speech and writing alone misses much of what it takes to understand the English classroom as a multimodal sign, and that the visual displays and spatial arrangements of the classroom contribute a great deal to this kind of understanding. It is particularly important to note that the multimodal way of looking enabled the researchers "to see some of the spaces in which 'school English' resides that other approaches might not [show and how] different resources serve to position students to curriculum, to classroom knowledge and to one another in particular ways, to show the link between policy and practices in English.

Pedagogical Construction of 'Ability': In their analysis, Kress et al (2005) also focus on the notion of 'ability' and how it influences the way students are differentially positioned in the English classroom. The authors argue that 'student ability' is at least partially constructed in social interaction, and might not go beyond the context in which it is produced. This means that a teacher's perception of students in relation to 'ability' "gives shape to very different constructions of what English is or comes to be for different groups of students" (p. 83). In all the nine classrooms that they researched, they found that what happened in these classrooms – tasks, grouping, communication – was dependent on the classification of students' abilities. For instance, in two of the schools with 'mixed-ability' classrooms, teachers described their classrooms in terms of a 'top-ability group', a 'middle group' and a 'low-ability group'. Focusing on the multimodal construction of 'ability' in these classrooms (i.e.

how different modes - gesture, gaze, movement, speech, writing, etc – are used to position one another in the classroom), the researchers found that the low-ability groups participated in and experienced different version of English to that produced for their top-ability counterparts.

I am especially interested in this finding because it served as a prop for me to examine how best to approach the issue of competence in my study without placing any of the student participants at a disadvantaged position. As Kress and his colleagues point out, the challenge lies in the fact that such classifications and positioning also involve other social, political and policy factors that are difficult to control.

The English classroom is a site of innovation and development but also of tension and struggle (Matthewman, Blight & Davies, 2004). As mentioned earlier, the notion of designing is central to the concepts of multimodality and multiliteracies (Kress, 2000). Learners and teachers are considered as designers, with the agency to transform available resources into creating new forms of knowledge. However, from findings reported by Kress et al (2005), we realize that there are factors that loom larger than the students and teachers, and that sometimes students' and teachers' agency may not even be acknowledged. Although the notion of tension is not necessarily peculiar to the school subject English, it is worth examining how tension is created in the English classroom, and how this influences the teaching and learning of English. This is the focus of Matthewman, Blight and Davies's (2004) work.

Adopting an exploratory case study approach, Matthewman, Blight and Davies (2004) examine how working with multimodal texts offers new challenges

and tensions for English teachers as well as creative opportunities to pupils for meaning making. The twelve secondary school students (ages 14-15) who participated in the research worked in pairs to produce a multimedia presentation promoting their school's English department at an open evening for Year 6 pupils and their parents. The design took place in 'enrichment time' after the SATs when Year 9 pupils were involved in a variety of projects. The two teachers who served as participants of the study also doubled as participatory researchers. The researchers collected data through pre- and post-project interviews with students; a pre-project diagnostic test consisting of an unstructured analysis of a web site; video recording of teachers' instructions and students' presentations; and students' planning sheets and multimedia products. The data collected were analyzed using the multiliteracies pedagogical model, comprising the four pedagogical angles: Situated Practice, Overt Instruction, Critical Framing and Transformed Practice (see Table 1 above). Considering the multimodal aspect of the project, the researchers also adopted the multimodal design model within the Multiliteracies framework (Cope & Kalantzis, 2000). The multimodal design model outlines the different modes of design (including visual, linguistic, gestural, audio and spatial designs) and how they interconnect for meaning making. Using these overlapping frameworks the analysis sought to answer the following questions:

How does the teacher define a multimedia text and how does he highlight and prioritize different modes within it? How do the pupils understand the different modes within their task and which ones do they prioritize? How does the pedagogy of multiliteracies illuminate this process? What is the

identity of the subject culture English within this widening out of the concept of literacy? How does the teacher attempt to define and defend his conception of the subject boundary? What connections do the pupils make between the competing discourses of technology and English? (Cope & Kalantzis, 2000, p. 160)

Their findings show that working with multimodality creates three clear but interlinked tensions within the teaching process:

1. The tension between providing a model and a structure and allowing space for creative innovation, occurring within the Situated Practice strand;
2. The tension between the metalanguage of multimodality and the key terms and concepts associated with English as a subject culture, occurring within the Overt Instruction strand; and
3. The tension between the subject boundary of English and other subject boundaries, occurring within the Critical Framing strand.

Within the Transformed Practice strand the researchers found evidence of students creativity and agency as designers of meaning. The students drew on their out-of-school and in-school knowledge, practices and experiences to help them transform and integrate their knowledge of English and their knowledge of ICT through working on this project.

These researchers' work is very significant to my study for two reasons. First, it gives insight into how multimodality and multiliteracies could be used as an overlapping framework for pedagogical practices in the English classroom, and the possible tensions that can result from using such a framework. The second significant

reason relates to their conclusion. In the face of these creative tensions, the authors concluded that the development of a viable metalanguage for teaching and assessing multimodal texts is highly problematic and is in need of further empirical study. They also maintained that such creative work is constrained by the current assessment requirements for English and needs to be considered against discussions of what definition of English and literacy we need in the 21st century. These findings are very insightful for my study, which adopts multimodality as a framework for developing L2 writing and multimodal competence.

Developing English L2 writing competence through multimodal/multiliteracies pedagogies

I now turn the spotlight on studies that seek to investigate how multimodal/multiliteracies pedagogies might influence English L2 writing.

Archer (2007) conducted his research in the context of a first year Communication Course in a South African engineering foundation program. The program caters for students from less advantaged educational backgrounds and the course focuses on developing students' academic literacy in English. The students were diverse in terms of languages, home countries, age differences, rural and urban origins and gender. The student participants engaged in a Symbolic Object project, in which they identified everyday objects that have symbolic meanings and investigated these objects in a range of contexts. The aim of the project was to explore ways in which particular communities of practice (Lave & Wenger, 1991) make meaning and the possible implications of this for 'development' work. The projects were assessed according to the following criteria: the exploration of the physical, cultural and

communicational understandings of the object; the quality of research, interviews and observations; the appropriateness of the choice of mode of presentation and the students' reflections on their choices. Students' multimodal texts and reflections were collected as data for analysis.

Analyzing students' texts, Archer intimates that the less regulated spaces created in the Communication course allowed students' resources to emerge and to be validated. These resources include English, indigenous languages, local knowledge, personal experiences and multimodal competencies. Less regulated spaces are defined as classroom environments, which require open tasks with no strict generic specified guidelines, and which place less emphasis on assessment and more emphasis on creativity, and the use of students' own resources. Archer also claims that he attempted "to suspend 'teacherly' judgment, put learning and the formal curriculum aside and look at students' texts free of a norm-driven, evaluative eye in order to see the ways in which traces of their lives manifest.

While the symbolic object project is a good attempt at enacting a multimodal pedagogy, I find Archer's claim about putting learning and formal curriculum aside to be problematic and almost contradictory, considering the fact that the goal of the Communication course was to develop students' academic literacy in English. Not surprisingly, almost nothing is said about how this goal was achieved, with regard to the English language. The assessment criteria used does not reflect a serious attention on the goal; it is almost as if the language component of the equation is forgotten. All emphasis is placed on making meaning without showing how progress is made toward the proficient or competent use of language, and how language combines with

other modes to communicate meaning. Such a limitation reflects the criticism that is sometimes leveled against studies that use multimodal approaches to language and literacies, namely, that often they do not take seriously enough the power of dominant languages, standard varieties and elite (or privileged) literacies (Janks, 2002, 2004, 2007). Janks' (2007) research (described below) gives an example of how this weakness can be overcome.

Janks (2007) and Kendrick, Jones, Mutonyi and Norton (2007) explore how multimodal pedagogies can enhance children's abilities in English at the school level in Uganda. In all instances of practice, they provide evidence that opens up possibilities for 'fusion pedagogy' through the processes of hybridizing students' out-of-school knowledge, competencies and resources with dominant classroom practices (Moje, 2008).

In a qualitative case study, Janks (2007) describes a form of curricular bridging between the local, outside-of-classroom practices (that is, playground games) with standard curricular genres, including written description. The study engaged forty-four 4th graders in a South African elementary school in a book project in English. The focus was to help the students to describe their games to their Australian friends with whom they were linked through an exchange project. The multimodal and multilingual pedagogies that the children engaged in validated their own language and practices. The children also engaged in different modal processes - including plays, demonstrations and written explanations - showing different affordances of each mode.

Janks identifies three major findings of this research: First, discussing the texts produced by the children, Janks shows that both multimodal and multilingual pedagogies were enabling. The students relied on the visual and performance modalities to act as the platform for writing. Also, the use of children's first languages to mediate their L2 literacy facilitated their writing in English. Allowing the children to use the full range of their multilingual resources enabled all the children to participate and to hone the information and the instructions before they were translated. Second, the choice of games as a subject matter had a number of pedagogical advantages, such as enabling the students to demonstrate the importance of using play for learning (Vygotsky 1978). Using the games also showed that the power vested in knowledge lay with the children, as they knew more about their games than the teachers and researcher did. Seeing the children as experts validates the knowledge they bring to school as resource. Third, Janks (2007) observed that undertaking the book project allowed for a reflection and discussion on the relationship between literacies, identity and power. To overcome the weaknesses sometimes associated with multimodal ethnographic approaches (see Archer 2007 above), this study demonstrates that it is possible to maintain students' first languages and identities while teaching them to read and write in English (see also Janks 2004) and to develop the tools for both creativity and critique.

Kendrick, Jones, Mutonyi and Norton's (2007) study, conducted within the Ugandan elementary and secondary school system, seeks to answer two major questions: 1) To what extent can the modalities of drawing, photography and dramatic performance enhance teachers' understanding of the way students use the

English language? 2) How can students' use of the English language inform English teaching and curriculum development? The yearlong data collection involved interviews with students and teachers in all six schools, document analysis of collected student drawings and photographs in Banda Primary and Banda Secondary, respectively, as well as observations of students' dramatic performances in Mount Elgon Secondary. The researchers also interviewed curriculum planners at the Ugandan Ministry of Education's Curriculum Centre and studied the guidelines for the English curriculum. Their findings show how the incorporation of multimodality as an instructional practice in the mainstream schooling can offer "innovative possibilities for how teachers might validate students' literacies, experiences and cultures, to support English language learning in the classroom" (p.111). The researchers conclude with the recommendation that multimodal pedagogies be incorporated more fully into the Ugandan English curriculum, while also highlighting the challenges teachers face in this regard.

In view of my interest in engaging adolescent English L2 writers in multimodal pedagogies for the purposes of developing their multimodal and English L2 writing competence, this finding is very significant. It gives insight into how to engage the youth in such pedagogies, as well as an idea about what some of the challenges might be. Another significant thing about Kendrick, Jones, Mutonyi and Norton's (2007) research is that it is conducted among a predominantly rural population, with limited access to contemporary forms of communication. As the researchers observe (see also Newfield and Stein, 2007), in such situations, the use of multimodal indigenous media (such as storytelling, talking drums and popular

theater) can be successfully mobilized for learning. I carried out my research in a rural community with similar challenges. Coupled with the fact that Ghana and Uganda have similar educational and English language policies, this research really comes in handy as a good example.

Newfield and Maungedzo (2007) also conducted another significant study relating to multimodality and adolescent English L2 writing and literacies. Their focus in this study was to use multimodal pedagogies to revitalize poetry curriculum in a secondary school in Soweto, South Africa. Their three-year intervention initiative opened up the English curriculum to a range of cultural and linguistic knowledge and practices, such as family, ethnic and national histories and identities; hybrid mixes of languages and modes; indigenous literary practices and popular cultures. It is like the now “polysemic” nature of English L2 writing that Canagarajah (2006, p. 26) describes. Nothing is monomodal or monolingual anymore. The students were able to compose poems using different modes and media, such as composing on the page, on the cloth, and through performance. The result is that the disaffected adolescents now found a voice in a language they had previously resisted. These students were able to appropriate English and use it for their own purposes; they became L2 users in their own right (Jenkins, 2006).

With such a high level of engagement, the next step would be to assist learners to expand their enthusiasm to include gaining access to dominant literacies. And that is what I sought to do in my research: to address the combined foci of engagement and competence; to engage adolescent English L2 writers in pedagogical practices aimed at sustaining their interest in writing and improving their multimodal

composing skills and L2 writing competence.

The idea of building competence through engagement is supported by Early and Marshall (2008). Their work focuses on adolescent ESL students and how using a multimodal approach to literacy can support these students to engage in rich, complex interpretations of literary works in English and to realize their interpretations linguistically in written academic discourse.

The researchers collected data through class observation, field notes, interviews of 28 students and 2 teachers; students written reflections and students' self-evaluation; as well as teachers' evaluation of and feedback on students' essays. Early and Marshall (2008) analyzed their data mainly through qualitative lenses; however, they used students' scores on their essays as quantitative data to support their argument and gauge students' progress.

Findings of the study suggest that a multimodal approach, in combination with cooperative group work and L1 use, has considerable potential in promoting ELL students' academic success. The focus on academic success is particularly significant for my own research. I have argued throughout this review that, ensuring that students are engaged in enjoyable and meaningful English writing is necessary but not adequate. Such efforts should extend to ensure academic success for students. In adopting a multimodal approach, therefore, efforts should be made to incorporate steps into the approach to help students succeed academically.

Summary of Findings from Reviewed Literature and their Implications for Current Study

The empirical studies reviewed in this section seek to answer two broad questions regarding what multimodality and multiliteracies mean for English education, and how the use of multimodal/multiliteracies pedagogies might influence the development of English L2 writing and literacy competence. To answer their questions, the researchers used mainly qualitative, ethnographic or case study approaches. Only one study (Early & Marshall, 2008) used quantitative data to support its qualitative analysis. In line with their “ethnographic-style approach” (Stein, 2008, p.11), the studies collected data through classroom observations, interviews, informal conversation, video recording, students’ multimodal texts and written reflections, and teachers’ feedback and evaluation. Table 2 summarizes the main findings and shows their significance for my study.

Table 2

Major Findings from Reviewed Literature and Implications for Present Study

Empirical Research	Findings	Implications for Current Study
Kress et. al. (2005)	1) The English classroom is a multimodal sign constructed through speech, writing, visual display and spatial arrangements. 2) The multimodal interactions and resources in the English classroom served to position students according to 'ability'.	The notion of multimodal positioning of students based on 'ability' served as a prop for me to examine how best to approach the issue of competence in my study without placing any of the student participants in a disadvantaged position.
Matthewman et. al. (2004)	Working with multimodal texts offers new challenges and tensions for English teachers as well as creative opportunities to pupils for meaning making.	The idea that the development of a viable metalanguage for teaching and assessing multimodal texts is highly problematic is insightful for a study that uses multimodality as a framework.
Archer (2007)	Claims that creating less regulated space and putting learning and formal curriculum aside allowed students' resources to emerge and to be validated.	The study reveals a gap that needs to be filled: developing students' academic literacy in English, I argue, requires both engagement and attention to competence building through creative, overt instruction, especially for younger L2 learners.
Janks (2007)	Adopting multimodal and multilingual pedagogies enabled students to use visual and performance modalities as platform for writing. Also, the use of children's first languages to mediate their L2 literacy facilitated their writing in English.	In my research, I have demonstrated that it is possible to engage students in multimodal composing while teaching them to develop English L2 writing competence. Janks' study is a useful example for this research focus.
Kendrick et al (2007)	Their findings show that the incorporation of multimodality as an instructional practice in the mainstream schooling can offer innovative possibilities for validating students' literacies, experiences and cultures, and can support English language learning in the classroom.	Their findings support my interest in engaging adolescent English L2 writers in multimodal pedagogies for the purposes of developing their multimodal communicative competence. Also, as I conducted my research in a rural community in Ghana, the challenges and opportunities associated with rural setting described in Kendrick et al's work offered much needed insights.
Newfield & Maungedzo (2007)	Using multimodal pedagogies to revitalize poetry curriculum enabled adolescents to find a voice in a language they had previously resisted, and to appropriate English for their own purposes.	The next step would be to assist learners to expand their enthusiasm to include gaining access to academic literacies. And that is what I seek to do in my future research.
Early & Marshall (2008)	Findings suggest that a multimodal approach, in combination with cooperative group work and L1 use, has considerable potential in promoting ELL students' academic success.	The study triangulates quantitative and qualitative data to gauge students' academic writing proficiency.

Conclusion

Throughout this review, it has been consistently demonstrated that communication is turning multimodal, and with it learning and teaching in many disciplines. However, saying that communication is multimodal is not necessarily a new concept. Humans have always used different modes to make sense of their environment. Our channels of communication have always involved oral, visual, auditory, olfactory and tactile modalities (Finnegan, 2002). What is new is the way in which new technologies and digital tools enable us to mesh these modalities into single and multiple print and digital texts, and to share these texts with people all over the world. It is this newness of *making* sense of our world and of *doing* communication that invites us to reconceptualize the way we teach and learn, including the way we teach and learn to write in English as a second language (Bloch, 2008; Warschauer, 2000).

Finally, I turn my attention to one major gap in the literature, which creates opportunities for further research. Most of the empirical studies that have used multimodality as a framework for teaching and learning English language in general, and English L2 writing in particular have focused mainly on how the use of different modes give students the opportunity to express themselves in ways that are not possible with the use of language alone (e.g. Archer, 2007; Kendrick, Jones, Mutonyi & Norton, 2007; Newfield & Maungedzo, 2007; Nyirahuku & Hoeing, 2007; Stein, 2008). Together, these studies make meaningful contributions to our understanding of how the incorporation of multimodality as an instructional practice in the classroom can offer innovative possibilities for how teachers might validate students' experiences and cultures to support their learning of English. They also offer rich

insights into how the adoption of multimodal pedagogies can enhance students' engagement in school literacies. However, most of these studies fail, to a large extent, to address the question of multimodal and writing competence, and to show how learners can be assisted to expand their enthusiasm in multimodal activities to include gaining access to forms of literacies that they are still required to develop in order to succeed academically. As Janks (2000, 2007) points out, failing to help students gain access to dominant literacies is a disservice to students and a major gap.

This current empirical study, therefore, is a sustained and systematic effort at helping to bridge this gap and to contribute to the fields of L2 writing and TESOL (Canagarajah, 2006) by examining the connection between multimodality and English L2 writing pedagogy, with specific interest in the development of adolescent English L2 writers' multimodal and writing competence.

CHAPTER 3: METHODOLOGY

Introduction

The purpose of this research was to examine how adolescent English second language (L2) writers' multimodal activities influence the development of the writing and multimodal competence. Focusing particularly on adolescent English L2 writers in Ghana, the research sought to understand how adolescent L2 writers in this context improved their writing multimodal competence in English through digital-based multimodal composing activities over a period of three months.

In this chapter I discuss the methods and procedures used in this study. In particular, I discuss the ways I position myself in this study as a researcher-practitioner. Next, I describe and offer a rationale for the specific research questions formulated to guide the study and the design adopted to address these questions. Following this, I describe the multimodal composing and teaching activities designed for this study. Also discussed are the research context, participants, instruments and procedures used in data collection, and the data analysis procedure. The chapter ends with a discussion on the credibility and dependability of the study.

Positioning Myself as a Researcher-Practitioner

Although I went into the research context primarily as a researcher, I also doubled as an instructor for the English composition course in JHS 2 for the duration of the study (i.e., April-June, 2011). Several factors influenced this decision.

In the first place, by taking up the role of researcher-practitioner I follow an established educational research practice, which is described in the literature as “the

use of teaching as context for research” (Cochran-Smith & Lytle, 2009, p. 40). As Cochran-Smith and Lytle explain, this kind of practitioner inquiry is initiated and carried out by a university-based researcher who takes “on the role of teacher in K-12 setting for a specific period of time in order to conduct research on the intricate complexities involved in theorizing and working out problems” (ibid, p. 40). Table 3 offers an overview of how this research approach compares with other genres of practitioner inquiry.

Secondly, the researcher-practitioner role was a viable means of helping me bridge theory and practice. As a researcher I went into the teaching context with questions and theoretical frames to guide my research and practice. The purpose was not to ‘test’ these conceptual frames, but to seek to understand students’ L2 writing in light of these frameworks, and how the realities of the learning and teaching situations in turn shape the way I continue to think about these frameworks. In this way, practice and inquiry interconnect to enhance both teaching and research (Cochran-Smith & Lytle, 1998, 2009; Cope & Kalantzis, 2001, 2007).

Lastly, my understanding of multimodality as a framework for L2 writing developed as I went through my PhD program in the US. My research and pedagogical experiences using this framework have also been in the US and with adult learners (graduate and undergraduate students). Taking active part in the instruction in a K-12 setting in Ghana was meant to give me a first-hand experience of using multimodality as a framework for English L2 writing with adolescent learners and to be better positioned to work with teachers and learners in the Ghanaian context in the future.

Table 3

Types/Genres of Practitioner Inquiry (see Cochran-Smith & Lytle, 2009)

Type of Practitioner Inquiry (Genre)	Description/Purpose	Researchers
Action Research	Efforts center on altering curriculum, challenging common school practices and working for social change. The focus is usually on the broader school context.	Collaborations among school-based teachers, other educators, university-based colleagues, parents and community activists
Teacher Research	Refers to the inquiries of K-12 teachers and prospective teachers who work in inquiry communities to examine the problems and concerns in their own classrooms (and often with a social justice agenda)	K-12 teachers are the primary researchers. Work in collaboration with university-based researchers and other teachers.
Self Study	Used almost exclusively to refer to inquiries at the higher education level by academics involved in teacher education, broadly construed. Often relies on auto/biographical and narrative data to explore how the “self” interconnects with educational practices.	Individual academics in higher education
The Scholarship of Teaching	Sustained inquiry by higher education faculty into their teaching practices and students’ learning.	Higher education faculty members
*Using Practice as site for Research. This is the version I follow in my research.	University-based researcher who takes “on the role of teacher in K-12 setting for a specific period of time in order to conduct research on the intricate complexities involved in theorizing and working out problems. The researcher may teach alone or co-teach a course, all the time guided by research questions, theoretical frames, and students’ real needs.	The university-based researcher. [I was the sole researcher and instructor of record for the 3-month period. However, I collaborated with other teachers on instruction and pedagogical decisions.
Some Common Features [and how they play out in my research] 1. Practitioner as Researcher: the practitioner simultaneously takes on the role of researcher. [*In my case, I am a researcher who takes on the role of a practitioner.] 2. Community and Collaboration: the practitioner-researcher engages in different forms of collaboration in different communities of inquiry. [*In my case I collaborated with other teachers, other doctoral candidates with similar research interests, and my research advisor. Such collaborations ensured transparency and accountability in my research.] 3. Blurred Boundaries between Inquiry and Practice: the boundaries between research and practice blurs when one takes on the researcher-practitioner role and uses the professional context as site for inquiry. [*In my research, I came into the professional context with questions and theoretical frames to guide my research and practice. The purpose was not to ‘test’ these conceptual frames, but to explore students’ learning in the light of these frameworks.]		

It should also be noted that I selected this particular school (research site) because of my familiarity with the school environment, including my past experience

teaching in the school (I taught there for almost 2 years), my understanding of the cultural and social issues of the school's catchment area, and the specific facilities (e.g., computer lab) in the school that could support my research. As a past teacher of this school, I had an important connection with some of the teachers and the administrators. Also, with my past experience of language learning and teaching in this social and cultural environment, I was hopeful that my research would contribute to the way/s learners are helped to develop L2 writing competence through multimodal activities.

As I expected, I received a lot of support from the principal, teachers and students in the school. In particular, I collaborated with the instructor of record for the JHS 2 English composition course that I taught, as well as with the instructor for computer literacy, who was also the school's technology expert. Working with these classroom teachers provided grounds for accountability, as this collaboration served as a check on me as a researcher to remain focused on the school curriculum, and to use the multimodal framework as an enrichment and a complementary approach, rather than as a replacement of existing curriculum goals, expectations and procedures (Janks, 2007; Kendrick, Jones, Mutonyi, Norton, 2007; Stein, 2008).

Collaboration with these two teachers began in July 2010. With the approval of the principal, both teachers sent me copies of the English and Computer Literacy syllabi and textbooks to enable me familiarize myself with the curriculum objectives for the period I would be doing my research in the school. The multimodal composing activities I planned for this study were therefore based on the curriculum objectives and standards as found in the syllabi and textbooks. I also received detailed

descriptions of the computer lab in the school and specifications of the computers and software they used. This information was very useful in planning for the logistics of the study. For instance, I bought digital cameras, which were compatible with the computer software the school used. I also knew before hand that out of the 25 computers the school had, only 11 were in good shape and fully functional.

Once in the school, I was the sole instructor for the English composition course for the period of the research (April – June, 2011). The instructor of record concentrated his efforts on other classes he usually taught and provided information about the JHS 2 students whenever I needed such help. He also served as one of the two independent raters of the students' expository essays. The instructor for computer literacy helped me to set up the computer lab for instruction and research and provided technical support when needed. Both teachers also helped to organize the poster presentation sessions.

Re-stating Research Questions

As indicated in chapter one, two main questions were formulated to guide this study. Research question one had three sub items and focused on understanding the processes and different activities that the adolescent English L2 writers engaged in producing multimodal texts. The overarching goal in posing these questions was to trace the adolescent English L2 writers' experiences in composing multimodal texts, paying attention to (a) students' awareness of the affordances of different modalities (i.e., pictures and words) as well as students' familiarity with using digital technologies to compose different multimodal texts, (b) the specific multimodal

composing activities the students engaged in, and (c) the benefits and challenges (contradictions) that arose as part of the composing process. The focus of research question two was to investigate how adolescent English L2 writers' multimodal activities influenced the development of their multimodal and writing competence. The two questions were phrased as follows:

Q1. How can adolescent English L2 writers engage in producing multimodal texts in an English as a second language classroom context, where students receive instruction about multimodal composing?

(a) What multimodal composing experiences did adolescent L2 writers bring to the composing process, with specific reference to (i) their awareness of the meaning potentials (affordances) of different text forms (i.e., pictures and words), and (ii) their familiarity with using different technologies to compose multimodal texts?

(b) What multimodal composing activities did they engage in, and what instructional support do they receive?

(c) What benefits (i.e., achievement of intermediate goals) and challenges (contradictions) arose as part of the multimodal composing process, and how were the challenges addressed?

Q2. How did the adolescent English L2 writers' multimodal activities influence the development of their L2 writing and multimodal competence?

Research Design

The study followed an embedded case study design in which both qualitative and quantitative data were collected concurrently (i.e. in a single-phased study), with emphasis on the qualitative component; the quantitative data played a supportive role in the overall design and analysis (Creswell, 2009; Creswell & Plano Clark, 2007; see also Early & Marshall, 2008). Yin (2009, p. 50) explains that an embedded case study “occurs when, within a single case, attention is also given to a subunit or subunits.” In this study, I focused on a second year junior high school (JHS 2) classroom in a specific school as the single case while paying attention to specific students in that same classroom (3 focal students) as the subunits. I have described the JHS 2 classroom as an activity system (Engeström, 1999; see chapter 4) and each of the focal students as an embedded case or embedded unit (Yin, 2009; see chapter 5). Using this approach allowed me to collect data from the whole class in order to get the bigger picture of the students’ multimodal experiences (analyzed in chapter 4). At the same time, the embedded design helped me to focus on an in depth examination of three students’ multimodal composing activities and development of L2 writing and multimodal competence in the classroom context (Yin, 2006, 2009). Figure 4 gives a graphic representation of the embedded case study design. The analysis of the single case (the JHS 2 classroom) and its subunits or embedded cases takes into consideration the educational, social and cultural context of the participants.

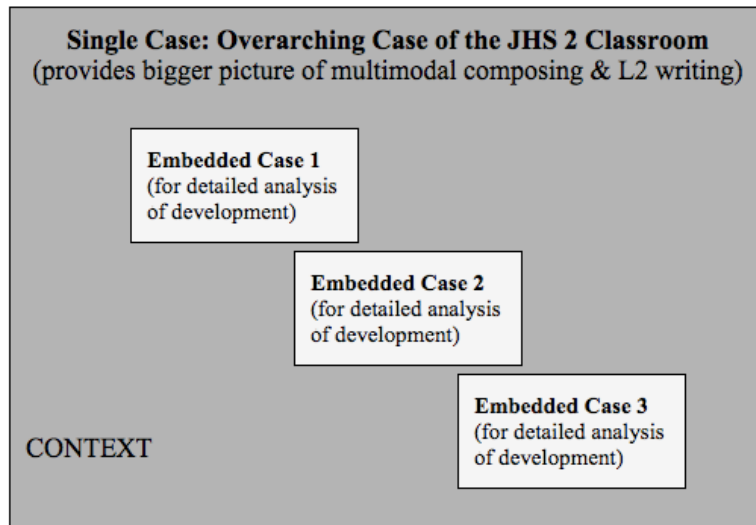


Figure 4. Embedded single-case study design

In order to capture students' development of multimodal and L2 writing over time, I incorporated a developmental case study approach (Brown & Rodgers, 2002) into the design. A 'case' (of a phenomenon) is said to be developmental when its observations and analyses focus on changes that occur over a measurement period (Cooper, 2006; Yin, 2009). Developmental case study designs integrate features of developmental research into an intensive study of a case, and aim at investigating patterns and sequences of growth of the case over a specified time period. In language education, developmental case study research comprises an intense investigation of the patterns and sequences of growth and change in the development of the language competence of an individual or small group of individuals (Brown & Rodgers, 2002, p. 21; see also McKay, 2006).

The data collected using this approach included the initial and exit surveys, group PowerPoint presentation activity and scores on initial and final drafts of expository texts (collected from the whole class). Data collected from the three focal

students (embedded cases) included text-based interviews, video recording of students' poster presentation sessions, and student-generated texts (i.e. multiple drafts of expository texts, posters and diary reflections). As a researcher-practitioner, my lesson notes, journal reflections and memos were also collected as data. The use of multiple sources of data was to help establish convergence lines of evidence (or triangulate) to make my findings as robust as possible (McKay, 2006; Yin, 2006).

In what follows, I describe the multimodal and teaching activities designed for this study. The instruments and procedures for qualitative and quantitative data collection are also discussed.

Multimodal Composing and Teaching Activities

In light of the theoretical and methodological framework and research questions, I developed a multimodal pedagogy as an intervention to help the students develop competence in multimodal text making. The multimodal composing activity that I developed was framed and presented to students as Transforming People and Communities Project, which focused on helping students to use their writing and multimodal composing to address situations in their communities that needed attention. The theme for the project remained the same throughout the three months during which the students engaged in expository writing and multimodal composing, in order to give them time to develop their ideas about the theme in depth and from multiple perspectives.

Transforming People and Communities Project

The Transforming People and Communities Project (TPC Project) was created to encourage students in JHS2 to explore topics of their own choice based on a cultural or social issue in their communities. The goal was to encourage students to write about issues that were of interest to them and their communities and to create different multimodal texts to help communicate their understandings and suggestions about these issues to their audience. The TPC Project engaged students in two interrelated multimodal composing activities. In the first part, the students in JHS 2 engaged in a group Power Point presentation activity. The second part involved individual students in a poster creation and presentation activity. Each of these activities was further divided into manageable stages of activities, which are summarized in Table 4 and discussed below.

Table 4

Multimodal Composing Activities with Instructional and Technological Support

Week	Phases of Multimodal Composing Activity	Instructional & Technological Support
1	Initial Survey	Survey focused on students' familiarity with multimodal text-making and experiences of English L2 writing
2	PHASE 1 Introducing the Transforming People and Community Project (a) Introducing PowerPoint Presentation Project (b) Forming Groups	Introduced theme for the multimodal composing activities. (a) Explained the purpose of the project; provided assignment sheet and rubric; went through the details of the assignment and answered students' questions; presented models of PowerPoint, and engaged students in analyzing the features, etc. (b) Helped students form groups of four and five, based on different strengths and needs
3	Exploring a social/cultural issue to write expository texts	Students engaged in brainstorming activities to generate ideas for their topic; they gathered information about their topic through observation and conversations in their communities. I guided students to identify relevant reading materials and other useful resources to help them deepen their understanding about their topic; helped students to organize their main and supporting ideas into coherent expository essays; gave students feedback to help them revise their paper
4	PowerPoint presentation	Students worked together to get first hand experience of creating/preparing PowerPoint slides for their presentation. The emphasis on integration of text and images was placed on gaining technical knowledge of such multimodal genre.

5	<u>PHASE 2</u> (a) Introducing Poster Creation and Presentation Project (b) Photo elicitation & exploration activity	(a) Repeated process (a) in week 2 (b) The Poster project began with photo elicitation and exploration activity. The purpose of this activity was to help students choose a topic for their individual expository text and poster presentation.
6	Writing and revising drafts	Individual writers focused on developing and organizing their ideas into coherent expository texts. Repeated process in week 3. Students revised their texts multiple times, drawing on ideas from their poster creation and presentation activities. This was a recursive process. See descriptions in weeks 11 & 12 below.
7&8	Acquiring and analyzing images	Introduced students to digital photography and the use of digital cameras: helped them become familiar with typical camera controls and shooting options, and to become aware of what they were photographing and how; encouraged students to always think about why they were aiming at particular shots. Instruction also focused on acquiring such general camera skills viewing photos on the camera, storing images, downloading images unto the computer, and editing images. Students also acquired images through internet search.
9 & 10	Creating poster	Students received instruction and support to use PowerPoint slides to create effective posters by focusing on a single message, integrating words, images and pictures to present their message, and keeping the sequence of their text well ordered.
11	Presenting poster	During the actual presentation session, students presented their poster to a diverse audience, including their own classmates, students from other grades, teachers, and persons from their communities. Students were trained to give feedback to their peers on their presentation. Each presenter was assigned one respondent. The poster presentations of consenting students were video recorded.
12	Using poster to revise written drafts. <u>Note:</u> The writing and revising of expository texts was a recursive process, from week 5 through week 12.	Students were encouraged and supported to revise the main ideas in their posters: the revision included clarifying and writing the ideas in clear and complete sentences. The students then transported and used these ideas in their essays as topic sentences, which helped them to organize their essays into meaningful and coherent paragraphs. They also gleaned ideas from the poster presentation activity.
After Poster Presentation	Exit survey	The items on the questionnaire give a general elicit information on what the adolescent L2 writers in JHS2 thought about the progress they had made over time regarding the development of multimodal and writing competence.

Group PowerPoint presentation activity

The group PowerPoint presentation activity was the first stage (Phase 1) of the TPC Project. The aims of engaging students in the group PowerPoint presentation activity were to introduce students to expository and multimodal text making and to provide opportunities for both technical and pedagogical learner training (Hubbard, 2004).

Technical training involved helping the students to gain general computer skills, such as developing and improving typing skills, creating and formatting word documents, and creating PowerPoint slides. Pedagogical training provided students with the opportunity to use their technical knowledge effectively to meet their specific learning objective, namely, to prepare PowerPoint presentations on topics that were of interest to them and had some benefits for their communities. As most of the students were unfamiliar with using different technologies to compose multimodal texts, it was important to design activities that would guide and support their learning and multimodal composing. Also the technologies selected were age appropriate, relatively easy to use, and readily available to students, following suggestions made in relation to computer assisted language learning, CALL (Ban, & Castanada, 2009; Chapelle, 2010; Chapelle & Jamieson, 2008; Hubbard, 2004; Warschauer, 2000). In particular, the PowerPoint activity was chosen because the software was already installed on the computers in the lab, as part of the Microsoft Office 2003 package, and was available to students. Besides, PowerPoint offered the students different options for multimodal composing, such as integrating verbal texts and images to create different multimodal texts.

The actual activity, which lasted three weeks (from week 2 to week 4 inclusive), followed a three-step process: 1) composing alphabetic text on a selected topic, 2) creating PowerPoint slides, and 3) presenting ideas to classmates using the PowerPoint slides. Table 4 provides a step-by-step structure of all the activities and sub activities, as well as the instructional support the students received in carrying out these activities.

Individual poster creation and presentation activity

A poster presentation is a visual communication tool that gets the presenter's main points across to as many people as possible and helps the presenter engage in conversation with others about their project (Hess, Tosney & Liegel, 2006). The adolescent L2 writers' poster activity (Phase 2 of the TPC Project) built on the experiences they gained from their PowerPoints presentation activity (in Stage I of the TPC Project) and was meant to help students develop further understanding of expository and multimodal composing. By using PowerPoint slides to create posters, students had the opportunity to reinforce, retain and transcend the skills they gained from creating and using PowerPoint slides.

The poster presentation activity was based on the framework for using digital images in the classroom proposed by Bull and Bell (2005, p. 7). According to this framework, students can be helped to engage in one or more of the following phases of activities:

- i. Acquire images (e.g. take photographs, draw portraits, video record events)
- ii. Analyze images (i.e. explain why the images are acquired, describe their content and know how to edit and use them for your purpose)
- iii. Create image-based works (e.g. poster presentation, short movies, digital stories)
- iv. Communicate ideas and understanding (through the use of different media and with intended audience)

The adolescent L2 writers' poster activity lasted seven weeks (from 5th to 11th week). To accomplish this project students received instructional and technological support

to engage in the several interrelated multimodal activities. The processes are described below.

Engaging in photo elicitation activity: Each student engaged in a photo elicitation activity (Ewald & Lightfoot, 2001). The purpose of this activity was to help students choose a topic for their individual expository writing and poster presentation activities. Students were asked to select a picture of their choice and bring that to class. The picture could come from their own albums, from magazines, newspapers or any source of their choice. The only criteria for selecting a picture were that the students needed to choose pictures that had meaning for them (i.e., pictures they could relate to) and were willing to share with others. Students were then asked to describe and reflect on the content of their pictures. The following guidelines were provided to guide their description and reflection.

- Describe the content of the picture (who or what do you see in the picture?)
- Describe the activity going on in the picture (what activity is going on in the picture? What is the person doing? What is happening to the objects or persons?)
- Make connections between the content of the picture and events or situations in your communities, the nation or in the world (what event or situation does this picture remind you of?)
- Reflect on the importance of these situations or events in your own life and in your community (How important are these events or situations? How do they affect you, your community, the nation or the world?)

Once the students had written their descriptions and reflections on their pictures, they received written comments from the instructor-researcher indicating and suggesting possible topics students could choose from. These comments were meant as a guide, and were based on students' pictures, descriptions, reflections and discussions.

Developing ideas on topic: Students then chose a topic based on a cultural or social issue in their community. To generate ideas for their topic, students engaged in brainstorming activity and read materials from different sources (e.g., newspapers, textbooks). They also spoke with people in their communities (e.g., parents, siblings and friends) to gain further understanding about the issues they want to explore. The writers then developed their ideas coherent expository texts.

Creating posters: Students received instructional support to use digital cameras to take pictures of places, people social/cultural symbols, and events that were relevant to their topic. For instance, they learned how to turn on a camera, take different shots (e.g., portrait, full length), use the zoom lens, store images on a memory card, and download images onto the computer. They were also encouraged to reflect on (think through) the reasons for taking and using specific pictures. Once students had acquired relevant pictures about their topics, they integrated the pictures and words into a single PowerPoint slide to create a poster on their topic.

Presenting posters to a larger audience: The audience for the poster presentation sessions included students from all the grade levels in the school, teachers, and members from the surrounding communities who had been invited by some of the participating students and the principal. The class ($N = 48$) was organized into 12 different stations. Each station had 6 posters and presenters. During the presentation, students were guided to state their main point or central message and explain the evidence they had provided to support the message they intended to communicate.

This explanation needed to include how the design (i.e., integration of pictures and language, the layout and color choices) supported the meaning/s they intend to share. These presentation guidelines were provided to students ahead of time (see Appendix D). I also modeled a poster presentation for the students to see. During the poster presentation, each student was asked to give written feedback on one presenter's work, using the following two main questions: 1) State one thing that you like about the presenter's poster, and why; 2) What one thing would you have done differently, if you had the opportunity to create a poster on the same topic, and why?

Revising expository texts: Students were encouraged and supported to revise their expository texts using ideas from their posters. In particular, students transported and used ideas from their posters as topic sentences in their essays, which helped them to organize their essays into meaningful and coherent paragraphs. They also gleaned ideas from the poster presentation activity, particularly through the questions and feedback from their peers. Students also received written feedback from the instructor on their work. Feedback was used as an instructional strategy to help students reflect on their writing and take steps to modify or improve their text (Ferris, 2003; Hyland & Hyland, 2006). In providing feedback, I focused on the ideas and meanings expressed in their texts, and how these ideas were organized into coherent and meaningful paragraphs. After multiple revisions, students submitted their final draft for grading. All the multiple drafts of their expository texts were collected as data.

Assessment procedure for expository writing and multimodal composing

I have conceptualized L2 writing in this study to include the use of different modes (i.e. written language and images) in the same text (Hyland, 2009). Following this understanding, I have also suggested that L2 writing competence should describe more than linguistic competence; it should include multimodal competence, which is described as progressing from predominantly verbal composing to multimodal composing, as well as the ability to decide which modes to use to meet one's purpose and communicate one's message to an audience (Bearne & Wolstencroft, 2007; Kress & Bazerman, 2009; Royce, 2002) (see detailed discussion in chapters 1 and 2).

The procedures for writing assessment, therefore, were planned to reflect this conceptual framework and to focus on students' expository writing and multimodal composing. The overarching goal was to gather evidence of development toward writing and multimodal competence (i.e., how students progressed from writing predominantly word-based texts to composing multimodal texts). In order to achieve this goal, I created a formative assessment procedure based on Weigle's (2002) recommendations for creating meaningful classroom writing assessment and Bearne and Wolstencroft's (2007) framework for describing multimodal text making. Using a formative and descriptive approach helped me to pay attention to how the adolescent L2 writers progressed through the text-making activities, rather than focus on the end products alone.

First, the expository writing and multimodal activities were assigned as an out-of-class (untimed) project (see TPC Project above), rather than an in-class (timed) task. Out-of-class writing is frequently assigned as homework or as tasks with very

flexible time frames. Weigle (2002, p. 174) explains that out-of-class assignments “serve as a means for students to gain first-hand experience in the various phases of the writing process, from gathering and analyzing sources to generating ideas to drafting and revising essays.” Using out-of-class approach allowed students to work at their own pace and under less stressful conditions. Also, the multimodal component of their writing activities required the writers to interact and collaborate with people outside the classroom (in their communities) in order to take pictures and develop more ideas for their work.

Second, multiple drafts of the students’ expository writings were evaluated. The evaluation was done in two ways. As a formative process, I provided written feedback on all the early drafts of the students’ essays to help them revise their work. As mentioned earlier, my feedback focused mainly on helping students develop and organize their ideas into meaningful expository texts. I also provided feedback on grammar, language use and mechanics in order to help students improve the overall quality of their texts. Also, two independent raters were trained to score students’ expository writings (i.e., initial and final drafts) using a criterion-referenced rubric – that is, the ESL composition profile or scale (Jacobs, Zingraf, Wormuth, Hartfiel, & Hughey, 1981). The ESL composition profile has been extensively piloted and revised, and is one of the most widely used analytic scales in recent English L2 writing research (e.g., Polio, 2001; Tsang, 1996; see also Weigle, 2002). Traits addressed on the profile include the development of relevant content, organization, vocabulary, language use, and mechanics. An inter-rater reliability analysis using the

Kappa statistic was performed on SPSS to determine consistency between the two raters (see chapter 5).

The third formative assessment procedure was to build authenticity and interactiveness (Weigle, 2002) into the expository writing and multimodal composing activities. *Authenticity* refers to how the topics reflect real and concrete issues that are relevant to the writers. The adolescent L2 writers in this study were encouraged to choose topics that were of interest to them and addressed real social and cultural issues in their communities and communities around them.

Interactiveness refers to how the writing activities create opportunities for writers to draw on different sources as well as interact and collaborate with others in their effort at developing ideas and making meaning. In this study, the expository and multimodal activities were designed as mediated activities (Prior, 1998, 2006). As described earlier on in this chapter, the composing process involved students in different group works, taking pictures, working with computers and interacting with different people, such as classmates, siblings, parents and the instructor.

The fourth formative assessment procedure related specifically to students' multimodal texts. A classroom multimodal formative assessment rubric was constructed based on the progress descriptors of multimodal and writing competence (Bearne & Wolsencroft, 2007) (See Appendix E). Key traits of multimodal composing addressed on the rubric include the writers increasing ability to:

- a. **Make decisions about mode and content for specific purpose and audience** (e.g. choose which mode(s) will best communicate meaning for specific purposes (deciding on words rather than images or gesture rather than

words)

- b. **Structure texts** for rhetorical effects (e.g. pay conscious attention to design and layout of texts, and use structural devices – frames, paragraphs, and blocks of text – to organize ideas.
- c. **Use technical features for effect** (e.g. choose language, punctuation, font, typography and presentational techniques to create effects and clarify meaning)
- d. **Reflect** (e.g. explain choices of modes(s) and expressive devices, including words and images). (I have explained this in detail in chapter two).

After describing and discussing the multimodal and teaching activities, I now turn my attention to describing the setting, participants, and data collection and analysis procedures.

Research Setting

The research was conducted in a basic (i.e., K-12) school located in a small village in southern Ghana. The school serves over ten communities, which predominantly speak Fante (Akan) as their first language. Other Ghanaian languages spoken in the region include (Akuapem and Ashanti) Twi, Ewe and Ga. English is the official language in Ghana and the medium of instruction in all educational institutions, and (in most cases) at all levels. The official language policy in Ghana states that in the first three years of primary education, the Ghanaian language prevalent in the local area is to be used as the means of instruction; English is to be studied as a subject at this stage.

From Primary Four (4th Grade), English should replace the Ghanaian language as

medium of instruction. In practice, however, this policy is fraught with many challenges and has not been implemented successfully (Andoh-Kumi, 1999; Graham, 1971). Most (public and private) schools in Ghana use English as a medium of instruction from day one of the child's education. That means children in Ghana start learning English from the moment they start going to school. However, students in most communities use their first languages at home, almost restricting the use of English to the confines of the school (Andoh-Kumi, 1999; Anyidoho & Kropp Dakubu, 2008; Bukari, 2009). The situation was no different for students in this study.

The student population of the selected school at the time of the research was about 650. The student-teacher ratio was approximately 1 teacher to 45 students. The school administration built a spacious computer lab in 2006 and installed 25 computers with the purpose of introducing students to basic computer literacy and preparing them to take tests in computer skills as part of their basic education certificate examinations in computer literacy. These examinations serve as the transition between junior high school (grades 7-9) and senior high school (grades 10-12). The school's effort is in line with the national policy to focus on ICT for development (Ministry of Communications, 2003). The computers were networked to each other, but with no access to the Internet.

Research Participants

The participants for the study were second year junior high school students (JHS 2) in the selected school. All of the students spoke at least one indigenous Ghanaian

language as their L1. Languages students reported speaking included Fante, Twi, Ga and Dagaare. For almost all the students, the only access to computers was in school. There were 48 students in the class, 25 girls and 23 boys. Of these, three were selected as focal students for an in depth qualitative analysis of the students' development of multimodal and L2 writing competence.

Procedure for selecting focal students

The three students were selected through a “formal case study screening procedure” (Yin, 2006, p. 115). The selection was based on the following screening procedure:

Students' initial writing competence: This research was conducted in the second term of the academic year (April – June, 2011). Coming into this term, I examined the school's assessment of the JHS 2 students' writing, using the end of the first term's (March, 2011) examinations (i.e., the examinations immediately preceding my research). The purpose for using the end of term's examination for the screening was to gain a sense of each student's general writing skills. I therefore obtained both the grades (scores) and the actual texts from the instructor of record. Although I used the scores for the screening procedure, I also read each student's text and made brief comments about what I considered to be the student's level of writing competence, taking into account the requirements and circumstances under which these texts were produced (i.e., timed-restricted and examination context). I grouped the students' papers into three categories based on their scores: 1) students whose average scores were in the upper quartile range; 2) students whose average scores congregated

around the median; and 3) students whose average scores were in the lower quartile range.

Students' prior exposure to multimodal composing: I also examined students' exposure to multimodal text making from the initial survey, which was based on Bearne & Wolstencroft's (2007) descriptors for multimodal text making. Students who generally indicated they were very good or good at using specific skills were described as having **good exposure** to multimodal composing; those who generally indicated they were beginners or were not familiar with specific skills were described as having **limited exposure** to multimodal text making (see description of initial survey below).

Using students' writing scores and self-reported exposure to multimodal text making, I selected the 3 students as representative of the spectrum of the JHS 2 students' writing and multimodal composing abilities (see Table 5 below).

Table 5

Criteria for Focal Student Selection

Student/ Embedded Cases	Criteria (Ability at Entering Point)
Effie	<ul style="list-style-type: none">• Upper quartile initial writing score• Good prior multimodal exposure
Ama	<ul style="list-style-type: none">• Average initial writing score• Limited prior multimodal exposure
Ato	<ul style="list-style-type: none">• Lower quartile initial writing score• Limited prior multimodal exposure

Instruments and Procedures for Qualitative and Quantitative Data Collection

(a) Initial survey

The initial survey was administered in the first week of the multimodal composing experience to all 48 students in JHS 2. It consisted of 15 close-ended and 5 open-ended items and focused on obtaining demographic information (gender, age and language background) as well as eliciting responses about the adolescent L2 writers' awareness of the meaning potentials or affordances of different modalities (particularly words and pictures). The questionnaire also aimed at surveying the experiences these writers had in using digital technology to compose multimodal texts (i.e., texts that combine words and images). In particular, the items elicited information about students' familiarity with such multimodal composing skills as using the computer to create a word document, formatting a word document, creating and using PowerPoint, importing clipart into texts, taking pictures with a digital camera, downloading pictures from a digital camera, editing and organizing photographs using basic image editors (e.g. Microsoft photo editor), inserting pictures and other images into texts, creating posters, etc (see chapter four and Appendix A). These survey items were based on the framework for describing multimodal text making (Bearne & Wolstencroft, 2007).

The purpose of the survey was to create a general profile of the students' strengths, challenges and needs in relation to multimodal composing as they began their multimodal composing experience. The items were piloted with 12 students from a junior high school context in Ghana similar to the one in which this study was conducted. The questionnaire was emailed as a word document attachment and

administered by a research assistant (a graduate student with an MPhil degree in sociology and a baccalaureate degree in English education). The responses were scanned and emailed back to me as a portable document format (PDF) attachment. The students' responses helped to modify the instrument to improve its suitability for the target participants and relevance for the research questions. For instance, I revised the language to make it simpler and more specific. I also compared the question items with similar questionnaire items in the literature (e.g. Bearne & Wolstencroft, 2007) to help me improve the quality of the items to respond more specifically to my research questions.

(b) Multimodal texts/documents

Students engaged in producing multimodal texts or documents through multimodal composing activities (MCA). Multimodal texts describe any form of communication made up of a combination of modes - such as written, oral, visual, sound/musical, electronic and gestural modes - and is captured on screen or in print (Bearne & Wolstencroft, 2007). Here I make a distinction between two types of multimodal texts. Type I or 'non-printable' multimodal texts combine words (both spoken and written) with still/moving images and sound – for example, digital stories, short movies, and video recording of presentations. These texts can be accessed only through electronic media and cannot be printed without losing parts of their elements. Type II or 'printable' multimodal texts combine only written words with still images and can be accessed through both electronic and non-electronic media – for example, image-based fliers, posters, designed leaflets, and image-based documents for publication. Bateman (2008) describes the latter (Type II) as *multimodal documents*.

Multimodal documents work with a ‘page-metaphor’ and are static, in that their visual elements do not change or move on the page (Bateman, 2008, p. 9).

Data collection in this study focused on both types of multimodal texts. First, the students composed printable multimodal documents; that is, PowerPoint slides and posters (Type II). A practical motivation for this delimitation is that written documents still play an important role in students’ education. By focusing on multimodal documents, therefore, this research offered students the opportunity to make connections between current word-based writing practices and new forms of multimodal composing practices. Second, students’ poster presentations were video recorded and analyzed as Type I multimodal texts (i.e., as texts combining written and spoken words, as well as gestures and movements).

(c) Expository writing

The students focused on expository writing as part of their multimodal composing activities. Expository writing involves expressing ideas, which are supported with appropriate details, explanation, and logical development of thoughts (Quellmalz & Burry, 1983) Expository writing also involves making and communicating meaning for the purposes of informing and/or persuading one’s audience (Buscemi, 2002; Flower, 1985). Expository writing was selected for this study based on the teaching syllabus for English language in junior high schools in Ghana (Ministry of Education, Science and Sports, 2007). The focus on social or cultural issues in the students’ communities in their expository (and multimodal) texts was meant to allow students to connect their L2 writing practices to concrete and relevant issues impacting their communities and their own lives. It was hoped that, by making these connections,

students would be able to indicate and express how they felt about these issues, what changes they expected, and how they envisioned their future and that of their communities in relation to these issues.

(d) Students' guided (diary/journal) reflections

Each of the students was asked to keep a diary as a *locus* of reflection. Wellington (2001, p. 118) explains that diaries kept by participants of a study provide “an additional source of documentary data which can explore the experiences, activities, thoughts, behaviors and perceptions of informants. It gives their version of events” and can provide a great deal of self-awareness of the processes in which the learners are engaged (Bailey, 1991; McKay, 2006). Diaries are important introspective tools in language research and can provide useful information about language learners' social and psychological processes and experiences that would otherwise be difficult to obtain (Hyland, 2009). Bailey (1983), for instance, analyzed the diaries of 10 learners to understand how anxiety and competitiveness influenced their language learning. Nelson (1993) also used learners' diaries (process logs) to explore students' writing practices, focusing particularly on how they find and use sources for their research project.

In this study, students wrote in their journals for about 10 minutes in class twice a week. The participants were encouraged to focus their reflections particularly on their multimodal composing activity and writing experiences, as well as their understanding of their own progress. For instance, they were asked to make entries about their understanding of the multimodal activities; the decisions they made about the images (pictures) they integrated into their texts and why; the challenges they

encountered regarding the use of different technologies in the production of multimodal texts; and how they went about overcoming these challenges (See chapter five for sample guided questions). The guiding questions were provided to ensure that students' reflections would provide information about their development toward multimodal and writing competence, which is conceptualized as progressing from composing predominantly linguistic texts to composing multimodal texts (focusing specifically on changes or transformations that occurred in relation to students' understanding of the social and cultural issues they wrote about, development of intellectual tools (Engeström, 1999), strategic competence (Alexander, 1997, 2003) and technical knowledge about multimodal composing, and interest in engaging in multimodal composing activities

Providing guidelines for the participants' reflection is a helpful technique for both learners and researchers. A lack of structure can leave inexperienced diarists to attend to unrelated issues, which can make analysis more difficult (Gass & Mackey, 2007). The diaries of the three students were collected on the first and third week of every month (6 times in the entire period) for continuous initial analysis.

As I read their journals, I paid attention to the reflections on their multimodal composing activities and development toward competence. For instance, I focused on how the learners made decisions on content and what modes they selected to communicate their message; their reflection on the way they structured their texts and used technical features for rhetorical effects; and their reflection on the decisions they made about revising their texts.

Researcher-instructor's journal reflection: Before and after every class, I made analytic memos about the process of multimodal text making (the idea was to capture process and development over time). My reflection focused on what and how I planned to teach, my observations and thoughts about students' response to class activities and their knowledge, strategic competence (particularly on how they designed and revised their texts) and interest about multimodal composing.

(e) Semi-structured text-based interviews with students

I interviewed the three focal students about their multimodal texts and writing (Prior, 1998). The interviews were conducted mainly in English. Students were given the option to use the L1. I even sometimes initiated using their L1. The interviews focused on eliciting information on the verbal-visual integration in their texts. I was interested in the kinds of pictures/images they acquired/selected for their multimodal texts and why; the way they integrated these images into their writing (to produce multimodal texts); the ideas and meanings expressed in their texts, and how the verbal-visual integration contributed to the way these meanings were communicated; how their images influenced the overall content and language of their texts. I also asked questions about how the content and meanings expressed in their texts reflected or related to their understanding of things and issues in their social and cultural contexts (i.e. in the school, communities, personal life/families/peer groups, country etc.); how they positioned themselves in relation to these issues, and whether or not they thought their writings and multimodal texts could make any difference (See Appendix C for guided interview questions).

*(f) Video recording of poster presentations*⁴

Video recording was used primarily to collect data on students' multimodal interactions (Norris, 2011) during the poster presentation session. The recording focused particularly on their interactions with their audience and with tools and objects in the context of the presentation, such as the posters and other texts. As interaction involves verbal as well as nonverbal behavior, the information derived from the video recording provided useful insights about the participants' interactions, especially in presenting multimodal texts (Baldry & Thibault, 2005; Erickson, 2006).

To analyze this data I used an inductive (whole-to-part) approach to video data analysis (Erickson, 2006, pp. 183-186). First, I reviewed the entire recorded presentation without stopping, focusing on the interactional event as a whole. Then, I wrote notes on students' verbal and non-verbal communication. Second, I reviewed the entire event again, this time stopping at major points where the presentations highlighted students' interactions with their audience or with specific objects. Third, these high points in their presentations were transcribed and further analyzed, using Baldry and Thibault's (2005) framework for transcribing video texts. The analysis focused on how clearly students communicated the purpose and relevance (substance) of their message to their audience, and how they proceeded to develop and communicate their ideas through appropriate choice of language, and non-verbal cues (e.g. gestures, posture, eye contact, facial expression, etc). (See Chapter 5 for a more detailed discussion on this analytical framework).

⁴ I discuss the analysis of video data at this point because, as Erickson (2006) suggests, it is difficult to talk about what constitutes video data without pointing to its analysis.

(g) Exit survey

The exit survey was administered to 46 students almost three months after the students had completed their multimodal composing activities. Two students who took the initial survey were not available for the exit survey. The delay in administering the exit survey was caused by difficulty in scheduling. Students' completion of the multimodal composing activities coincided with their end of year examinations, a very busy time for students and teachers alike. It was difficult to get at least the majority of the students to answer the questionnaire. At the same time, I had to travel back to the United States. I therefore had to wait for the students to return from their long (summer) vacation before the survey could be administered. I emailed the survey as a PDF to my research assistant. These were printed and administered to students during school hours. After students had answered the questionnaire, the research assistant mailed the hardcopies of students' responses to me.

The survey consisted of 30 close-ended items and focused on eliciting information on students' understanding of the progress they had made regarding multimodal composing and English L2 writing. In particular, the survey items addressed four main areas of transformation, including: 1) Transformations in the writers' technical knowledge (Hubbard, 2004) about multimodal composing (items 1 to 8); 2) Transformations in topic knowledge (Alexander, 2003), that is, in the writers' understanding of social and cultural issues (items 9 to 17); 3) Transformations in the development of intellectual tools (Engeström, 1997) and strategic competence (Alexander, 2003) about multimodal composing (items 18 to

22) and 4) Transformations in their interest in multimodal composing and English L2 writing (items 23 to 30). Figure 5 below shows the timeline for the data collection procedure.

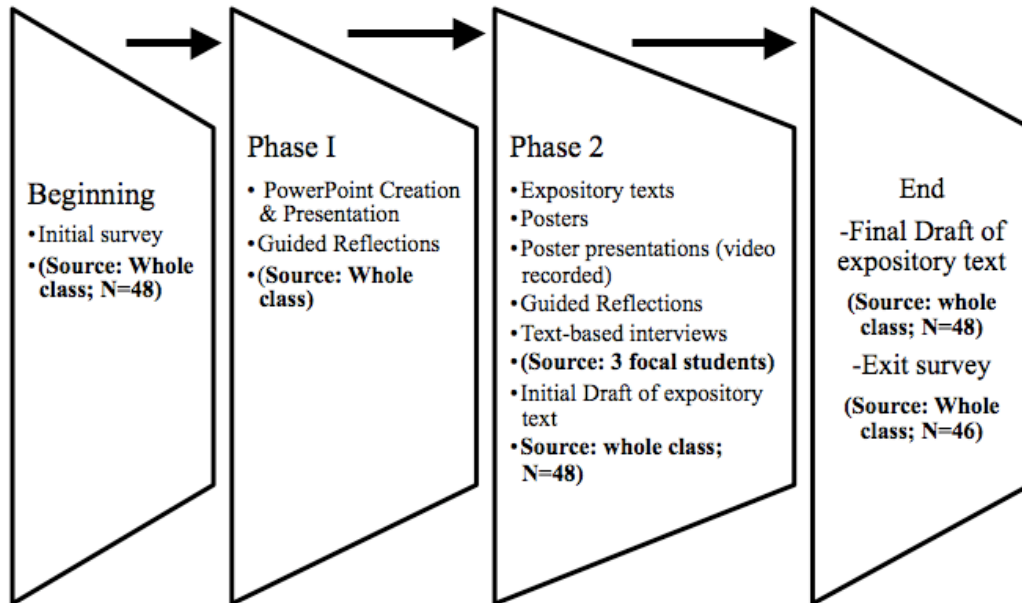


Figure 5. Data collection timeline
Phases 1 and 2 refer to the stages of the multimodal composing activities

Qualitative and Quantitative Data Analysis

The adolescent English L2 writers' development of multimodal and writing competence involved an engagement in complex multimodal activities in specific contexts over time. In view of this, the analysis of the data was primarily qualitative in nature, with the quantitative component playing a supportive role (Creswell, 2009; Yin, 2009). In what follows, I discuss the general analytic procedures or strategies that I followed in this study. I also present an overview of the analysis of the specific questions. Details of how each specific question was analyzed will be discussed in chapters four and five.

General analytic procedures or strategies

A combination of case study analytic strategies and techniques (Yin, 2006, 2009) was used to guide the analysis of the data. First, I used the research questions and conceptual framework (see chapters one and two for details) as theoretical assumptions to guide the developmental case study analysis. As Yin explains, using theoretical assumptions helps to focus attention on specific data that are needed to answer the research questions. It is important to note that using assumptions to guide a qualitative case study analysis does not present predictive, categorical answers. Rather, it involves researchers in a complex analysis in order to identify and understand the different connections and tensions inherent in the assumptions.

The second analytic strategy I used, therefore, was to adopt relevant complementary theories to serve as lenses for this type of analysis. These theoretical lenses include activity theory (Engeström, 1999; Leont'ev, 1978; Prior, 1998, 2004), multimodal social semiotic analytic framework (Jewitt, 2009; Kress & van Leeuwen, 2001; Stein, 2008; Wysocki, 2004), multimodal interaction analysis (Baldry & Thibault, 2005; Norris, 2011) and Alexander's (1997, 2003) Model for Domain Learning [see details in chapters 2 and 5]. One advantage in using these theories is that they guide and help connect the analysis to the bigger picture in the field of English L2 writing and to contribute to the expansion of how the field conceptualizes L2 writing.

The third analytic strategy was to use both qualitative and quantitative data. Portions of the data set were subjected to descriptive statistical analysis at the same time that the qualitative analysis remained central to the case study (Yin, 2009). The

descriptive statistical analysis focused on students' views on their multimodal composing abilities. Subjecting the same data set to both qualitative and quantitative analysis makes this choice a strong analytic strategy.

I also adopted a time-series analytic technique (Yin, 2009) to allow me to trace the changes that occurred in the L2 writers' development of multimodal competence and writing (see Figure 5 above for the data collection timeline). Using this analytic technique made it possible for me to assess and describe the development of students' English L2 writing over time. Again, using assumptions derived from the research questions and conceptual framework was useful in this technique, because they helped to offer explanations to the changes that did or did not occur (Yin, 2009).

Finally, I engaged in data analysis while still collecting data. Beginning the analysis at the data collection stage is a well-established qualitative analytic strategy (Denzin & Lincoln, 2008; Yin, 2006, 2009). Using this strategy helped me to modify the data collection plan. For instance, through the initial analysis, I identified areas that needed further data in order to answer the research questions adequately. A particular example is how the exit survey was constructed and organized. Most of the items on the survey were added or modified due to the initial analysis of the students' multimodal composing experiences. The technique also offered me the opportunity to integrate the process of member checking into the ongoing data collection and analysis procedure. This created opportunities for the participants to clarify aspects of my interpretation of their work and responses and contribute additional perspectives on the analysis (Baxter & Jack, 2008, p. 556).

Analysis of specific research questions

Table 6 (below) summarizes the analytical procedures for each specific question.

Question one uses cultural-historical activity theory (Engeström, 1999) to trace the multimodal composing activities in the JHS classroom. Question two examines the outcome of these activities; in terms of how activities influenced development of multimodal and L2 writing competence. Details of these analyses will be presented in chapters four and five, close to the specific questions.

Table 6

Overview of Analytic Procedure for Specific Research Questions

Research Questions	Data	Data Analysis
Q1. How can adolescent English L2 writers engage in producing multimodal texts in an English as a second language classroom context, where students receive instruction about multimodal composing?	Overview of Research Q1: Focuses on tracing the processes of the adolescent L2 writers' multimodal composing Uses activity system as unit of analysis (Engeström, 1987, 1999) Uses data from the whole class ($N = 48$)	
(a) What multimodal composing experiences did adolescent L2 writers bring to the composing process, with specific reference to (i) their awareness of the meaning potentials (affordances) of different text forms (i.e., pictures and words), and (ii) their familiarity with using different technologies to compose multimodal texts?	Initial survey ($N=48$) (a) Open-ended items (b) Close-ended items	(a) (i) Summary of responses to open-ended questions; (ii) Coding for awareness affordances of different modalities (i.e., words and pictures), using structural coding technique (Saldaña, 2009); (iii) Detailed qualitative analysis of major themes (b) Quantitative analysis of students' familiarity with using different digital tools to compose multimodal texts
(b) What multimodal composing activities did they engage in, and what instructional support did they receive?	(a) Transforming People and Communities Project (b) Guided reflections (c) Observational notes (Researcher's journal)	Tracing and understanding adolescent L2 writers' multimodal composing as literate activity, using activity theory (CHAT) (Engeström, 1987, 1999; Prior, 1998, 2006)
(c) What benefits (i.e., achievement of intermediate goals) and challenges (contradictions) arose as part of the multimodal composing process, and how were the challenges addressed?	(a) Guided reflections (b) Observational notes (Researcher's journal)	Analyzing contradictions, resolutions, achievement of intermediate goals and ongoing transformations: CHAT, particularly expansive learning theory (Engeström, 1999; Sannino, Daniels and Gutierrez, 2009)

Q2. How did the adolescent English L2 writers' multimodal activities influence the development of their L2 writing and multimodal competence?	(a) Posters (b) Poster presentations (video recorded) (c) Guided Reflections (d) Text-based interviews (Source: 3 focal students) (e) Exit survey ($N = 46$) (f) Initial & final drafts of expository texts ($N = 48$) (g) Observational notes (Researcher's journal)	Analyzing outcome, i.e., development of multimodal & L2 writing competence: stages and elements of development identified through MDL (Alexander, 1997, 2003), descriptors of multimodal competence (Bearne & Wolstencroft, 2007) and CHAT (Engeström, 1999); (a) – (d) (i) Multimodal Social Semiotic analysis (Halliday, 1978; Kress, 2009; Stein, 2008); (ii) Intersemiotic analysis (Royce, 2002); (iii) Multimodal Interaction analysis (Baldry & Thibault, 2005; Norris, 2011); (iv) Qualitative analysis of expository texts using Criterion SM (e) & (f) Quantitative analysis
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Reporting on Credibility and Dependability

The purpose of reporting on credibility and dependability is to check the quality of the results of the developmental case study (McKay, 2006; Yin, 2009). In qualitative research, credibility and dependability “determine whether the account provided by the researcher and the participants is accurate, can be trusted, and is credible” (Creswell & Plano Clark, 2007, p. 134; also see Brown, 2002, p. 242). A number of strategies were used to determine credibility and dependability of the analysis and findings of this study.

Triangulation

The first strategy was *triangulation*. Triangulation refers to the effort made to understand an aspect of human behavior by studying it from different standpoints and through the use of multiple sources of evidence (Brown & Rodgers, 2002; Yin, 2009). Patton (2002) identifies different types of triangulation, including data triangulation,

investigator triangulation, theory triangulation and methodological triangulation (also see Brown & Rodgers, 2002; Yin, 2009). Two of these types of triangulations were particularly significant to this study.

Data triangulation was used to gather and corroborate evidence from multiple sources in order to understand the multimodal composing experiences of adolescent L2 writers and their development of multimodal and writing competence. The multiple qualitative and quantitative data sources included survey responses, semi-structured interview transcripts, guided reflections, expository texts, posters, and poster presentations.

Theory triangulation involves the use of multiple theoretical frameworks in analyzing specific data set (Brown, 2002; Patton, 2002; Yin, 2009). I used specific learning theories – activity theory (Engeström, 1999) and Model of Domain Learning (Alexander, 2003) – to help me identify and analyze specific stages and traits of the learners’ development of multimodal and L2 writing competence. To complement this analysis, I drew on multimodal social semiotic theory (Halliday, 1978; Jewitt, 2009; Kress, 2010; Royce, 2002; Stein, 2008) and multimodal interaction analytic perspective (Baldry & Thibault, 2005; Norris, 2011) to help me analyze the meanings the writers made through their multimodal texts and the changes that occurred in such meaning making activities. Using these multiple perspectives helped to understand adolescent L2 writing and multimodal composing from different theoretical and interdisciplinary standpoints, thereby enhancing the credibility and dependability of the analysis and findings (Brown, 2002).

Peer debriefing

The second strategy was *peer debriefing* (Brenner, 2006; McKay, 2006; Oxford, 2011). This strategy involves asking others to examine the data, such as “peers [...] who are familiar with qualitative research as well as the content area of the specific research” (Creswell & Plano Clark, 2007, p. 135). At the early stages of the analysis, Richmond Dzekoe, a PhD candidate with a research focus on computer-based multimodal composing of ESL/EFL college students, was asked to examine about 25% of the qualitative data, including students’ posters, video recording of their poster presentations and guided reflections on their poster creation and presentation activities. Specifically, Dzekoe examined the data to see whether the analytic strategies and framework I adopted matched the data, whether the analysis responded to the research questions, and whether the emerging themes and preliminary findings I had detected were visible to other researchers. His responses to these questions were in the affirmative. Brenner (2006, p. 368) explains that sharing portions of data with other researchers “allow [these] other researchers to see how a researcher distills ideas from the primary data and to judge whether the patterns detected are visible to people less connected to the original data collection.”

Intercoder agreement

The third strategy was to *seek intercoder agreement* in regard to the open-ended items on the initial survey (see description above). This strategy is particularly helpful in checking the dependability of qualitative analysis and findings (Creswell & Plano Clark, 2007). The open-ended items on the initial survey elicited 116 responses from the participants about their understanding of the affordances and constraints of

particular modes (words and pictures) in making meaning. Seventeen codes were generated from the 116 responses through an initial coding process. Once the initial codes had been developed, I involved a second coder (Diana Tai, another PhD candidate) in the continuing process of defining and explaining the codes. After I had explained the codes to the second coder, we coded about 18% ($n = 21$) of the data together to help clarify my definition of the codes. I then modified the codes based on our discussion. The second coder then coded 51% ($n = 60$) of the data. I also recoded the entire data using the modified codes and achieved intercoder agreement of 93%.

Summary

In this chapter, I discussed the ways I position myself in this study as a researcher-practitioner and described the multimodal composing and teaching activities designed for this study. I also provided a detailed description of the design of the study, including research context, participants, data collection methods, and general data analytic procedures. The chapter ends with a discussion on the credibility and dependability of the study. Findings of the study are reported in chapters four and five.

CHAPTER 4: PRESENTATION OF FINDINGS I

Tracing the Process of Adolescent English L2 Writers' Multimodal Composing

Introduction

This chapter presents the findings related to research question one. Research question one has three sub items and focus on understanding the processes and different activities that the adolescent English L2 writers engaged in producing multimodal texts. The overarching goal in posing these questions was to trace the adolescent English L2 writers' experiences in composing multimodal texts, paying attention to (a) students' awareness of the affordances of different modalities (i.e., pictures and words) as well as students' familiarity with using digital technologies to compose different multimodal texts, (b) the specific multimodal composing activities the students engaged in, and (c) the benefits and challenges (contradictions) that arose as part of the composing process. The questions were phrased as follows:

Q1. How can adolescent English L2 writers engage in producing multimodal texts in an English as a second language classroom context, where students receive instruction about multimodal composing?

- a. What multimodal composing experiences did the writers bring to the composing process, with specific reference to (i) their awareness of the meaning potentials (affordances) of different text forms (i.e., pictures and words), and (ii) their familiarity with using different technologies to compose multimodal texts?

- b. What multimodal composing activities did they engage in, and what instructional support did they receive?
- c. What benefits (i.e., achievement of intermediate goals) and challenges (contradictions) arose as part of the multimodal composing process, and how were the challenges addressed?

The findings reported in connection with question one relate to the whole class and are from the initial survey (administered to all 48 students in the class at the beginning of the research and instructional process) and students' guided reflections on group multimodal composing activities. I also relied on my research journal, lesson notes, and students' documents. The decision to present findings relating to the whole class was based on the following reasons. First, findings relating to the whole class responses and group activities create a general picture of the JHS 2 classroom as an activity system, the object of which was to introduce the adolescent L2 writers in that classroom to multimodal composing and to support the development of their writing competence through multimodal activities. Second, the presentation of such findings provides a context or a background for understanding the findings relating to individual composing activities and development of multimodal and writing competence, particularly of the three focal students (discussed in chapter five). Third, the presentation also helps to understand the group project as a space for learner training for the individual multimodal composing activities. For instance, the group PowerPoint project created the opportunity for learners to become familiar with using different digital technologies to compose multimodal texts. Individuals then built on

these skills through the creation and presentation of posters. The findings relating to individual composing activities will be reported and discussed in chapter five.

Findings from Initial Survey

The initial survey aimed at gathering information on the adolescent L2 writers' awareness of the meaning potentials or affordances of different modalities (particularly words and pictures) and the experiences these writers had in using digital technology to compose multimodal texts (i.e., texts that combine words and images). Students' responses to the open-ended questions on the survey indicated that the students were aware of different meaning potentials and limitations (i.e., affordances) that pictures and words (as different text forms) offered to composers and readers. However, responses to the closed-ended questions, which were analyzed quantitatively, indicated that most of the writers were not familiar with how to use different digital tools to compose multimodal texts. These findings are discussed in detail in the sections that follow.

Results for Question 1a (i)

What multimodal composing experiences did the writers bring to the composing process, with specific reference to their awareness of the meaning potentials and limitations (affordances) of different modalities (i.e., pictures and words)?

Focus of analysis

***Adolescent L2 writers' awareness of the affordances of pictures and words:
Qualitative results from three open-ended items on the initial survey***

The three open-ended questions on the initial survey (i.e., items 6, 7 & 8) focused on eliciting responses from the adolescent L2 writers about their awareness of the opportunities and constraints that pictures and words offered composers and readers.

The questions were:

6. Do you prefer reading words or pictures? Why?
7. What can words tell you that pictures can't?
8. What can pictures tell you that words can't?

The analysis begins with a summary of the responses to each of the items. This will be followed by a description of how the responses were coded for major categories and themes, and a discussion of the themes that emerged from the coding process.

Summary of responses to item 6: Do you prefer reading words or pictures? Why?

Majority of the students (i.e., 77.1%; 37 out of 48 respondents) indicated that they preferred reading words. Also, 14.6% (7) preferred reading pictures, and 8.3% (4) preferred reading both pictures and words. The reasons the students offered for their preferences connected with the opportunities that words and pictures offered them as

readers and writers. The following are examples of the explanations students offered for their preferences; in the students' own words:

Excerpt 4.1: Sample reasons for preference for reading words or pictures

- S1. Words because you can find meanings
- S2. Words because vocabularies are gained from words
- S3. Words because it will help me understand than pictures
- S4. I prefer reading pictures because it gives more information
- S5. If you cannot read, pictures will tell you something
- S6. Pictures because they tell what the words are talking about
- S7. Both because pictures indicate the actions, words also tell you what happens
- S8. Both because words help when speaking and pictures help us to remember the past

(S = sample response)

Summary of responses to item 7: What can words tell you that pictures can't?

The respondents indicated that words offered the opportunity to narrate one's story, describe and explain situations and how specific things work or function, learn a language or develop language skills (such as writing, reading, acquiring vocabulary and spelling). Excerpt 4.2 provides examples of students' responses.

Excerpt 4.2: Sample responses on the affordances of words

- S1. Words can tell about history
- S2. Words can give you a greater chance of writing
- S3. Words can explain how the pictures will be
- S4. Words can tell my behaviour but pictures can't
- S5. Words help me to read and spell
- S6. Words can explain things into details
- S7. Words can tell me nice and interesting stories
- S8. Words can tell you that you are bad but pictures can't tell you

Summary of responses for item 8: What can pictures tell you that words can't?

Students' responses to this item suggested that pictures offered individuals the opportunity to tell their stories (usually through visual narratives) and attach value to specific situations or behavior. Students' also indicated that pictures are better suited for identifying people and marking aesthetic features. Pictures also evoke emotions. On the other hand, if one's communicative goal was to explain some things to one's audience, using pictures alone would generally not be a good choice. The following examples from students' responses reflect these meaning potentials and limitations.

Excerpt 4.3: Sample responses on the affordances of pictures

- S1. Pictures can tell me about nature
- S2. Pictures help you to see what is happening
- S3. Pictures can tell funny things about me
- S4. Pictures can show me the way I am
- S5. Pictures can educate and tell you experiences of life

S6. Pictures tell me more about the words I am reading

S7. Picture are used to identify people easily

S8. Pictures help me to understand

S9. Pictures tell stories easily

S10. Pictures can imagine you, but can't explain

In order to analyze and present the findings from the writers' responses, I organized and categorized the data, and used the major categories (explained below) as a starting point for a detailed qualitative analysis. First, I used structural coding to initially organize and categorize students' responses to the open-ended questions on the survey. Structural coding is a question-based code that "acts as a labeling and indexing device, allowing researchers to quickly access data likely to be relevant to a particular analysis from a large data set" (Namey, Guest, Thairu, & Johnson, 2008, p. 141). In structural coding, participants' responses are organized under a broad code generated from the research question. The organized responses are then further coded for a more detailed qualitative analysis (Saldaña, 2009). Following this procedure, I coded for affordances based on research question 1a(i), the focus of which was to understand the multimodal composing experiences the writers brought to the composing process, with specific reference to their awareness of the meaning potentials and limitations (affordances) of different modalities (i.e., pictures and words). The objective of the coding process was to identify, describe and categorize the different affordances that participants mentioned in their responses. In order to code each response, I asked the question: how does this response indicate or suggest what the modality of word and/or picture can or cannot do? Once I identified how the

meaning potential of a specific modality had been suggested in the response, I relied on the linguistic markers associated with the specific meaning potentials and used those markers to determine the kind of affordance described in the participant's response. Below, I illustrate this process by describing how individual sample responses were coded.

- i. Words can explain things into details
- ii. Words can tell me nice and interesting stories
- iii. Pictures are used to identify people easily
- iv. [I prefer reading both words and pictures] because words help when speaking and pictures help us to remember the past

In the first response (i) the participant indicated that the modality of word has the potential of offering detailed explanation about things. This meaning potential is suggested by the linguistic markers *explain* and *details*. The response, therefore, suggests that the modality of word possesses *explanatory meaning potentials or affordances*. In the second response (ii) the modality of word has the meaning potential of telling stories, linguistically marked by the phrase *tell ... stories*. The meaning potential suggested is that of *narrative affordance*. The linguistic marker, *identify*, in the third response (iii) suggests that pictures offer the opportunity to establish people's identities. The response was therefore coded as an *affordance for identification*. In the fourth response (iv), words are associated with the *affordances of speech* (marked by the lexical item *speaking*); and pictures with the opportunities for *remembering the past*, which I considered as an aspect of narrative and, therefore, coded as a narrative affordance.

Once the initial codes had been developed, I involved a second coder in the continuing process of defining and explaining the codes. The inter-coder agreement was 93% (see detailed explanation in chapter 3). As Table 4.1 indicates, seventeen codes were generated from the 116 responses through this initial coding process.

Second, I prepared a frequency report on the categories of affordances that were identified, paying attention to the number of participants who mentioned a particular affordance (Namey, Guest, Thairu, & Johnson, 2008). This descriptive technique helped me to organize the categories and to identify which categories of affordances were more frequently mentioned and which ones the participants rarely talked about (see Table 7). It also helped me to identify the codes that could stand on their own as major categories, and those that could serve as subcategories.

Students' responses suggested that some affordances were common to both modalities (I described these as shared affordances), whereas other affordances were specific to words or pictures (described as mode-specific affordances). Both pictures and words offer composers the opportunity to tell their stories (narrative affordances), describe events, persons or situations (descriptive affordances), attach value to specific situations or behavior (instructive affordances), realize how different modes combine to make meaning (complementary affordances), describe or evoke emotions (emotional affordances), and support readers to understand the writer's message (affordances for comprehension). A quick look at Table 7 reveals that narrative affordances, and affordances for comprehension were the most frequently mentioned in this category, while emotional affordances was the least mentioned. With regard to mode-specific affordances, students' responses suggested that affordances for

identification, aesthetic affordances and compensatory affordances were generally connected to pictures, while language related skills (such as reading, writing, spelling, speaking, and vocabulary acquisition) were related to words. Affordances for offering detailed explanation and for motivation for language learning were also related to words. The most frequently mentioned meaning potentials in this category were affordances for identification and explanatory affordances; writing, language proficiency and compensatory affordances were the least mentioned. It is important to mention that words and pictures overlap in their affordances in a more complex way (Kress, 2010; Norris, 2011; Royce, 2002) than portrayed by students' responses; however, the responses show students' understanding of different meaning potentials and limitations of the modalities of words and pictures.

Table 7

Initial Organization of Codes and Frequency Counts

Shared Affordances	Frequency (Number of Participants)	
	Words	Pictures
1. Narrative	9	11
2. Comprehension	15	5
3. Complementary	4	9
4. Descriptive	3	7
5. Instructive	3	3
6. Emotional	1	2
Mode-Specific Affordances		
7. Identification	1	12
8. Explanatory	11	-
9. Vocabulary	7	-
10. Speech/ Speaking	6	-
11. Aesthetic	-	6
12. Spelling	4	-
13. Reading (in general)	3	-
14. Motivation	3	-
15. Language proficiency	2	-
16. Compensatory	-	2
17. Writing (in general)	2	-

Table 8

Coding Scheme and Resulting Categories of Affordances of Pictures and Words

Categories	Definitions of codes	Linguistic markers	Sample participant responses
NARRATIVE AFFORDANCES	When a statement refers to the recounting of present, past or future experiences, events, happenings, or to history	Tell ... history, tell ... what happens, past, future, happening, going on, doing, tell ... stories	1. Words can tell about history 2. Words can tell you what happens in public 3. Pictures help you to see what is happening
AFFORDANCES FOR COMPREHENSION	when a statement refers to how modalities (i.e., words or pictures) help with understanding	understand, get the ideas, understandable, what they mean	Words help you to understand what you are reading
AFFORDANCES FOR COMPLEMENTARITY	when a statement refers to how a modality combines with other text forms to ensure understanding. It also includes cases of showing contrast between modalities.		[I prefer] both because pictures indicate the actions, words also tell you what happens
<u>Subcategory</u> Compensatory	when a statement refers to how a person substitutes one modality or strategy with another.		If you cannot read, pictures will tell you something
DESCRIPTIVE AFFORDANCES	when a statement refers to how a text form helps to describe something or someone, or how something looks like.	how ... I am, how ... things look like, tell ... about nature, describe	1. Pictures describe well how things look like 2. Pictures can tell me about nature
<u>Subcategories</u> Describing identities (identification)	when a statement refers to how modality helps identify something or someone, or refers to an image, or helps one to imagine or know how something looks like	identify, what ... is, looks like, imagine you, identities, the way I am, tell ... about me	1. Words can tell what something else is 2. Picture are used to identify people easily
Describing Emotions	when a statement refers to how a text form helps to express the way one feels about self or something	happy, funny things about me, can make ... happy	Words because it makes me happy and understand things
Describing Behavior (Instructive)	when a statement refers to how a text form helps to provide educative or value-oriented directive, which guides individuals as to how they should or should not behave, or describes their behavior.	behave, behavior, reacting, stop my bad ways, should not overdose, tell... you are bad, educate,	1. Words can let me stop my bad ways but pictures can't 2. Pictures can educate and tell you experiences of life
Describing Aesthetic Features	when a statement refers to how a text form reveals the specific features of someone or something, such as color, beauty or handsomeness	how beautiful, color, how handsome	Pictures can tell how handsome I am but words can't

Describing Motivation	when a statement refers to how a text form encourages one to learn/study, or help with the person's schoolwork.	help ... for my school work, help you to study, encourages	[I prefer reading] words because it encourages me when learning and helps me to learn big things
EXPLANATORY AFFORDANCES	when a statement refers to how a text form helps to explain, give details, or give reasons about something.	explain, tell ... the reasons why, give ... more ideas, tell ... the meaning	1. Words can explain things well to me 2. Words can tell the meaning of something 3. Words can tell me the reasons why something is happening but pictures can't I prefer reading words because I want (my English) to be perfect
AFFORDANCES FOR LANGUAGE PROFICIENCY	when a statement refers to how a person learns a language in general (e.g. English) with or without reference to any specific skill		
<u>Subcategories:</u> Vocabulary:	when a statement refers to how a text form helps with vocabulary learning or understanding words or how to find meaning		Words because vocabularies are gained from words
Speech/ Speaking	when a statement refers to how a text form offers opportunities for speaking or for pronunciation		1. I prefer reading words because words will help me know how to ... pronounce new words 2. Words because it helps me to speak English very well
Spelling	when a statement refers to how a text form helps with spelling		Words help me to ... spell.
Reading	when a statement refers to how a text form offers opportunities for reading in general (without reference to how reading helps with the acquisition of other skills)		Words help me to read.
Writing	when a statement refers to how a text form offers opportunities for writing in general (without reference to the acquisition of other skills)		Words can give you a greater chance of writing.

The third step was to merge the 17 identified codes into 6 major categories of affordances based on the similarities and interconnectedness of the meaning potentials the specific codes revealed (Saldaña, 2009). Some of the codes were large enough to stand on their own as major categories. Others, however, were merged together to form subcategories under major categories. The six major categories of affordances included: 1) Narrative affordances, 2) Affordances for comprehension, 3) Affordances for complementarity (subcategory: compensatory affordances), 4) Descriptive affordances (subcategories: describing identities, describing behavior,

describing aesthetic features, describing emotions, and describing motivation), 5) Explanatory affordances, and 6) Affordances for language proficiency (subcategories: vocabulary, speaking, writing, reading, and spelling). Table 8 lays out these categories and subcategories of affordances and their definitions. As I re-read the data under these regrouped categories of affordances I found patterns across the categories of affordances that I further grouped into two major themes, relating to 1) the affordances of pictures and words as modalities for meaning making, and 2) the interconnectedness between narratives and multimodal meaning making. The themes are discussed below.

On the affordances of words and pictures as modalities for making meaning

Affordances refer to the opportunities that specific modalities offer composers and readers, as well as the limitations these modalities impose on their users (Jewitt, 2009; Kress, 2009). Understanding the affordances or meaning potentials of specific modes is an important aspect of developing multimodal competence. This is because by definition, multimodality offers choice of modes or of modalities (Kress, 2009, 2010). In a specific communicative context, does one want to use written or spoken words, still or moving images, layouts, gestures or movement, or a combination of these modes? Each mode has the potential to achieve specific communicative purposes. Some modes or modalities are more effective than others depending on what communicative purpose a meaning maker wants to achieve. The fact that the participants in this study demonstrate an understanding of the potentials of pictures and words as modalities for making meaning is, therefore, significant to understanding their multimodal composing process. As Bearne and Wolstencroft

(2007) explain, one of the markers of a competent multimodal writer is that the writer is able to decide on mode and content for specific purpose(s) and audience(s). This decision-making requires that the writer is able to choose which mode(s) will best communicate meaning for specific purposes (deciding on words rather than images, or deciding between images to include in text) and use perspective, color, and language to engage and hold a reader's attention. It also involves selecting appropriate content to express personal intentions, ideas and opinions, and adapting, synthesizing and shaping content to suit personal intentions in communication. By demonstrating an awareness of the meaning making potentials of specific modalities, the participants of this study positioned themselves as potential good decision makers in relation to multimodal text making.

Another significant aspect of the participants' responses is that they point to an array of meaning potentials that pictures and words offer. By indicating that pictures and words offer different shared and mode-specific affordances, the participants' responses highlight the interdisciplinary aspect of adopting multimodal approach to the teaching and learning of writing (Palmeri, 2012; Stein, 2008), focusing particularly on the intersection between language and images and the ways these modalities help writers to create, represent and communicate meanings. Evidence of the intersection between language and images, as well as how this intersection influences the teaching and learning of writing, is also found in participants' responses in relation to affordances of complementarity). Affordances of complementarity refer to how different modalities combine and complement each other to communicate specific meanings. As excerpt 4.4 indicates, students'

responses suggested that in the process of making meaning, pictures and words play different but complementary roles. For instance, response samples 1 and 2 from excerpt 4.4 suggest that in a particular meaning making process, pictures can “indicate actions” (as in showing or pinpointing the specific events captured through the lenses of a camera or arrested on a surface through painting or drawing), while words can “tell what happens” (as in narrating the step-by-step unfolding of the events). Also, situating the complementarity within the practice of reading, students explained that pictures could reveal more (or give more information) about words (see sample response 4), and that in some cases, individuals could substitute one modality or strategy with another, as in relying on pictures for meaning because one cannot read verbal texts (see sample response 5).

Excerpt 4.4: Sample responses showing affordances of complementarity.

S1. [I prefer] pictures because they tell [show?] what the words are talking about

S2. [I prefer both] because pictures indicate the actions, words also tell you what happens

S3. [I prefer both] because words help when speaking and pictures help us to remember the past

S4. Pictures tell me more about the words I am reading

S5. If you cannot read, pictures will tell you something.

(S = Sample response)

The description of affordances of complementarity, as found in students' responses, reflects Royce's (2002, 2007a, 2007b) notion of *intersemiotic complementarity*, which also focus on the way that visual and lexical modes complement each other to communicate meaning. Situating his work within Systemic Functional Linguistics (see Halliday, 1985), Royce explained that a writer's visual ideational choices (i.e., choices expressing meaning through visual content) relate semantically to the written ideational choices (i.e., choices expressing meaning through language) to express specific meanings. Royce's explanation also reveals the complexity inherent in making meaning through the integration of modes. According to Royce, the intersemiotic relations between the visual elements and language in specific texts can occur in different ways. For instance, a lexical item can encode the same experiential meaning represented in the visual element. He describes this representation as intersemiotic repetition. The intersection between words and images can also show similarity relations (i.e., intersemiotic synonymy) or opposition relations (intersemiotic antonymy) between the visual and lexical elements. Such complexity should be taken into consideration when examining pictures and words as complementary modalities for meaning making and the way such complementarity influences teaching and learning of writing. The explanation of the connection between narrative writing and multimodality (below) gives further insight into the complexity associated with multimodal meaning making.

On the interconnectedness between narrative writing and multimodality

As the participants indicated, both pictures and words offer writers the opportunity to tell their stories. Examples of participants' responses indicating the potential for narrativity are presented in excerpt 4.5.

Excerpt 4.5: Sample responses on the narrative affordances of words and pictures

- S1. Words can tell about history
- S2. Words can tell me nice and interesting stories
- S3. Words can tell you what happens in public
- S4. Words can tell me more about what is happening
- S5. Words can tell you what is going on but pictures sometimes can't
- S6. Words can tell me things that have happened and those that are about to happen
- S7. Words can tell you something about your future but pictures can't
- S8. Pictures can tell me history
- S9. Pictures tell stories easily
- S10. Pictures help you to see what is happening
- S11. A picture can easily tell you what is happening
- S12. Pictures can show you what somebody is doing
- S13. Pictures can tell something in secret

The mention of narrative affordances highlights the historical and multimodal nature of storytelling (Bakhtin, 1981). Several of the participants' responses (e.g., samples 1, 3, 4, 6, 7, 8, 11 and 13) suggest that words and pictures do capture history by recounting past, present and future experiences ("things that have happened" "what is going on" and "those that are about to happen"). They also indicate that these

experiences do not only happen in time (past, present and future) but also in specific physical or symbolic spaces (e.g., “in public” or “in secret”). Participants’ awareness of the historical nature of narrative affordances reflects the understanding in several disciplines (e.g. narrative studies, historical studies, language studies, and studies of general arts) about the spatial and temporal element of human storytelling. Our human stories are always told in relation to our past, present and future (i.e., in time and space frame; Bakhtin, 1981), not as disjointed episodes, but as significantly interconnected experiences (Adawu & Martin-Beltran, 2012; Mishler, 1999, 2006; Pavlenko, 2007). In a sense then, the participants’ responses support the understanding that narrative meanings are always created, represented and communicated in a spatial-temporal frame (Bakhtin, 1981).

The focus on narrative affordances also brings us to think about the intersection and interconnectedness of narrative writing and multimodality. Storytelling is always an embodied, multimodal activity (Finnegan, 2002; Page, 2010; Stein, 2008). For instance, when performing stories orally, storytellers use voice, facial expressions (e.g. smile, frown, gaze) and bodily movements to animate and give meanings to their story (Stein, 2008). Individuals also use their experience of visual texts (such as images, films, picture books and computer games) to help them create mental pictures of their stories and give them inspiration for writing these stories (Bearne and Wolstencroft, 2007). We also see the interconnectedness between narrative writing and multimodality in the different ways narrators combine pictures, videos, sound and verbal texts to create digital stories (Ohler, 2008; Page, 2010). In the classroom context, such opportunities to engage in storytelling through the use of

a plethora of modes enhances students' creative and innovative abilities and supports meaning making potentials, which are not possible through the use of verbal texts alone (Kress, 2010; Stein, 2008). In this study, the participants' responses relating to narrative affordances indicated their ability to conceptualize the interconnectedness of narratives and multimodal meaning making. Ideally, this ability to conceptualize the meaning potentials of narrative and multimodal text making should correspond with the ability to actually compose multimodal texts (Bearne & Wolstencroft, 2007). In the case of the participants in this study, however, the reality was that most of them at the initial stages of the course had limited experiences with using different digital technologies to actually compose multimodal texts. Results relating to participants' familiarity with the use of digital tools to compose multimodal texts are reported under question 1a (ii) below.

Results for Question 1a (ii)

What multimodal composing experiences do the writers bring to the composing process, with specific reference to their familiarity with using different digital technologies to compose multimodal texts?

Focus of analysis

Adolescent L2 writers' experiences (level of competence) in using digital technologies to compose multimodal texts: Quantitative results from initial survey

Items 11 through 20 on the initial survey focused on eliciting information about the adolescent writers' experiences (i.e., level of competence) in using different digital technologies to compose multimodal texts. The multimodal composing skills on the survey included using the computer to create a word document, formatting a word document, using PowerPoint, importing clipart into text, taking pictures with a digital camera, downloading pictures from a digital camera, editing and organizing photographs using basic image editors (e.g. Microsoft photo editor), inserting pictures and other images into PowerPoint and word documents. These survey items were based on the framework for describing multimodal text making (Bearne & Wolstencroft, 2007). Students were asked to respond to the questions on a four-point Likert-scale, defined and interpreted as follows:

3= Very Good (i.e., I have sufficient skill to help others with this)

2= Good (i.e., I have enough skill to do this on my own, but can't help others)

1= Beginning (i.e., I have just been introduced to this skill)

0= Not familiar (i.e., I have no experience using this skill)

The numbers were treated as interval scales, and the data were entered into SPSS (v20.0) for analysis. Students who generally indicated they were *very good* or

good at using specific skills were described as having good exposure to multimodal composing; those who generally indicated they were *beginners* or were *not familiar* with specific skills were described as having limited exposure to multimodal text making. The results were reported using frequencies and percentages, as displayed in Table 9.

The results (see Table 9) showed that majority of the students had limited exposure to digital-based multimodal composing: More than eighty percent of the students indicated that they had limited exposure to seven out of the ten skills mentioned on the survey. For instance, 87.5% (n = 42) of the students reported that they had limited exposure to using PowerPoint; 83.4% (40) were not familiar with or had just been introduced to importing clipart into texts; 95.8% (46) had limited exposure to using basic image editors to organize and edit pictures; and 85.4% (41) had no experience about inserting pictures into PowerPoint and word documents to create multimodal texts, or had just been introduced to the skill. Only in two specific skills did 50 percent or more of the students indicate they had good exposure (see item 11, using computer to create word document and item 17, taking pictures with digital camera).

Table 9

Percentage and Frequency of Students' Level of Competence in Using Digital Technologies to Compose Multimodal Texts

(N = 48)						Summary	
						Good Exposure	Limited Exposure
#	Item	3 Very Good % (f)	2 Good % (f)	1 Beginning % (f)	0 Not Familiar % (f)	% (f)	% (f)
11	Using computer to create word document	27.1 (f=13)	31.2 (15)	29.2 (14)	12.5 (6)	58.3 (28)	41.7 (20)
12	Formatting word document	6.3 (3)	27.1 (13)	45.8 (22)	20.8 (10)	33.4 (16)	66.6 (32)
13	Printing word document	6.3 (3)	8.3 (4)	35.4 (17)	50 (24)	14.6 (7)	85.4 (41)
14	Using PowerPoint	2.1 (1)	10.4 (5)	22.9 (11)	64.6 (31)	12.5 (6)	87.5 (42)
15	Using scanner	0	4.2 (2)	39.6 (19)	56.2 (27)	4.2 (2)	95.8 (46)
16	Importing clipart	2.1 (1)	14.6 (7)	18.8 (9)	64.6 (31)	16.7 (8)	83.4 (40)
17	Taking pictures with digit cam.	27.1 (13)	22.9 (11)	22.9 (11)	27.1 (13)	50 (24)	50 (24)
18	Downloading pictures from digital camera	2.1 (1)	16.7 (8)	33.3 (16)	47.9 (23)	18.8 (9)	81.2 (39)
19	Editing and organizing pictures	0	4.2 (2)	18.8 (9)	77.1 (37)	4.2 (2)	95.8 (46)
20	Inserting pictures into ppt and word docs	4.2 (2)	10.4 (5)	14.6 (7)	70.8 (34)	14.6 (7)	85.4 (41)

Summary of Results from the Initial Survey

The initial survey was focused on eliciting information about students' understanding of the affordances of different text forms (i.e., pictures and words), as well as their exposure to and familiarity with the use of different digital technologies to compose multimodal texts. Participants showed awareness of different meaning potentials and limitations that pictures and words offered to writers and readers. However, with regard to competence in digital multimodal composing, participants generally reported that they had limited exposure to using different technologies to compose multimodal texts. These findings informed the way the instruction was modified to help the students develop multimodal writing competence. For instance, as most learners had limited exposure to digital multimodal composing, I needed to spend a lot of time providing learner training. I also decided to let students work in groups at the learner training stage, so that the students could lend support to one another. Findings about how the multimodal composing process unfolded are reported under Question 1b.

Results for Research Question 1b

What multimodal composing activities did the adolescent L2 writers engage in, and what instructional support did they receive?

Focus of analysis

Understanding adolescent L2 writers' multimodal composing as literate activity

In light of my theoretical framework and research questions, I developed a multimodal pedagogy as an intervention to help the students develop competence in multimodal text making. The intervention was modified based on the findings from the initial survey. The intervention created several opportunities for the adolescent writers to engage in different multimodal composing activities. These included:

- (i) Print-based literacy activities – students did a lot of writing using the traditional pen and paper medium. This involved generating ideas for their writing and revising their drafts at different times.
- (ii) Digital-based literacy activities – students prepared PowerPoint slides (in groups), used digital cameras to take pictures, (a few of them) searched the internet for images/pictures, and (as individuals) created posters on their topics
- (iii) Oral presentations – students engaged in group PowerPoint presentations and individual poster presentations.

These activities were carried out in two phases. Phase one consisted of a group PowerPoint presentation project. Phase two was an individual poster creation and presentation project. In this section, I use cultural historical activity theory (CHAT)

(Engeström, 1987, 1999) to trace and understand the writers' multimodal composing as literate activities (Prior, 1998).

Prior (1998, 2006) uses CHAT to define writing as a socially and historically organized activity in which individuals or groups of people use cultural tools (e.g. languages and technologies) to produce and disseminate meanings in texts. Prior (1998, 2006) explains that seeing writing as mediated and distributed/ dispersed means recognizing that all writing is collaborative, involving divisions of labor and forms of coauthorship. In this sense, writing is not just the action of a single writer, but a situated literate activity that involves individuals in different forms of interactions aimed at making and representing meanings. In the activity system of the JHS 2 classroom context:

- i. Subjects refer to the adolescent English L2 writers who engaged in the multimodal activities.
- ii. Object is the actual multimodal composing activity. In this analysis, I focus on how this object undergoes transformation; that is, how the students progress from producing predominantly verbal (or linguistic) texts to producing multimodal texts.
- iii. Mediating artifacts or tools for engaging in multimodal text making: these include the use of language (a symbolic tool), different sources of information (e.g., reading material), different technologies (e.g., computers and digital cameras), and pictures and other images.

- iv. Rules describe the way the multimodal activities are organized, such as requirements of the assignments, rubric, deadlines, and expectation of collaboration (in group work).
- v. Community refers to the classroom context. This is both the physical classroom as a place for learning and producing multimodal texts (also of research and teaching) and the forms of interactions that take place among the subjects. It also includes interactions that go on between student participants and persons in the broader school context and the participants' communities.
- vi. Division of labor describes how individual subjects define themselves or are defined in the community, and the roles they play as a result of such definitions. For instance, students played the role of producing multimodal texts. My role in relation to producing multimodal text was to provide instruction and support to students. However, roles are complex and can shift many times in the activity system. For instance, the students in this study provided support to one another and even to me, the instructor, at some point. I will acknowledge such complexities in my analysis.
- vii. The outcome of the activity is not only the material text they produce (the multimodal text itself e.g. poster or PowerPoint) but also the "new intellectual tools and patterns of collaboration" (about composing multimodal texts) they develop as a result of the transformation process they go through (Engeström, 1999, p. 31). As Engeström explains, it is when subjects develop new intellectual tools that learning becomes expansive (i.e., transformative). Explaining 'outcome' in relation to expansion and transformation connotes a

sense of change, and, therefore, connects ‘outcome’ to ‘competence,’ which is described in this research in relation to progressing from composing predominantly linguistic texts to producing multimodal texts.

The relationships among the elements in the activity system of the JHS2 classroom are represented in Figure 6 below.

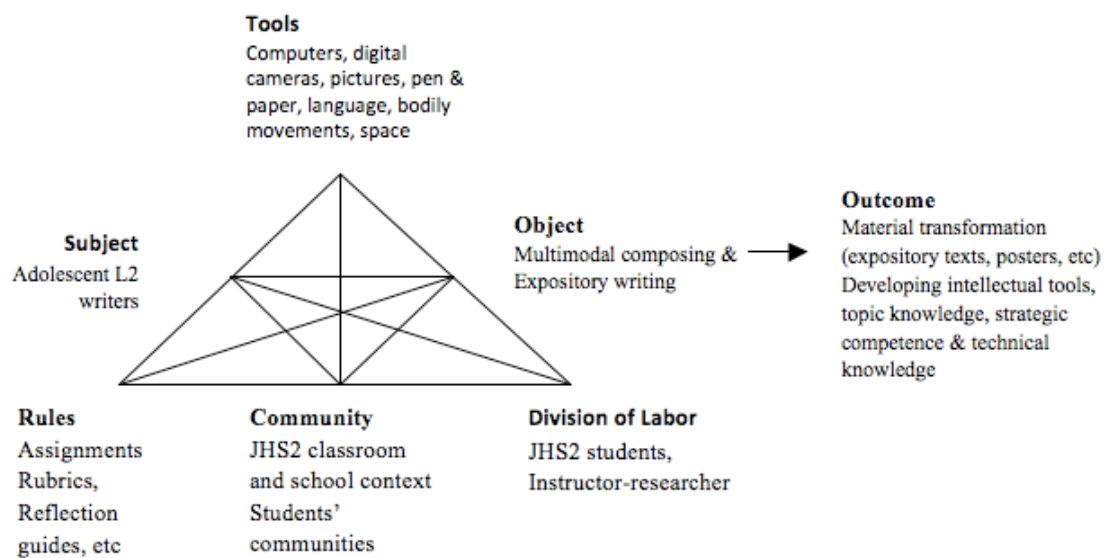


Figure 6. Activity system of the JHS 2 classroom

These elements are interwoven in complex ways and help to trace the multimodal composing in the activity system of the JHS2 classroom as a historical and dispersed literate activity (Prior, 1998; Shipka, 2011).

Adolescent L2 Writers' Multimodal Composing as Historical and Distributed Activity

The adolescent writers' composing activities were distributed across different times and sites of meaning making. I begin the analysis of the historical and dispersed nature of the writers' composing by tracing the temporal order of their composing, focusing specifically on the time of the academic year in which the composing process occurred as well as the different times, stages and duration of the composing process.

Composing in time

The adolescent writers engaged in their multimodal composing during the third term of the academic year, that is, from April to June of 2011. A major characteristic of the third term of the school year was the emphasis placed on promotional examinations. The administrators, teachers, students and parents were all concerned about which student would or would not be promoted to the third and final year of junior high school (i.e., JHS3 or 9th grade). The reason for this concern was futuristic: all the stakeholders were already thinking about the Basic Education Certificate Examinations (BECE) to be taken at the end of JHS3. The stakes on the BECE were very high: students' performance on the BECE determined the kind (in terms of quality) of senior high school they would attend, or (for many students) whether or not they would even have the chance to continue their education. As one of the teachers put it:

We cannot have a wholesale promotion. Some of the students are very good but others I'm not sure they will pass [the BECE]. So, we try to promote the good ones to JHS3. This is difficult because some of the parents agree but others don't agree. Even some of the students, all they want is to complete school (i.e., JHS3). Already in this batch, some of them were repeated in JHS1; others have repeated JHS2. If we have to repeat some of these same students again, it will be very difficult. But you have to repeat them, if they don't pass the third term exams (A Teacher, during a conversation; From Researcher's Journal, May, 2011).

Promotion to JHS3 at St. Anne, therefore, followed a careful and rigorous procedure. As a general practice, this procedure involved an analysis of students' performance on class tests and end of term examinations in JHS2, particularly the promotional exams, and a meeting with parents to discuss students' performance and chances of success at the BECE.

The emphasis on promotional examinations posed a big challenge for me as an instructor and researcher and for the adolescent writers. On one hand, I was introducing the students to a composing practice with which they were not very familiar. This required time and a constant remaking of the assignments. I needed to be patient with students and to organize the composing activities in such a way that students would understand the process and value of multimodal composing, rather than rush through the syllabus or take a "one-shot" approach to essay writing typical of the JHS learning context. On the other hand, although my instructional and research goals did not focus on examinations, I had to plan a balanced approach that

allowed me to build systematic evaluation opportunities into the composing process. In light of my research design and instructional objectives, and in response to expectations regarding students' success, I adopted both formative and summative assessment procedures. The overarching goal of these assessment procedures was to gather evidence of development toward writing and multimodal competence (i.e., how students progressed from writing predominantly word-based texts to composing multimodal texts). Using a formative and descriptive approach helped me to examine how students progressed through the text-making activities, rather than focus on the end products alone. (See chapter 3 for detailed discussion on assessment procedure).

Also significant were the times, duration and stages of multimodal text making. The multimodal composing activities took twelve weeks to complete, working with the class three hours a week for the first four weeks, and five hours a week for the last eight. The adolescent writers composed their texts during and after regular school hours, and on Saturday mornings when they came for the institutionally mandated weekend classes. Their composing process was divided into two major stages. At the first stage, which lasted for four weeks, students worked in groups to choose a topic, compose alphabetic texts on their topic and transform their texts into PowerPoint presentations. The main objective at this stage was to provide opportunities for learner training (Hubbard, 2004). At the second stage, writers engaged in individual poster creation and presentation activities, building on their experiences at the first stage. To understand the significance of the writers' composing at different times, I

needed also to look at the multiple sites at which they composed their texts. I take up this analysis and discussion in the section that follows.

Composing across multiple spaces

As the students engaged in multimodal text making, their composing activities were also distributed across different sites of meaning making, including the school community, JHS2 classroom, computer lab, students' homes and communities, and the world of the Internet (where some students looked for appropriate images or pictures, and information on their topics). St. Anne Catholic School has a student population of about six hundred and fifty. About sixty percent of the students are either on full or half scholarship, which covers such areas as school fees, feeding, transportation, school uniforms and textbooks. The school served as a larger academic environment for the adolescent writers and provided a macro structure for their writing. Through its curriculum and prescribed syllabus, the school set the time frame and rules regarding composing practices. St. Anne Catholic School has divided its English Language studies at the JHS level into two major parts: 1) Grammar and Comprehension, and 2) Essay Writing or Composition. At the time of this research, a different instructor taught each component separately. As I became the instructor for the composition component, my responsibility, according to the syllabus I was provided, was to introduce students to expository writing.

The classroom as site of composing

The JHS2 classroom served as the institutionally identified composing space for the adolescent writers. The classroom was spacious and well furnished with

adequate tables and chairs for all the students. Students were assigned specific tables and chairs at the beginning of the academic year. This seating arrangement imbued the classroom setting with a certain sense of orderliness. The mention of the seating arrangement is important because of its influence on the kind of community and the teaching and learning it fostered (Higgins et al 2005). Students sat in this linear arrangement when they were working on their texts as individuals or when they were receiving instructions and guidelines from me, the instructor. In most cases, this arrangement emphasized a vertical relationship (i.e., between the instructor and individual writers), personal accountability and the success of individual writers. However, in order to develop a sense of community and encourage group work among the writers, the sense of order in the physical space was often disrupted. During group work, students sat in circles to enable them talk to each other, instead of always listening and talking to the instructor. This created a horizontal relationship (i.e., one in which students talked among themselves and with the instructor) and emphasized collaboration, collective accountability and development of the community. The group and individual learning forms were not mutually exclusive. In the JHS2 classroom, we emphasized both group and individual composing, as both practices created interactions that supported the development of multimodal and writing competence.

The computer lab as site of composing

Another site of students' composing was the computer lab. The JHS2 classroom and the lab were on the same floor and just a few steps apart, which made it easier to move between these two composing sites. Twenty-five computers were installed in

the lab; however, only eleven were functional at the time of the research. With the class divided into ten groups, having eleven computers sufficed for group work. Individual poster creation, however, was more challenging. We needed more time to allow each of the forty-eight students to use the computer lab at least an hour a week. The solution was to divide the class into five batches of students that could go to the lab at specified times to work on their poster and writing. In addition to regular class time, we utilized the after class and Saturday morning time slots that the school had set aside for extra tuition. The after-class and Saturday time for learning was part of the school's policy to provide extra tuition for JHS2 (and JHS3) students to enable them cover portions of material or seek explanation on topics introduced in regular class-time. Each subject area was assigned two hours a week for extra classes. Adding the time for extra classes to the regular class time gave us five hours a week to work on students' poster project. This gave each student the opportunity to work for an hour a week on his or her poster project in the lab.

Using the computer lab as site for multimodal composing created further opportunities for collaboration among students and the instructor. The writers engaged in different interactions that enabled them to offer support to one another. Students who had relatively good exposure to using computers offered to help those who had very little experience with using technology. Students moved around in the lab offering assistance to their peers in different groups. They also encouraged one another to take part in the PowerPoint presentations. Some of the students also helped to set up the computer lab for the classes – their roles (which they took the initiative in assuming) included booting and shutting down computers, putting the learning

space in order, such as arranging chairs, opening and closing louvers. As an instructor, it was encouraging to observe the students' sense of ownership of the composing space and the composing activities, as well as their involvement and interest in creating a collaborative and supportive classroom community; it was their community, their composing activities and their learning.

The home as site of composing

The writers' homes and communities also served as important sites for multimodal composing. To begin with, the writers' topics were based on specific and real life situations in their communities. The communities also served as sites for many of the pictures the writers took and used for their composing. Some of the writers also provided pictures from their personal and family albums, from magazines and newspapers, and from the Internet. The pictures depicted different aspects of community life (such as housing, religious events, local festivals, landscaping, sporting activities, schooling, sanitation, kinship, responsible as well as deviant behavior, cultural artifacts, etc) and helped to communicate specific meanings the writers intended to get across to their audience.

In order to get a deeper understanding of the adolescent writers' use of space at home and in their communities, I asked them, through their guided reflection, to talk about where they usually sat to write at home, and why they preferred those places. The reflection guide was phrased as follows: "At home, where do you usually sit and write your essay assignments? Why do you prefer this place?" The writers indicated that at home, they usually wrote their essays at different places: in their

bedrooms, on verandas in front of their houses, on sofas in their halls, at the dining table, spaces behind the kitchen, and even under trees on their compounds. In their guided reflections, the adolescent writers explained that they selected those spaces because they wanted to feel comfortable when writing. They also wanted to avoid noise, disturbance, and boredom. Excerpt 4.6 provides examples of the responses the writers gave.

Excerpt 4.6: Sample reasons for selecting specific spaces for composing

S1. I usually write in my bedroom. There is writing desk and chair. My sisters don't come to disturb me and there is no television to disturb me in my room.

S2. I write in my room because I want a place where there is total silence.

S3. I like sitting in the hall. I feel comfortable in the sofa to write.

S4. At home I sit at the dining table to write. I feel comfortable. There is no writing table and chair anywhere else.

S4. I sit on the veranda in front of our house. I usually learn in the room, but for essays, I sit outside, so that when I look around I will get more ideas to write the essay. I will also feel lazy if I stay in the room.

S5. I usually sit under a big tree. There is cool air, which gives me fresh air and there is shade too. In the room I feel lonely. When I sit under the tree and see people I don't feel bored.

S6. I sit under a tree. My siblings disturb and make noise in the house so I prefer sitting under the tree.

S7. I sit behind our kitchen. The place is cool [quiet]. Many people don't pass here to disturb me.

The writers were also asked to comment on the differences they found between writing at home and writing at school. Their responses (see samples in excerpt 4.7)

indicated that, in general, the home provided a relaxed and “peaceful atmosphere” to enable them “concentrate more” on their writing. They also felt that they had more time at home to construct their ideas and “to make sense” of the meanings they wanted to communicate. At school, things were always in a rush and time was limited. Because of time constraints they always had to write fast, paid little attention to their writing and made a lot of mistakes as a result. The writers also reported that both school and home provided opportunities for interacting with others about their writing, albeit with some difference. Some of them indicated that at home they were lonely and had no one with whom to share ideas; the only opportunity these writers had to talk about their writing with others was in school. Others, however, indicated that they had more opportunities at home to discuss their writing than they did at school. Examples of students’ responses are provided in excerpt 4.7.

Excerpt 4.7: Comparing home and school as sites of composing

S1. At school I share ideas with friends. At home you are lonely so you can’t share ideas with you friends.

S2. I find it difficult to pay attention to what I’m writing at school but concentrate more at home. Also time is limited at school so I write fast and the words I use when I’m writing in school are not all that good.

S3. At school my peers would be roaming about so I can’t get a peaceful atmosphere but at home I can get a peaceful atmosphere to write.

S4. At school there is limited time. I can read a lot about the topic to write my essay in the house. At home you relax and write to make sense but in school things are in a rush.

S5. At school I don’t have time to write. You share ideas with friends at home. I have more time at home than in school.

S6. [At home] You have all the time to construct your ideas. You can talk to other friends to enable you write your essay. At school you have to hurry up. Also, at home the place is quiet but at school the place is always busy.

S7. At school they give you short time to write, which is not the case at home. At school because you are writing fast you make more mistakes. Also, generating ideas in school is difficult; in the house you are relaxed.

Paying attention to how the students moved around and composed their texts across multiple spaces and times is important for several reasons. First, from the perspective of CHAT (Engeström, 1987, 1999), such *traveling around* (to borrow a metaphor from Drew, 2001) highlights the historical and cultural dynamics of the students' composing activity and demonstrates that the object of activity (i.e., the students' multimodal composition) was not tied to just a single spot. By moving around at different times and between different spaces, the adolescent writers became "travelers" (Drew, 2001) who took their composing with them wherever they went, including their institutional and cultural settings. They traveled to different places (school, home, community) to learn different things and to use different tools, which all came together as specific texts. Their multimodal texts are, therefore, "traveling notes" (Pahl & Rowsell, 2006) about people, communities and themselves. Second, the movement across times and spaces deepens our understanding of their learning and multimodal composing as situated activity (Prior, 1998). As the students' responses suggest, each space created different conditions, opportunities and limitations for their multimodal composing, all of which the students had to navigate in order to succeed in composing multimodal texts. Their multimodal composing

experience, therefore, cannot be described as just “the composition of artifacts,” but rather as “engagement in processes” and in situated sociocultural practices (Prior & Hengst, 2010, pp. 5-6). Third, taking their composing into different sites allowed these sites to become spaces of inspiration (e.g. “when I look around I will get more ideas to write the essay”) and of construction of knowledge and meaning (e.g. “[At home] you have all the time to construct your ideas”). The different places from which they composed inspired their writing, mediated their thoughts and shaped the meanings they constructed about people and situations in their communities.

Understanding the historical and distributed nature of composing, therefore, breathes life into what might otherwise be seen as lifeless end products or frozen and decontextualized texts, removed from the writers, communities and technologies that made these texts possible in the first place. In this life cycle of text making, adolescent writers and their processes and tools are bound together as a life text. When we “see” the writers traveling around, interacting with people, resting, taking and examining pictures, we get the sense that the writing is done by real people about real situations, and that the writing is a part of the writers’ everyday experiences – their thoughts, actions, daily chores, interactions with people and tools, struggles, breakthroughs, failures: in short, their writing was mediated and embodied (Benesch, 2012). When the adolescent writers associated writing with wanting to feel *comfortable* and *relaxed*, and with the move to avoid becoming *bored* or *lazy*, they were acknowledging the material element of their composing process, not only in terms of the place they selected, but also in terms of how they responded physiologically and cognitively to the composing activity.

Results for Research Question 1c

What benefits (i.e., achievement of intermediate goals) and challenges (contradictions) arose as part of the multimodal composing process, and how were the challenges addressed?

Focus

How achievement of intermediate goals and contradictions contribute to the expansion (or transformation) of the object of activity (i.e., the composition of multimodal texts)

The data analyzed in response to research question 1c were from students' guided reflections and were collected after their group PowerPoint presentation activity. In order to present findings relating to this research question, I used structuring coding (Saldaña, 2009) to organize the data under three main categories: achievement of intermediate goals (Engeström, 1987, 1999), contradictions (i.e., challenges, problems or tensions) and solutions. The findings resulting from the structural coding procedure (Saldaña, 2009) are presented below as summaries of responses about composing multimodal texts in groups, using technology, and engaging in PowerPoint presentations. Next, using CHAT as a framework, I looked for how the contradictions and achievement of intermediate goals identified in students' responses connected with or related to the specific elements in the activity system of the JHS2 classroom, including the object of activity, use (and development) of artifacts, division of labor and rules governing the activity. Finally, I discussed why and how a combination of contradictions and achievement of intermediate goals was necessary for tracing transformations in the adolescent L2 writers' multimodal composing activity.

Summary of responses about composing multimodal texts in groups, using technology and engaging in PowerPoint presentations

In order to capture and understand the achievement of intermediate goals and contradictions of the writers' multimodal composing activity, I asked them to engage in guided reflections about their composing processes, particularly working in groups to create PowerPoint slides and engaging in group PowerPoint presentations. The guided reflection questions focused on eliciting information on the benefits (i.e., achievement of intermediate goals) derived from engaging in these composing activities, the challenges they faced and how they addressed the challenges. In the subsections that follow, I state the guided reflection questions and summarize the adolescent writers' responses to these questions. I also present sample responses from the data reflecting all three categories: achievement of goals, contradictions (challenges, tensions) and solution.

Summary of responses about composing multimodal texts in groups

- a. State at least one benefit you gained from working together as a group to compose your texts.
- b. State at least one problem you encountered (or faced) when working together as a group.
- c. How did you solve that problem?

The students indicated that working together as a group helped them to generate several ideas for their essays, feel comfortable, and learn to appreciate other people's point of view. In some of the groups, however, some of the members either had difficulty sharing their ideas or were unwilling to do so, probably because brainstorming for ideas in a group was not something they did often. Other members wanted only their ideas to be written, while others engaged in off-topic and

“unnecessary” conversations. Some group members also had difficulty organizing their ideas into meaningful essays. To address the challenges associated with participation (i.e., with sharing ideas or staying on topic), some of the groups “ignored” members who did not want or found it difficult to share their thoughts, or those who stayed off-topic; to be able to get their work done, these groups decided to focus on those who were willing and could share their ideas. Some groups also indicated that they “forced” members to participate. Other groups employed a more supportive and reconciliatory approach: they decided to “constantly” encourage all group members to share their ideas and agreed to listen to one another. Samples of students’ responses are presented in excerpt 4.8 below.

Excerpt 4.8: Sample responses about composing multimodal texts in groups

(a) Achievements

S1. It helped to generate more ideas for our essay

S2. It helped us to recognize other people’s ideas

S3. We were able to acquire much knowledge about the topic because different people shared the ideas

S4. We felt happy and comfortable

(b) Challenges

S5. Initially group members were not willing to share their ideas

S6. We had difficulty organizing our ideas in an orderly manner

S7. We had some misunderstanding among the members when brainstorming for ideas; some people wanted their ideas to be written, but they were not ready to accept other people’s ideas

S8. We faced problem when brainstorming; it was difficult at the initial stages to share ideas, because it was a new thing for us.

S9. Some of our members were not ready to participate in the brainstorming activity. Rather, they engaged in saying unnecessary things, which did not connect to our topic.

(c) Solution

S10. We ignored them. Those who could bring out their ideas did so and we made it.

S11. We forced them to participate to the best of their abilities

S12. We tried constantly to encourage each other to work together as a group

S13. We reported the matter to the instructor who talked to us and helped us to appreciate each other's ideas.

S14. We worked at it many times and with the support and encouragement from our instructor we were able to organize our ideas under four headings – problem, causes, effects and solutions.

S15. We agreed to listen to everybody, and to accept each other's ideas.

Summary of responses about using technology

- a. Will you recommend that your class be taken to the computer lab for lessons in English composition more often? Why?
- b. State at least one problem you faced using technology together as a group.
- c. How did you solve this problem?

The purpose for asking students to reflect on whether or not they would recommend going to the computer lab for English composition was to know and understand the connections the students themselves would make between the use of technology and their writing in English. All the group members indicated that they would recommend going to the computer lab more often for lessons in English composition. First, the

students' responses indicated that a constant use of the computer would help them improve their typing skills. Second, some of them also reasoned that using the computer more often would help them improve their writing skills, such as spelling and grammar, as well as make it easy for them to revise their work. One of the problems the students faced at this stage in their composing process was that most of them did not know how to type. Most of the groups indicated that there was much struggle over who would type their work (everybody wanted to type at the same time), probably because they wanted to improve their typing skills. To resolve these tensions, some of the groups decided to allow the few who knew how to type complete the work, while the rest agreed to learn as time went on. Those who made such decisions finished their work faster. Others, however, decided to share the work so that each person would have the opportunity to type a portion of it. While those who made such decisions finished their work much more slowly, their approach created an opportunity for all their members to improve their typing skills within the group. A third set of groups took the decision to actually offer support to their members who did not know how to type or use the computer in any significant way. Excerpt 4.9 below shows samples of the responses relating to students' use of technology in groups.

Excerpt 4.9: Sample responses about using technology in groups

(a) Reasons for recommendations

S1. Yes, because we will be able to use the computer to improve our spelling, grammar and typing skills.

S2. Yes because it has helped the group to know how to use the computer to create PowerPoint presentation

S3. We will improve on our use of technology, type our essays and save them on the computer. In this way, we can easily revise our work.

S4. Yes, because most of our mates do not have access to computers at home. When we have the English class in the computer lab, it will help many of us to gain access to computers and learn how to use technology for our learning.

S5. Yes, because that will help us improve our skills in using technology for our writing and other things we learn.

(b) Problem

S6. Typing was difficult for us and so we were slow in our work

S7. Some members did not know how to type.

S8. Some of us did not know how to use the computer that well

S9. Some of the members were greedy and selfish. They wanted to be the only ones to type (monopolize the typing)

S10. We were fighting among ourselves on who should type the work.

S11. Everybody wanted to type at the same time

(c) Solutions

S12. We relied on the knowledge of the few to finish the work. The others were eager to learn

S13. Those who knew how to use the computer helped those who didn't to develop some skills, such as typing, formatting and using the dictionary on the computer.

S14. We explained to each other that we formed a group and selected one person who could type faster.

S15. We shared the typing by allowing each person to type a sub-topic or sub heading.

S16. We helped those who did not know how to type to start learning to do so; we taught them how to place their hands on the keys

Summary of responses about PowerPoint presentations

- a. State at least one benefit you gained from creating a PowerPoint and presenting your ideas to your classmates.
- b. State at least one problem you faced when creating your PowerPoint and presenting your ideas to your classmates
- c. How did you solve that problem?

This section of students' guided reflection focused on their PowerPoint creation and presentation as specific multimodal activity. The students intimated that creating PowerPoints made it easier to present their ideas to others. It also helped them to stay focused, generate more ideas and gain much knowledge about their topic. In addition, the presentation itself created an opportunity for them to gain confidence and learn how to speak in public. Some groups, however, had difficulty designing their slides and asked their peers from other groups to help them. There were also problems or tensions associated with the presentation itself. In most of the groups it was difficult to find to do the presentation because the members were initially nervous and shy. In a couple groups, however, each of the members wanted to present the greater of the work. To overcome these challenges, the students encouraged one another to muster courage to speak in public. They also shared the work to allow all the members to have the opportunity to present. Finally, one group reported the difficulty they had with spelling and grammar. The students in this group solved their problem through the use of dictionaries and ideas from the group members.

Excerpt 4.10: Sample responses about PowerPoint presentation

(a) Achievements

- S1. It gave us the ability to gain more knowledge about our topic.
- S2. The presentation helped us to gain confidence talking or expressing ourselves in public
- S3. It helped us to focus on what we were doing, that is our topic.
- S4. We were able to generate more ideas through the presentation
- S5. PowerPoint made it easier to present our ideas

(b) Problems

- S6. The use of designs was quite difficult for us.
- S7. Some of our members were too shy to talk in public
- S8. We had difficulty getting people to present the work to the class
- S9. We made a lot of mistakes with our spelling and tenses
- S10. Everybody wanted to present the greater part of the work
- S11. We had difficulty choosing someone to start the presentation

(c) Solutions

- S12. We asked some people from another group to help us
- S13. We encouraged them to speak by sharing the work so that each person could have the opportunity to learn how to speak in public
- S14. We asked each member to select particular slides they felt comfortable talking about. In this way, each person had the opportunity to present.
- S15. By correcting our mistakes (e.g. grammar and spelling) through the use of dictionaries and ideas from our group members.

Contradictions, achievement (of intermediate goals) and transformation of students' multimodal composing

Next, I analyzed the data looking for how the contradictions and achievement of intermediate identified in students' responses reflected, or related to, the specific elements in the activity system of the JHS2 classroom. I then compared the kinds of contradictions I found in the students' responses with the levels of contradictions identified in human activity systems. In his *Learning by Expanding*, Engeström (1987) identified four levels of contradictions within the human activity system. *Primary contradictions* are found *within* each constituent element of the central activity (e.g., within division of labor or rules governing the activity). *Secondary contradictions* are *between* the elements of the activity system (e.g., between subject and artifacts, or between subject and object of activity). *Tertiary contradictions* are between the object/motive of the dominant form of the central activity and the object/motive of a culturally more advanced form of the central activity. An example is a tension between what writing teachers focus on in response to specific needs of students (i.e., what occupies teachers' and students' attention in time and space - dominant activity) and what the school prescribes and expects writing instructors to teach (i.e., institutional focus - culturally more advanced activity). Finally, *quaternary contradictions* are found between the central activity and its neighbor activities (e.g., between composing activity in an English course and composing activity in other subject areas).

Analyzing students' responses revealed both primary contradictions (within each element) and secondary contradictions (between the elements). The specific contradictions identified in students' responses related to five elements in the activity

system of the JHS2 classroom: the subjects, object of activity, use (and development) of artifacts, division of labor and rules governing the activity. Students' responses did not reveal contradictions at the tertiary level. However, I found tertiary contradictions between institutional expectations and the specific (multimodal and semiotic) approach I took to teach writing for the specified school term, which I have already discussed under research question 1b above. Contradictions at the quaternary level were beyond the scope of this research. The analysis that follows will therefore focus mainly on primary and secondary contradictions.

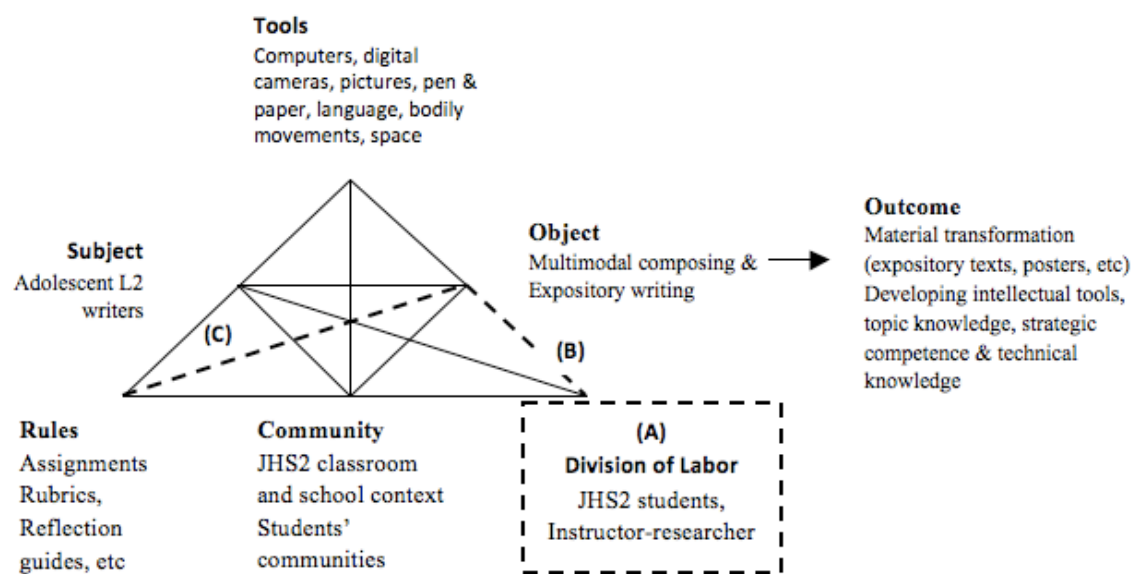
Primary and secondary contradictions in the activity system of the JHS2 classroom

As is evident from the summaries above (see excerpts 4.8b, 4.9b and 4.10b), several contradictions arose as the students engaged in brainstorming activities, used technology, created PowerPoints and presented their ideas to their classmates. The fundamental primary contradictions occurred within division of labor (i.e., within the element that determines how tasks are shared and what roles individuals play in human activity). At the brainstorming stage, there were tensions about sharing ideas and staying on topic. For instance, the students experienced misunderstanding over whose ideas should be incorporated. Other group members were either unwilling or reluctant ("not willing" or "not ready") to take part in generating ideas for the group essay and PowerPoint project. There were also struggles over who should type or present students' work. In some instances, some students exhibited the tendency to monopolize the typing or the tendency to take the center stage in presenting work to the class. In other instances, students did not want to participate either in creating the PowerPoint or presenting ideas to the class.

These primary contradictions simultaneously developed into secondary contradictions (Engeström, 1990, 2005; Miettinen, 2009) between *division of labor* and the *object of activity*; that is, between the roles the students played in their groups and the multimodal composing activity they engaged in. At this stage of their composing process, the success of the group PowerPoint project depended on the collective efforts of the group members and the specific roles each member played in their collective efforts. In this sense, then, the resolution of the contradictions about participation and involvement in the group work (division of labor) was necessary for the unfolding and completion of the group project (object of activity).

The recognition of the relationship between the resolution of contradictions and the completion of the group project reveals yet another secondary contradiction, namely, contradiction between the *object of activity* and the *rules* governing the activity. The guidelines for the multimodal composing activity required students to work together to complete the project. Specifically, each student was asked to contribute to the generation of ideas for the group essay, as well as take part in creating and presenting the PowerPoint. These guidelines were presented to students in writing. The evidence of contradictions regarding students' participation indicates that, while these rules (or guidelines) were partially followed, they were also partially disrupted: not every student followed the rules as presented to them by the instructor. The students then needed to find a solution to these disruptions, if they were to complete their project. They, therefore, formulated new rules to help them move forward with their project (see excerpts 4.8c, 4.9c and 4.10c above).

The primary and secondary contradictions in the students' composing activities are visually represented in Figure 7. In this representation, contradictions or tensions are marked by dotted lines. The primary contradiction occurs with division of labor and is marked (A); the secondary contradictions are marked (B) – between the object of activity and division of labor, and (C) – between object of activity and the rules guiding this activity.



The dotted lines signify tensions or contradictions in the activity system

(A): Primary contradictions within Division of Labor

(B): Secondary contradictions between Object of Activity and Division of Labor

(C): Secondary contradictions between Object of Activity and Rules

Figure 7. Primary and secondary contradictions in the writers' composing activity

WHY both contradictions and achievement (of intermediate goals) are needed to help trace the ongoing transformations in students' multimodal composing

Contradictions are a constitutive part of Engeström's (1987, 1999, 2009) theory of expansive learning. Contradictions refer to discrepancies in individual views and understandings (Virkkunen, 2009) and to tensions and challenges in the activity system (Engeström, 1999). In activity theory, contradictions are regarded as sources of change and development (Engeström, 1987; Miettinen, 2009). As Engeström (2008a, p. 258) observes, "If activity theory is stripped of its historical analysis of contradictions ... the theory becomes another management toolkit ... without potential for radical transformations."

While acknowledging the central role that "contradictory forces" (Virkkunen, 2009, p.150) play in the creation and transformation of the object of activity, I would like to add that transformations also come through the acknowledgement of what works, of available resources and what they afford. Knowing what we have and are able to do or have actually done (i.e., our achievements in the activity system) provides opportunities for reinforcement and a basis for comparison as we continue to work toward the transformation of the object. In my view, then, it is the combination of achievements and contradictions that moves the object of activity forward. Identifying the achievement of intermediate goals in the activity system is important for a couple of reasons. In the first place, transformations are historical in nature; we do not wait till the end of an activity to realize a transformation. Instead, we see traces of change, of expansion, of transformation along the way. There are moments of transformation throughout the process. These traces of development or of transformation are what I describe as *achievement of intermediate goals*.

The second reason for employing the notion of *achievement* is connected to the way the notions of *activity*, *action*, *object* and *goal* are explained and employed in activity theory. As starting point of the discussion of these explanations, I refer to Engeström's definition of the object of activity. According to Engeström (1999c), the object of activity

[is] a project under construction, moving from potential raw material to a meaningful shape and to a result or outcome. In this sense, the object determines the horizons of possible goals and actions. But it is truly a horizon: as soon as an intermediate goal is reached, the object escapes and must be reconstructed by means of intermediate goals and actions (1999c, p. 65)

Engeström's definition shows a distinction and interconnectedness between the use of *activity* and *action*, and between *object* and *goal* in activity theory (Engeström, 1987, 1999b; Leont'ev, 1978). An *activity* is a social practice stimulated by (and has the capacity to fulfill) a human need (Engeström, 1999b). Activities (or activity systems) evolve through long histories of interactions "in which clear beginnings and endings are difficult to determine" (Engeström, 1999b, p. 381). *Actions*, on the other hand, are specific processes (Leont'ev, 1978) and microprocesses (Ludvigsen & Digernes, 2009) that make up an activity. Unlike activities, which have a broad perspective ("horizon of possibilities"), actions are specific in focus with "clear points of beginning and termination and relatively short half-lives" (Engeström, 1999b, p. 381). Engeström's definition also indicates that *objects* and *goals* are not the same. An object is the "motivating force that gives shape and direction to activity" (Engeström,

1999b, p. 381), including the determination of specific goals and actions that can be and are actually taken. *Goals*, on the hand, are attached to actions (Engeström, 1999b, p. 381), that is, to specific processes or microprocesses making up the activity (Leont'ev, 1978). As Engeström's definition suggests, it is possible to achieve specific intermediate goals (related to specific actions or microprocesses) even as the object of the activity continues to expand. Figure 8 below highlights achievement as a significant component of the activity system. As I understand it, achieving specific intermediate goals contributes to our understanding of the overall result/s (or outcome/s) of the activity and should be conceptualized as part of the analytical tools of the activity system. My use of the notion of *achievement*, therefore, is an analytical strategy to help me capture the *ongoing* achievements of goals as part of the transformation of the object of activity (or the ongoing transformations of the students' multimodal composing activity).

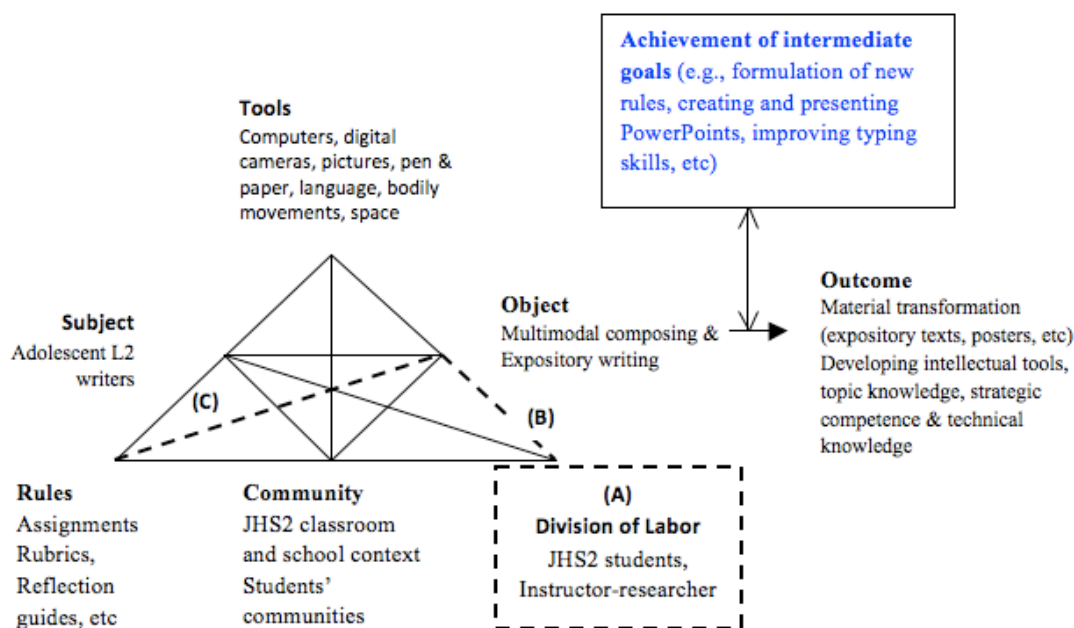


Figure 8. Contradictions and achievements as driving force of transformation

In what follows, I describe and discuss how *both* contradictions *and* achievements help to trace the ongoing transformations of the students' multimodal composing.

HOW both contradictions and achievement (of intermediate goals) helped to trace the ongoing transformations in students' multimodal composing

In my analysis of how *both* contradictions *and* achievements helped to trace the ongoing transformations in students' multimodal composing, I focus on three major findings presented so far. These findings relate to (i) students' awareness of the affordances of different modalities (i.e., pictures and words) as well as students' familiarity with using digital technologies to compose different multimodal texts (as presented in question 1a); (ii) how the multimodal composing activity and related microprocesses unfolded (presented in question 1b); and (iii) how students formulated

new rules and created new patterns of collaboration (see summaries and sample responses in question 1c above).

(a) Tracing ongoing transformation I

First, findings from the initial survey showed that the students' awareness of and ability to understand the meaning potentials and limitations of different modalities (i.e., pictures and words) did not commensurate their actual ability to use digital technologies to compose different multimodal texts (i.e., the majority of the students reported having limited exposure to digital multimodal composing). A closer look at these findings reveals both achievements (i.e., ability to conceptualize multimodal affordances) and contradictions/ challenges (i.e., inability to use digital tools to actually compose multimodal texts). As I planned the intervention (the multimodal instruction) to help students develop multimodal competence, I relied on both their achievements and challenges. What this means is that the object of activity itself (i.e., students' multimodal composing) was formulated on the basis of achievements and contradictions, and followed the same path as it expanded historically. Figure 9 below is a graphic representation of how the object of activity (students' multimodal composing) expanded through contradictions and achievements associated with the phases and processes in the composing process.

(b) Tracing ongoing transformation II

Second, a description of how the object of activity expanded within the activity system of the JHS2 classroom (see question 1b) shows that the students' multimodal composing unfolded in phases (Group PowerPoint presentation project and individual

Poster presentation project) and involved several interconnected micro/processes (Leont'ev, 1978; Ludvigsen & Digernes, 2009). The processes involved in the group PowerPoint project included generating ideas through brainstorming activity, composing expository texts, creating PowerPoint slides and presenting ideas using PowerPoints. In phase two, (the individuals' creation and presentation of posters) students engaged in photo elicitation activity, composition of expository texts, multiple revisions of expository texts, taking of pictures, creation of posters, and presentation of posters to a larger audience.

The analysis of these phases and processes reveals that each step contains a combination of achievement, contradictions and opportunities for resolution, and that it is this combination that moves the object of activity forward. Students' responses about working in groups, using technology and engaging in PowerPoint presentations (see excerpts 8, 9 and 10 above) provide examples of how each process constitutes a combination of achievements, contradictions and opportunities for resolution. The analysis also shows that each step or process had specific goals to achieve. Engeström (1999c, p. 65) described these goals as "intermediate goals." Once the intermediate goals of a particular process are achieved, the benefits are carried into the next stage or process of expansion. For instance, the group brainstorming activity resulted in the generation of several ideas, which were used to initiate the next process (i.e., the composing of group essays). Once the essays were completed, the stage was set for transforming the ideas into PowerPoint presentations. Each stage or process builds on the benefits of the previous one in order to keep the object of activity moving toward the projected outcome (see figure 9 below).

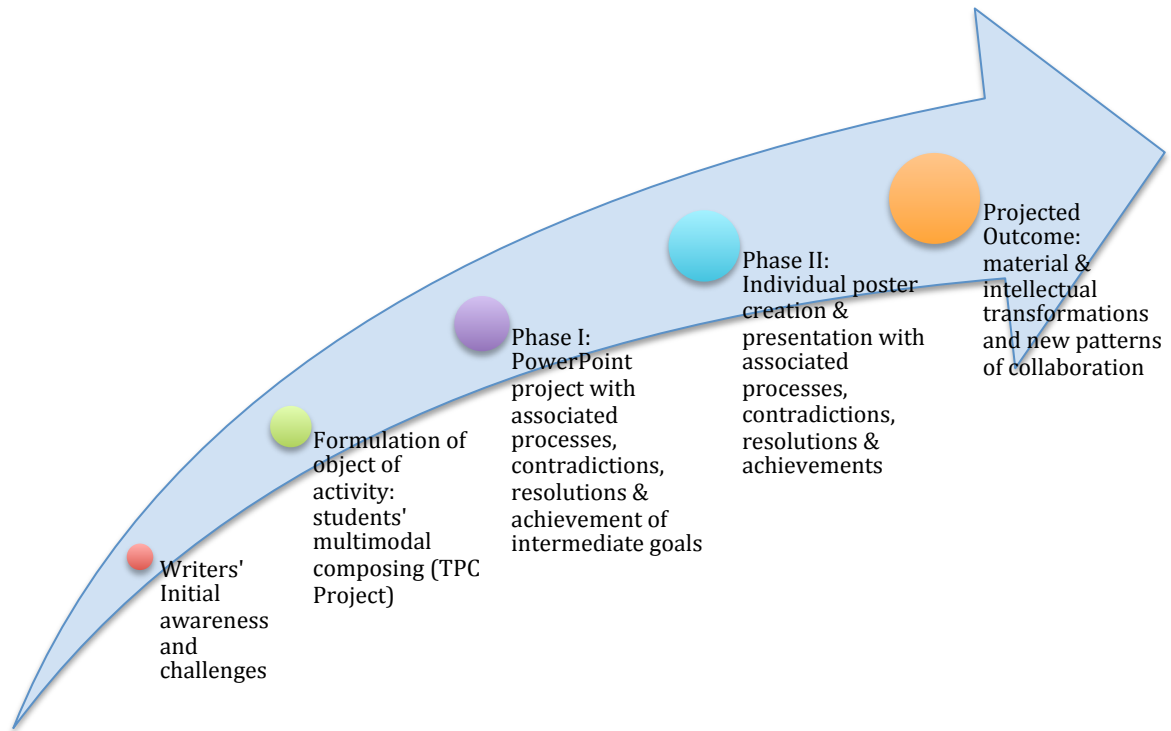


Figure 9. Expansion of students' multimodal composing

Figure 9 shows that the object of activity (represented as upward arrow with different sizes of spherical objects) expands at every stage of the multimodal composing process. This means that students' knowledge about digital-based multimodal composing expands (or develops) with time and across different stages of the composing process. At the beginning of the multimodal composing experience, the writers indicated that they were aware of the meaning potentials (affordances) and limitations of different modes (pictures and words) in making meaning. However, their knowledge about actually using digital tools to compose multimodal texts was limited at this stage. This contradiction was addressed through the formulation of the object of activity (i.e., multimodal composing activities framed as the Transforming

People and Communities Project). The two stages of the TPC Project both contain contradictions, opportunities for resolution and achievement of goals. This composing process results in material and intellectual transformations and new patterns of collaboration (Engeström, 1999b).

(c) Tracing ongoing transformation III

Third, analysis of the responses about working in groups, using technology and engaging in PowerPoint presentations (again, see excerpts 8, 9 and 10 above) shows that students' ability to formulate new rules and create new patterns of collaboration further created opportunities for the ongoing transformation of their multimodal composing. Most of the rules the students formulated were different from the instructor's guidelines. As I observed the students at work, I realized that the initial guidelines I provided at every stage could not possibly cover all aspects of the composing process. There were new challenges that emerged as part of the composing experience, and the writers needed to be innovative and creative in formulating solutions and new rules to deal with the tensions. Once the writers realized that the guidelines no longer served their purposes, they created new rules. In some instances, the writers invited me (as the instructor) to intervene in helping them address specific challenges. In most cases, however, students took charge of their own situations and found solutions that were workable for them. By so doing, not only did the writers achieve their goal of completing specific actions, but they also "actively engaged in constructing the terms and conditions of their own learning" (Lantolf & Pavlenko, 2001, p. 146).

What this means is that, at this stage of the students' multimodal composing experience (i.e., at the phase of the group PowerPoint project), we already see traces of transformation, even though the object of activity (Engeström, 1987) is still expanding and the projected outcome is not yet achieved.

Conclusion

The analysis and findings presented in chapter have focused on tracing the process of adolescent English L2 writers' multimodal composing. In particular, findings have been presented in relation to (a) students' awareness of the affordances of different modalities (i.e., pictures and words) as well as students' familiarity with using digital technologies to compose different multimodal texts, (b) the specific multimodal composing activities the students engaged in, and (c) the achievement (of intermediate goals) and challenges (contradictions) that arose as part of the composing process.

First, findings from the initial survey showed that the students' awareness of and ability to understand the meaning potentials and limitations of different modalities (i.e., pictures and words) did not commensurate their actual ability to use digital technologies to compose different multimodal texts (i.e., the majority of the students reported having limited exposure to digital multimodal composing).

Second, analysis of the writers' multimodal composing activities indicated that their composing process was mediated (by different cultural and technological tools) and dispersed (across multiple sites of composing, including the classroom, computer lab and the home/communities). It is particularly important to note how the

writers selected different places for their writing at home: including their bedrooms, on verandas in front of their houses, on sofas in their halls, at the dining table, spaces behind the kitchen, and even under trees on their compounds. As indicated in their guided reflections, the adolescent writers selected those spaces because they wanted to feel comfortable, avoid noise, disturbance, and boredom when writing. Also, in general, the home provided a relaxed and “peaceful atmosphere” to enable them “concentrate more” on their writing. They also felt that they had more time at home to construct their ideas and “to make sense” of the meanings they wanted to communicate. At school, things were always in a rush and time was limited. Because of time constraints they always had to write fast, paid little attention to their writing and made a lot of mistakes as a result.

Third, the analysis of the different phases and processes of the adolescent writers’ multimodal composing reveals that each step of the composing process contained a combination of contradictions, opportunities for resolution and achievement of intermediate goals, and that it was this combination that helped the writers to expand their knowledge about multimodal text-making.

Evidence of this expansion (or transformation) of knowledge about multimodal composing will be presented in chapter 5, which presents findings in relation to how the adolescent L2 writers’ multimodal composing activities influenced their development of multimodal and writing competence.

CHAPTER 5: PRESENTATION OF FINDINGS II

Examining Transformations in Adolescent English L2 Writers' Multimodal Composing

Addressing Question 2

How do the multimodal activities adolescent English L2 writers engage in influence the development of their L2 writing and multimodal competence?

Introduction

In this chapter, I adopt qualitative and quantitative methodologies to analyze data relating to research question two. The focus of research question two was to investigate how the adolescent English L2 writers' multimodal activities influenced the development of their multimodal and writing competence. The qualitative data analyzed in response to question two were collected, mainly, from the three focal students, including multiple drafts of their word-based (expository) texts, multimodal texts (i.e., posters and poster presentations), guided reflections and interview transcripts. The qualitative analysis involves an in depth examination of the data from the three adolescent L2 writers, using a developmental case study approach (Brown & Rodgers, 2002; Cooper, 2006; Yin, 2009). Specific theoretical lenses used in this analysis include multimodal social semiotics theory (Halliday, 1978; Kress, 2009; Royce, 2002; Stein, 2008) and a multimodal interactive analytic perspective (Baldry & Thibault, 2005; Norris, 2011). Changes occurring in the writers' word-based expository texts were also analyzed qualitatively with the support of CriterionSM (an online automated evaluation tool). Findings from the qualitative analysis were supported by a quantitative analysis of the exit survey administered to the whole class

($N=46$) and the scores on the initial and final drafts of the writers' expository texts, also collected from the whole class ($N=48$).

In what follows, I describe the framework I used to analyze the data in response to question two. Next, I give a brief statement of the findings and then offer a detailed description and examination of how these findings emerged from (or are evidenced in) the multimodal composing activities of three of the focal students. Finally, I present findings from the quantitative data to support the qualitative analysis.

Framework for Examining Transformations in Adolescent L2 Writers' Multimodal Composing

What did I look for in the data?

The main thrust of the analysis in relation to question two was to examine the outcome (Engeström, 1987, 1999) of the students' multimodal activities. Building on the discussions in chapter four (particularly about CHAT and the transformation of the object of activity) I describe the outcome of the writers' multimodal composing activity as both the material texts the writers produced (i.e., their written expository texts, posters and poster presentations) and the "new intellectual tools" (Engeström, 1999, p. 31), strategic competence ((Alexander, 2003) and interest (Alexander, 2005; Kress, 2010) they developed about composing multimodal texts. As Engeström explains, it is when subjects develop new intellectual tools that learning becomes expansive (i.e., transformative). By intellectual tools, in this research, I mean the knowledge and understandings about multimodal composing that adolescent L2 writers gain as a result of engaging in multimodal text making. Evidence of this

knowledge and understandings, as subsequent analysis will reveal, were found in the changes that occurred in the writers' multimodal text making; that is, in the progress they made over the course of engaging in the multimodal composing activities.

Developing multimodal competence also involves the ability to make decisions about selecting appropriate modes to make meanings and communicate messages to an audience as well as the ability to reflect on choices writers make regarding the design of multimodal texts (Alexander, 2003; Bearne, 2009; Bearne & Wolstencroft, 2007).

Findings relating to the development of writing and multimodal competence, therefore, will be presented as the forms of knowledge students constructed and the interest they developed, that is, the forms of transformations that occurred as a result of their multimodal composing activities.

Multimodal social semiotic analysis

Once I determined what I was looking for in the data (i.e., forms of transformations that occurred as a result of engaging in multimodal activities), I adopted a social semiotic approach to multimodal representation (Halliday, 1978; Kress, 2009; Stein, 2008) to analyze the meanings the writers constructed and communicated through multiple text forms (i.e., expository written texts, posters and poster presentations). As Stein (2008) explains, a “social semiotic analysis is interested in comparing and contrasting different modes, analyzing how they work together in multimodal ensembles” (Stein, 2008, p. 20). Multimodal ensemble (or *intersemiotic relations*) refers to the meaning relations between the different semiotic modes such as writing and images that constitute a multimodal text (Jewitt, 2009). As the resources of different modes are combined, meanings are corresponding,

complementary and dissonant as they harmonize in an integrated whole (Kress, 2009). Using a social semiotic approach, Stein analyzed the forms of representation through which students make their meanings in diverse classrooms, focusing on the social and cultural issues the students address in their multimodal texts as well as the modes through which these meanings are communicated. She also compared and contrasted the meanings the students constructed through the different texts they composed, observing that looking at the writers' meanings across the different text forms give readers a better and fuller understanding of the writers' message. Such an approach, according to Stein (2008) also gives writers and readers an understanding of what the writers' texts can or cannot achieve.

Drawing on Stein's (2008) work, I used multimodal social semiotic approach to analyze how the adolescent L2 writers in this research transformed word-based texts into multimodal texts and how this transformation influenced the way they developed and communicated their ideas. However, in order to analyze the different forms of transformations I was looking for in the data, I expanded Stein's (2008) analytical approach by drawing on the notion of intersemiotic complementarity (Royce, 2002, 2007) and ideas from multimodal interaction analysis (Baldry & Thibault, 2005; Norris, 2011). Finally, I used CriterionSM (an online automated evaluation tool) to qualitatively analyze the changes that occurred in the writers' word-based expository texts. I discuss these analytical approaches in the sections that follow.

Intersemiotic complementarity and the analysis of students' posters

One way of analyzing intersemiotic relations in students' texts is to focus on the way the modes complement each other to communicate meaning. This approach is referred to as *intersemiotic complementarity* (Royce, 2002, 2007a, 2007b). As Royce explains, intersemiotic complementary analysis can follow two major steps.

The first step is to examine the ideational features (i.e., content elements) of the texts by asking series of questions based on specific categories:

1. Identification: Who or what are the represented participants, or who or what is in the visual frame (animate or inanimate)?
2. Activity: What processes are there, or what action is taking place between the actors and the recipients or objects of that action?
3. Circumstances: What are the elements that are locative (i.e., concerned with the setting), are of accompaniment (i.e., participants not involved with the action), or are of means (i.e., participants used by the actors)?
4. Attributes: What are the participants' qualities and characteristics?

Royce (2002, 2007a) explains that the answers to these questions can produce descriptive glosses, referred to as the image's visual message elements (VMEs).

The second step is to look at the writer's lexical choices to see how the visual ideational choices (i.e., choices expressing meaning through visual content) relate semantically to the written ideational choices (i.e., choices expressing meaning through language). According to Royce, the intersemiotic relations between the visual elements and language in the texts can occur in different ways, including:

1. *Intersemiotic repetition* involves the repetition of a lexical item that encodes the same experiential meaning represented in the visual.
2. *Intersemiotic synonymy* shows similarity relations between visual and lexical elements.
3. *Intersemiotic antonymy* shows opposition relations between visual and lexical elements.
4. *Intersemiotic MOOD* focuses mainly on interpersonal features of multimodal texts, showing the ways that modes are used to address viewers or readers. As Royce (2007a) explains, “The ways in the producer and viewer/ reader of a texts are placed socially in relation to each other is important because this can affect the topic, the ways that it is received and the ways that it is interpreted” (p. 70).

In my analysis of the adolescent L2 writers’ posters, using Royce’s notion of intersemiotic complementarity, I focused on understanding how the writers combined words and images in their texts to communicate specific meanings. I then compared and contrasted these meanings with the meanings in their word-based expository texts and poster presentations.

Multimodal interaction analysis of students’ poster presentations

Next, I draw on ideas from multimodal interaction analysis (Baldry & Thibault, 2005; Norris, 2011) to examine how the multimodal interactions during the adolescent L2 writers’ poster presentation created opportunities for development of ideas and co-construction of meaning. As Norris (2011) explains, multimodal interaction analysis

affords the analysis of a multiplicity of interactions that social actors engage in, and in which these actors orchestrate multiple modes of communication in making and representing meanings. A naturally occurring interaction “potentially encompasses each and every action that an individual produces with tools, the environment, and other individuals” (Norris, 2011, p. 1). The interactions in the writers’ poster presentations were visually recorded (videotaped) and analyzed as multimodal texts. The multimodal interaction analysis of these texts focused on how the social actors interacted with their texts (posters and notes) and audience, and how they employed verbal elements (e.g., spoken language, sound, intonation) and non-verbal elements (e.g., movement, touch, gaze, color, gesture, layout, facial expressions) as semiotic resources to produce meaning (Baldry & Thibault, 2005).

A very important aspect of the multimodal interaction analysis was the multimodal transcription of the poster presentations, drawing on Baldry and Thibault’s (2005) analytical approach to transcription of video texts. In this approach, Baldry and Thibault present a transcription based on six vertical columns with corresponding entries: (1) Time; (2) Visual Frame; (3) Visual Image; (4) Kinesic Action; (5) Soundtrack and (6) Metafunctional Interpretation.

Column 1 specifies time in seconds (and minutes; depending on the length) of the video recording. In my transcription, this was determined by using the time indicator in the Macintosh iMovie ’11 instrument (version 9.0.8). The iMovie ’11 gives video makers and viewers the opportunity to set the time in seconds according to how they want to see the replay of their video project. Each specified time corresponds with a specific visual frame (or multiple frames) of the video. These

frames can then be captured as still images for paper-based transcription purposes. In my transcription, I set the time to 5 seconds per visual frame. However, there are instances where I have used specific visual frames to correspond to a time of less or more than 5 seconds, depending on how long a participant speaks or how long an interaction takes place. Column 1 also specifies the horizontal row with which the specified time and interactions correlate.

Column 2 specifies the visual frame that correlates with the time specification in the first column. It is the image that depicts the specific interaction occurring in time.

Column 3 or *Visual Image*, describes the participants in the visual frame. The participants may include persons or objects (e.g., poster, pen, paper). They may be involved in the specific actions taking place or they may be in the background (adding to the contextual meaning of the interactions).

Column 4 or *Kinesic Action* describes the actual interactions in which the participants are engaged, including movement, gaze, pointing, and facial display.

Column 5, headed as *Soundtrack*, specified all aspects of the soundtrack of the video recording, including spoken word, silence (or pauses), music, background noise, and so on.

Column 6 or *Metafunctional Interpretation* attempts to specify the meanings captured in the interactions of all the other columns (from 1 to 5). I omitted this column in my transcription, since the interpretations of the interactions are captured in body of the analysis.

Other decisions I made during the multimodal transcription of writers' poster presentation involved the use of common transcription choices, based on suggestions from Derry's (2007) work on video research in education (see also Baldry & Thibault, 2005). The transcription notations and choices used in my analysis are presented in Appendix F.

Using the multimodal transcription as the starting point of the multimodal interaction analysis allowed for a detailed, systematic and consistent analysis of the writers' poster presentations as multimodal texts. The multimodal transcription revealed "both the codeployment of semiotic resources and their dynamic unfolding in time along textually constrained and enabled pathways or trajectories. Analysis synthesized the results of the transcription in order to ground statements about textual meaning in a principled and replicable way" (Baldry & Thibault, 2005, p. xvi).

Using CriterionSM to analyze students' word-based expository texts

Finally, I used CriterionSM to qualitatively analyze the changes that occurred in the writers' word-based expository texts. The multimodal pedagogy designed for this study created opportunities for students to improve their word-based writing. The decision to focus on the development of students' word-based writing competence was important for practical and conceptual reasons. The practical reason is that, word-based texts continue to play important roles in students' lives and learning and are still the major means of assessment of learning in the school context. Conceptually, a multimodal approach to teaching and learning L2 writing should necessarily include the development of word-based composing skills, if such an approach is to be considered expansive or transformative. As Engeström, Pounti and Seppanen (2003)

explain, learning is said to be expansive when its object of activity is retained and transcended. The multimodal composing approach used in this research can be described as expansive because it retains, builds on, improves and transcends students' word-based writing competence.

Discussions from previous sections (and also from chapter four) show that the writers' expository writing was a part of the entire multimodal composing activity, the overarching goal of which was to support L2 writers to understand how different semiotic resources combine to construct, represent and communicate meaning. Each student's word-based texts, poster and poster presentation focused on the same topic and, therefore, intertwined as interdependent text forms, with each text form feeding off of the others for its development. For example, the first draft that the students wrote served as the starting point and foundation for creating their posters. Focusing on the same topic, students generated multiple ideas for their posters and expressed these ideas with precision and clarity. The writers then revised their first draft (and subsequent drafts) of their word-based expository text, drawing on ideas from their poster to help them develop and organize the ideas in their expository text. In particular, students used the ideas expressed in their poster as topic sentences and main ideas in their expository texts.

Multiple drafts of students' expository texts were collected and analyzed using CriterionSM. Criterion is an online automated writing evaluation (AWE) tool designed by Educational Testing Service (ETS) primarily to provide students with qualitative feedback and numeric scores to inform the level of their writing proficiency. Criterion gives a wide range of feedback to help students revise their writing on their own. The

traits covered in the feedback include grammar, usage, mechanics, style, and organization and development. The platform on Criterion makes it possible for teachers to design their own assignments to match the level and needs of their students. Criterion also provides reports to help teachers and researchers analyze the pattern of students' essays. As an analytical tool for this research, Criterion provides opportunities for a systematic and consistent qualitative analysis of students' expository texts. Additionally, Criterion provides instructors and researchers with the option of focusing their analysis on specific types of essays (such as expository writing) and of selecting the appropriate grade level (including K-12) for their analysis. These options make this software appropriate for the analysis of the data (expository texts) collected from adolescent L2 writers (8th graders). Criterion scores the overall quality of a paper on a 6-point scale, as described in Table 10.

Table 10

Scoring Scale on Criterion

<p>Score of 6: Excellent Develops ideas well and uses many specific, relevant details throughout the essay. Is well organized with clear transitions; maintains focus. Sustains varied sentence structure. Exhibits many specific word choices. Contains little or no errors in grammar and conventions; errors do not interfere with understanding.</p>	<p>Score of 5: Skillful Develops ideas with some specific, relevant details. Is clearly organized; information is presented in an orderly way, but essay may lack transitions. Exhibits some variety in sentence structure. Displays some specific word choices. May contain some errors in grammar and conventions; errors do not interfere with understanding.</p>
<p>Score of 4: Sufficient Provides clear ideas, but sparsely developed; may have few details. Provides a clear sequence of information; provides pieces of information that are generally related to each other. Generally has simple sentences; may exhibit uneven control over sentence structure. Consists mainly of simple word choices, but may contain some specific word choices. Contains errors in grammar and conventions that generally do not interfere with understanding.</p>	<p>Score of 3: Uneven Provides limited or incomplete information; may be list-like or have the quality of an outline. Is disorganized or provides a disjointed sequence of information. Exhibits uneven control over sentence structure. May have some inaccurate word choices. Contains errors in grammar and conventions that sometimes interfere with understanding.</p>

Score of 2: Insufficient Provides little information and makes little attempt at development. Is very disorganized or too brief to detect organization. Exhibits little control over sentence structure. Contains inaccurate word choices in much of the essay. Is characterized by misspellings, missing words, and incorrect word order; errors in grammar and conventions are severe enough to make understanding very difficult in much of the essay.	Score of 1: Unsatisfactory Attempts a response, but may only paraphrase the prompt or be extremely brief. Exhibits no control over organization. Exhibits no control over sentence structure. Contains inaccurate word choices throughout most of the essay. Is characterized by misspellings, missing words, and incorrect word order; errors in grammar and conventions severely impede understanding throughout the essay.
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Using Criterion allowed for a systematic and consistent qualitative analysis of the transformations that occurred in students' expository writing over time. This analysis supports the semiotic analysis of the adolescent L2 writers' development of multimodal and L2 writing competence.

Brief statement of findings

Findings emerging from the analysis of the data were organized around four main transformations that occurred over time as a result of students' multimodal composing activities.

First, analysis of the content of the writers' texts across multiple modes (language and images) and text forms (posters, poster presentations and expository writing) indicated that there were transformations in students' understanding of the social and cultural issues they wrote and talked about. These findings related to how the writers developed topic knowledge (Alexander, 1997, 2003) and the ways they constructed ideational meanings (Halliday, 1978). The findings showed a variation and range of meanings in the writers' texts, demonstrating how the different modes and text forms offered different opportunities (affordances) and constraints for meaning making. Also, the decisions the writers took about language and visual

imagery indicated an effort at reconstructing community life, relating social and cultural issues in their communities to global events and discussions.

Second, the qualitative analysis of the multiple drafts of the writers' (word-based) expository texts, using Criterion, indicated that the multimodal activities helped the writers to improve the organization and development of their ideas and the over all quality of their paper.

Third, the analysis of students' guided reflections showed that significant transformations also occurred in the way students made decisions about selecting content and integrating modes in their texts to meet specific purposes and communicate specific meanings to their audience. The writers also demonstrated competence in the way they explained the choices they made. These transformations relate to the notion of developing "new intellectual tools" (Engeström, 1999a, p. 31) and strategic competence (Alexander, 1997, 2003) about multimodal composing.

Fourth, quantitative analysis of the exit survey indicated that there were transformations in the ways students used digital tools (computers and digital cameras) to compose multimodal texts. This relates to the development of technical knowledge (Bearne, 2009; Bearne & Wolstencroft, 2007; Hubbard, 2004). The results from the exit survey were compared with students' responses from the initial survey in order to understand the progress they had made regarding using different digital tools to compose multimodal texts. The findings from the quantitative analysis also supported the qualitative results regarding how students developed topic knowledge (understanding social and cultural issues), intellectual tools and strategic competence about composing multimodal texts (Alexander, 1997, 2003; Engeström, 1999a). In

the next section, I offer a detailed description and examination of how these findings emerged from (or are evident in) the multimodal composing activities of three of the focal students.

QUALITATIVE ANALYSIS

Examining Transformations in Adolescent L2 Writers' Multimodal and Expository Texts: The Case of Three Students

The data from the three of the focal students were analyzed qualitatively using a developmental case study approach (Brown & Rodgers, 2002; Cooper, 2006; Yin, 2009) and multimodal social semiotics perspective (Norris, 2012; Royce, 2002; Stein, 2008) in order to examine, in depth, the development of their L2 writing and multimodal competence. Each case analysis opens with “a portrait of the writer” in which I present the adolescent writer to my audience (i.e., the readers of this research report). I constructed each writer’s portrait based on my observations, my experiences of and encounters with the person and what I consider as striking and unique in the person’s writing (including composed texts and guided reflections) or interview transcript. Once the writer has been introduced, I take up an in depth analysis of the writer’s different text forms (i.e., expository writing, poster and poster presentation), focusing on how these texts interconnect to provide a fuller understanding of the writer’s meanings. The specific texts forms analyzed in each case include:

- (a) the photo elicitation write-up: the purpose of this activity was to help students choose a topic for their individual expository writing and poster creation and presentation activity.

- (b) The first draft of expository text: the analysis focuses on how this draft serves as a foundation for the creation of writer's poster
- (c) The poster: analyzed for intersemiotic meanings
- (d) The poster presentation: analyzed for multimodal interactional meanings; and
- (e) Multiple drafts of expository writing: analyzed for changes in organization and development of ideas.

EMBEDDED CASE 1: ATO

A Portrait of a Writer: "I have so many ideas"

I begin this portrait with an excerpt from the interview transcript (Excerpt 5.1) in which Ato, a 15-year old boy, describes himself as having lots of ideas.

Excerpt 5.1

Researcher: Which aspect or aspects of English do you really like?
 Ato: Comprehension
 R: Why?
 A: because I like answering questions
 R: How about composition?
 A: I like it but not so much
 R: Ok. Why not?
 A: Sir I don't know but [pauses] it's just that [unfinished sentence]
 R: Is comprehension easier than composition?
 A: Yes sir
 R: Why do you think so?
 A: In composition you will be writing so many things but in comprehension you just read and write.
 R: That's good to know. Well, since composition gives you a lot more problem let's talk about that aspect. What makes it difficult for you?
 A: Sometimes spelling and also punctuation
 R: How about ideas, do you find it easy composing your ideas, coming up with your ideas?
 A: [says it with a smile] Yes, because I have so many ideas
 R: [obviously excited about A's response] That's wonderful. I like that, I like that. And it shows, it shows in the kind of essay that you have written this term.
 A: [smiles. Seems satisfied]
 (Ato's Interview Transcript)

It was very significant to hear Ato describe himself as having “so many ideas”. He entered the course as one of the students who scored the lowest mark on the initial writing assignment; he also reported having limited exposure to using technology to compose multimodal texts. He had a quiet enthusiasm and confidence about him but was always silent in class, whether in small group or large group discussions. I usually had to go very close to him to ask him specific questions, which he usually responded with a short sentence, or sometimes with just a smile, gaze or a nod. Although I always understood his answers, I wished he would speak some more. His written responses were equally brief. I wasn’t sure how to interpret what I was observing about him. Was he shy? Or was he just not ready to speak or write.

The turning point came when students started writing their expository texts. In my comments on one of his earlier drafts, I asked Ato to see me in class or after class to schedule a meeting to talk about his essay. My main concern related to how to help him organize his ideas. Ato walked up to me; I was then explaining an aspect of a student’s work to her. This took about 15 to 20 minutes. But Ato waited till I had the time to sit with him. This was the turning point for both of us – for Ato as a student who desired to improve his writing, and for me as an instructor who was seeking ways to help him succeed.

Ato and I discussed how he could successfully arrange his ideas to make them logical and coherent. In doing this, I marked out areas in his essay/writing, showing where the ideas could connect. Additionally, we went over the points (ideas) he had begun to raise in his poster creation activity and examined how Ato could use these points to help him develop and organize the ideas in his expository text. When I was sure he understood what I had explained, I told him to revise and resubmit his paper. I thought he was going to spend a day or two in doing this, especially since I did not give him a deadline for the resubmission. To my amazement, Ato returned to me before the close of the school day with the revised draft. He was full of smiles; his enthusiasm was unmistakable. For me, this meant that Ato had found a listening ear, and this had drawn him into applying himself to his writing and learning. Things became very different from then on. I continued to observe how Ato now took personal interest in his writing and multimodal composing. He still didn’t say much; but I could tell he was happy and ready to learn.

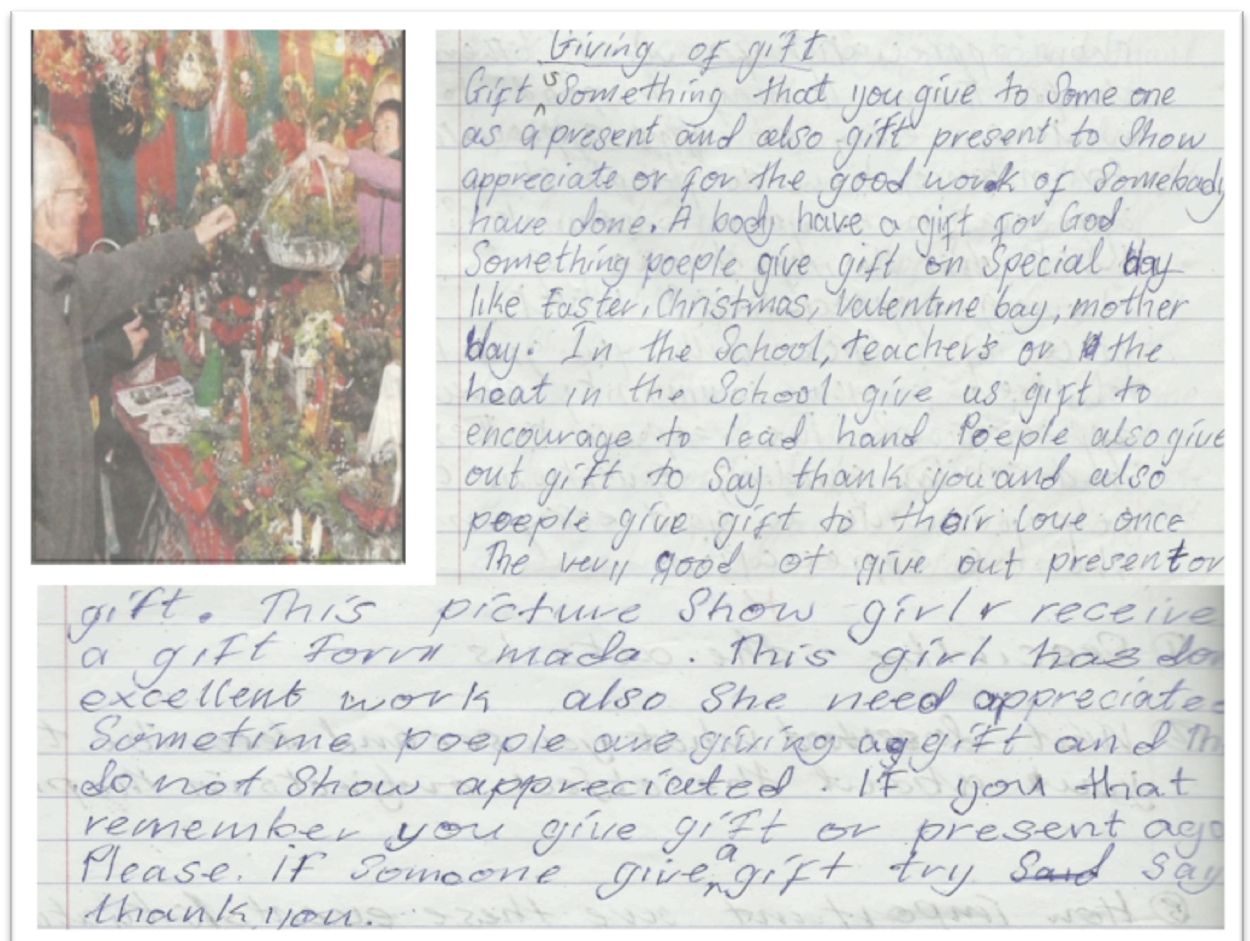
In the computer lab, Ato was still quiet but was always busy working on his project. He was fast at grasping the instruction and guidelines for working on the different stages of his multimodal-composing project. In the group project, Ato often took the lead in creating and designing their PowerPoint slides. He, however, did not take part in the group presentation, either because he was shy or was not ready for a presentation of his ideas in public. However, as I later observed Ato present and defend his ideas during the poster presentation activity, I knew that his description of himself as a writer with “so many ideas” was apt. As we analyze his different text forms, we will encounter a writer who has several challenges, but we will also know him as one who can and does defend his ideas.

Ato’s photo elicitation write-up and first draft of expository text

The picture Ato provided for this activity was from a paper he had used to wrap one of his exercise books. Ato titled his description and explanation “Giving of gift” (see Figure 10 and Textbox 1). In his description Ato surmised that the girl in the picture

was receiving a gift from the man, who wished to show his appreciation for an “excellent work” she had done⁵. Ato’s explanation reflects a social and cultural value that connects gift giving to the expression of gratitude, showing of appreciation, or as a sign of love (People give gift to their loved ones). Gifts are also given to motivate people to act, as in teachers giving gifts to encourage students to lead. These social and cultural values served as the foundational ideas for Ato’s poster and expository texts (analyzed below).

Figure 5.1a: Ato’s Photo elicitation write-up



⁵ A closer look at the picture could reveal an alternative interpretation, namely, that the man was receiving a basket of flowers from the woman. The explanation Ato gives suggests a personal and cultural interpretation, rather than an objective description of what is seen in the picture.

Figure 10. Ato's photo elicitation write-up

Textbox 1: Transcription of Ato's photo elicitation write-up

[Transcription⁶]

Giving of gift

Gift is something that you give to someone as a present and also gift is presented to show appreciation or for the good work somebody has done. A body is a gift for God. [Sometimes] people give gifts on special days like Easter, Christmas, Valentine's Day [and] Mothers' Day. In the school, teachers or the head in the school give us gift to encourage us to lead and people also give out gifts to thank you. People also give gifts to their loved ones. [It is] very good [to] give out presents or gifts. This picture shows a girl receiving a gift from [a man]. This girl has done excellent work [and needs to be] appreciated. Sometimes people are [given] a gift and they do not show appreciation. [It is good that you] remember [when] you are given a gift or present. Please, if someone gives [you] a gift try to say thank you.

The writer's first draft – titled “How do people show appreciation in our community [?]” – builds on ideas from the photo elicitation write-up (see Figure 10). For instance the draft maintains a focus on the connection between gift giving and appreciation, offering more examples of how people show appreciation in the writer's community. The writer also discusses the importance of showing appreciation and encourages children in his community to cultivate the habit of expressing their gratitude to people who help them in many ways. However, these ideas are only beginning to develop. As the writer creates his poster (Figure 11) the ideas developed through the multimodal activity will be used to revise the expository text.

⁶ I decided to transcribe Ato's hand written text to make it legible for the readers of this report. In doing this, I have maintained Ato's original language and expressions as much as possible. However, I have edited areas where his language interferes with the meaning of the text. [Edited areas are in brackets].

Textbox 2: Ato's first draft

How do people show appreciation in our community
Appreciation is the feeling you have when you are grateful to someone. However so many people has different way of showing appreciation to someone. Some people show appreciation through the way they talk. Some people can talk to you like thank you very much but others will say leave me alone and take your nonsensities away from me this small gift you gave me. Others show appreciation by giving gift. For example, I thank you for everything you have than for me. Others show appreciation by writing a letter to show appreciation. Sometimes people will collect the gift and insult you. So people do not give gift or show appreciation.
My pieces of advice to the children in our community is that we must show appreciation if someone give gift or do something for us. Appreciation is ever important because it motivate the pupil who gave you the gift or did something for you.
If you do not remember you give a gift or present again. Please if someone give you a gift, try to say thank you or show appreciation.

Analysis of intersemiotic meanings in Ato's poster

I now focus on analyzing Ato's poster creation and poster presentation, paying particular attention to how the adolescent writer transformed word-based texts into multimodal texts and how this transformation influenced the way he developed and communicated his ideas. In this analysis I draw on ideas from multimodal social semiotics (Stein, 2008), the notion of intersemiotic complementarity (Royce, 2002, 2007) and ideas from multimodal interaction analysis (Baldry & Thibault, 2005; Norris, 2011), all of which have been discussed earlier (see "Framework for examining transformations"). First, I present Ato's poster (Figure 11) and the transcription of the poster, using the notion intersemiotic complementarity (Table 11). I then analyze how different intersemiotic relations (Royce, 2007a) occur in Ato's poster to communicate specific ideational (i.e., experiential) meanings (Halliday, 1985). Next, I focus on how the multimodal interactions (Norris, 2011) that occurred during the writer's poster presentation created opportunities for him to develop and defend his ideas. In all these analyses, I pay attention to how the different text forms

interconnect to give readers' fuller understanding of the writer's message (Stein, 2008).

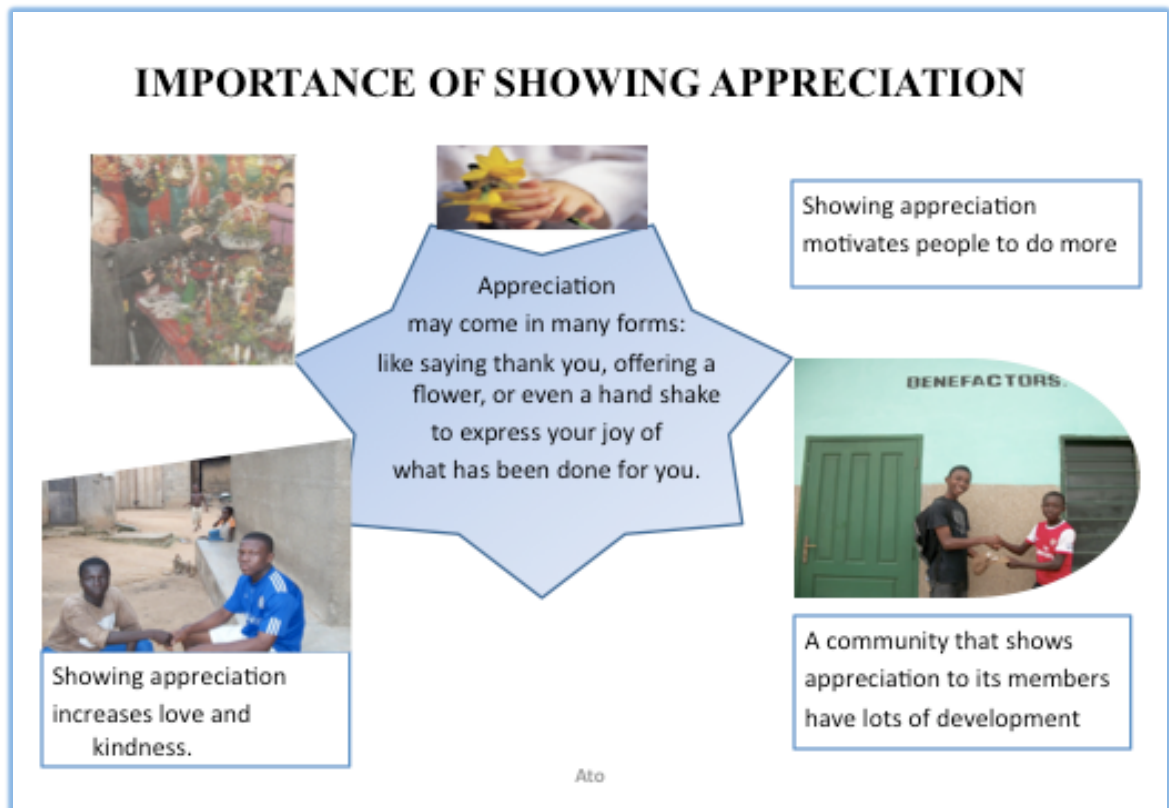


Figure 11. Ato's poster

Table 11

Showing Intersemiotic Complementarity in Ato's Poster

Element	Visual Meanings	Verbal Meanings	Intersemiotic Meanings
Title/ Topic	Written in capital letters and centered (font: Times New Roman, 28)	TRANSFORMING COMMUNITIES THROUGH APPRECIATION	Following convention; caps and centered to draw viewers attention
<u>Picture 1</u> Top Left	A woman holding a basket of flowers; a man stretching a hand toward the basket	Saying thank you	Intersemiotic synonymy: Ato suggests the man in picture is expressing gratitude (see photo elicitation activity). This is a deliberate interpretation, as the picture is subject to other forms of interpretation
<u>Picture 2</u> Top Center	2 hands holding a flower	Offering a flower (as a form of appreciation)	Intersemiotic repetition: Visual element (flower) is repeated in verbal expression
<u>Picture 3</u> Bottom Left	2 persons shaking hands	Showing appreciation brings about unity and togetherness	Intersemiotic synonymy: Verbal expression of unity and togetherness is similarly expressed through visual element of a handshake.
<u>Picture 4</u> Bottom Right	2 persons exchanging 'gift' and shaking hands; Inscription in the picture: "BENEFACTORS"	A community that shows appreciation to its members has a lot of development	Intersemiotic synonymy: The connection between appreciation and development (verbal element) is similarly expressed through exchanging gifts, shaking hands and inscription (BENEFACTORS) in the picture.

Ato's title (i.e., IMPORTANCE OF SHOWING APPRECIATION⁷) captures the focus of his message, which he expounded through the visual and verbal elements of his poster. Picture 1 was the one Ato used for his picture elicitation activity. Placing that picture at the top left corner of the page suggests that he wants the message of that picture (and his description of it) to serve as the starting point of his message. In the poster, the writer outlines different actions associated with showing appreciation in the blue-starred shape at the center and repeated these meanings in the

⁷ After the poster presentation, he changed the title into "Transforming Communities Through Appreciation" in order to connect his work more explicitly to the topic of his expository text (with the same phraseology) and the theme of the multimodal composing activity (Transforming People and Communities).

pictures: “saying thank you” is repeated in picture 1 (according to Ato’s own interpretation of the event or activity in that picture); “offering a flower” is repeated in picture 2; and “a hand shake” in pictures 3 and 4. The writer’s use of *intersemiotic repetition* (i.e., the repetition of the same actions in both verbal and visual elements) helps to place emphasis on these actions, making the writer’s ideas more vivid and concrete. The repetitions also leave a lasting impression on a reader’s mind (Royce, 2007a). The effects of these actions on communities, that is, the transformations they bring, are expressed through the verbal elements (love and kindness, motivation to do more, and development).

The adolescent writer also constructs and communicates his meanings by employing the use of *intersemiotic synonymy* (i.e., showing similarity relations between visual and lexical elements). For instance, the writer describes and interprets the action in picture 1 as a man giving a gift to a woman in appreciation for an “excellent work” the woman has done (see photo elicitation write-up above). In line with this interpretation, the action in the visual element (giving gift to show appreciation) is similarly stated in the verbal expression: “saying thank you.” The notion that gift giving is an expression of appreciation is also repeated in picture 4. Explaining the activity in picture 4 Ato states, “And if you look at this picture someone is giving something to somebody to show appreciation to that person” (see Excerpt 5.2, row 8 below). And still using intersemiotic synonymy, the writer associates the action of gift giving as an expression of gratitude (picture 4) with opportunities for development in communities.

The inscription “BENEFACTORS” in picture 4 connects with Ato’s message about how appreciation results in creating opportunities for development. In his word-based expository text, this point is expressed as follows:

When a community shows appreciation to its members, everybody wants to stay in that community and is ready to provide resources to develop the community ... A community that is filled with the spirit of appreciation is likely to have more people come to their aid. So let us all show appreciation to each other so our communities can be prosperous (Ato, Final Draft of Expository Text).

All these examples of intersemiotic relations (Jewith, 2009; Royce, 2002) show how different modes (e.g., language and images) and different text forms (e.g., word-based expository texts and posters) provide different opportunities for meaning making.


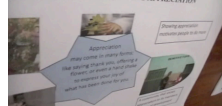


With specific reference to Ato’s composing, we have seen how the writer develops the same ideas in different text forms (expository writing and poster), and how these text forms give the writer the opportunity to introduce different nuances into his meanings and expression of ideas. In the analysis that follows, I focus on how the multimodal interactions (Norris, 2011) during the poster presentation provided the writer with yet another opportunity to develop and defend his ideas.

Ato’s poster presentation as site for meaning making











In his poster presentation, the writer emphasized the connection between appreciation and development of communities as the “main message” he wanted to communicate to his audience: “My main message is that a community that shows appreciation to its

members has a lot of development” (Ato, Poster Presentation; see Excerpt 5.2, row 4). The multimodal interaction captured in rows 15 and 16 indicates that at least some of the audience grasps the writer’s central message. In row 15, SED (who arrives late on the scene) asks the presenter/ writer to mention some benefits of showing appreciation. As the writer attempts to do so, Kwesi, who has been on the scene from the beginning, interrupts and gives the answer: “It leads to development.” Kwesi’s response, with a smile on his face, indicates that he understands Ato’s message and is able to communicate it to others.

Excerpt 5.2: Multimodal transcription of Ato’s poster presentation

Column 1 Rows/ Time in min & sec	VISUAL FRAME ⁸ Column 2	VISUAL IMAGE Column 3	KINESIC ACTION Column 4	PLAYSCRIPT (SPOKEN WORDS) Column 5
Row 1 1-10 sec		The presenter (Ato) in close caption. 3 persons in the background	Ato begins his presentation	My name is Ato. I come from Nkontrodo and my topic is about the importance of showing appreciation
2 11 – 20		Camera focuses on poster; tries to zoom in on section about forms of appreciation, in the shape at the center	Ato (not in the picture) continues his presentation	Appreciation can come in the form of saying thank you or form of giving flowers and all that.
3 21 - 28	↓	↓	There is a long pause due to noise in the background	(.....)
4 29 - 40		Camera still on poster; zooms in on the section about appreciation and development	Ato (not in the picture) resumes his presentation	My main message is that a community that shows appreciation to its members has a lot of development
5 31- 45	↓	↓	Ato pauses	(....)
6 46 – 52		Ato in close caption. Camera also shows another participant (Effie)	Ato continues his presentation, looking at poster. Effie’s looking at Ato’s poster [she seems engaged]	Also, showing appreciation [inaudible words]

⁸ Images have been edited to protect identity of participants. Also, the names used are pseudonyms.

7 53 – 1:02		Camera on poster; zooms in on the expression of appreciation through handshake	Ato continues his presentation (off camera)	If you see this picture, this person is showing appreciation by greeting that person to show his gratitude for something that [inaudible words]
8 1:03 – 1:12		Camera pans back to zoom on the section about appreciation and development	↓	And if you look at this picture someone is giving something to somebody to show appreciation to that person.
9 1:13 – 1:20		Ato in close shot; Effie to the left	Ato keeps focus on poster; takes a long pause then speaks; Effie keeps eyes on poster	Ato [(.....)] Question
10 1:21 – 1:30		3 persons in the picture: in close shot and center is Effie; Abena stands behind Effie; face of 3 rd person hidden	Effie is speaking; points to and looks at poster (not in the picture). Abena also looks more into the camera than at the poster	Effie: Is it only saying thank you or offering flowers or shaking hands that shows appreciation?
11 1:31 – 1:38		2 picture frames: top frame shows 5 persons: (left to right) Effie, Abena, Kwesi (touching face), a participant (blocked) & Ato (in close shot). Second frame shows 4 of the participants	Top frame: Ato turns quickly to address Effie. The audience focuses on his poster. Second frame: Ato smiles confidently, with a sense of satisfaction on his face. Kwesi looks at Ato and smiles too. Effie and Abena continue to focus on Ato's poster	Ato [responds quickly, almost overlapping with Effie, with sense of confidence in his voice] No, I said it can come in that form. I did not say that is the only form.
12 1:39 – 1:43		Camera focuses on Abena (at the center and in close shot)	Abena looks calm, with a gentle smile on her face	Abena: Some forms like?
13 1:44 – 1:54		3 persons in the camera: (l-r) Effie, Abena & Kwesi	All 3 persons turn toward Ato (not in the picture) as they try to clarify Abena's question	Ato: Pardon [Kwesi: She said can you furthermore give forms of showing appreciation?]
14 1:55 – 2:14		Camera shows 3 persons: Ato (bowing slightly), SED (left) & ANK (right)	Ato bows his head as he responds to Abena's question. SED & ANK look on	Ato: Ok, in our communities /incompl sent/ Elders in our communities show appreciation to their chiefs by bowing their heads as a form of showing appreciation.
15 2:15 – 2:20		Close shot: Kwesi (l), SED (center), ANK (right), Ato (top of head seen)	SED is speaking Kwesi and ANK look on	SED: Can you give me some benefits of showing appreciation?
16 2:21 – 2:30		(l-r) Abena, Kwesi & Ato; (behind) SED (blocked) & ANK	Ato turns head as he answers SED's question. Kwesi (smiling) interrupts and gives answer; their voices overlap	Ato: Ok. I have stated here that a community that shows [Kwesi: it leads to development] Ato: yea [i.e., exactly].

Another instance of how the interaction between presenter and audience helps to develop (expand) or defend ideas is captured in rows from 10 to 14. When a participant from the audience (Effie, row 10) asks whether “saying thank you, offering flowers or shaking hands” were the only forms of showing appreciation, Ato quickly and confidently responds and defends his ideas: “No, I said it can come in that form. I did not say that is the only form” (Excerpt 5.2, row 11). Finally, when another participant (Abena) presses him to give further examples of other forms of showing appreciation (Excerpt 5.2, rows 12 & 13), Ato responds by describing how the elders in his community bow their heads to show appreciation to their chiefs, a point he has also expressed in his expository text. Note how Ato bows slightly as he makes this point (Excerpt 5.2, row 14) his bodily action corresponding with his verbal expressions.

The smile on Ato’s face (Excerpt 5.2, row 11, second frame) and the sense of confidence and satisfaction he expresses as he defends his ideas are worth noticing. As mentioned in his “portrait” earlier on, Ato was very quiet in class. Besides, although he was instrumental in creating and designing his group’s PowerPoint, he did not take part in the presentation itself, either because he was not yet ready or did not want to speak. His ability to express his ideas at the poster presentation with such conviction and satisfaction shows the progress he has made as a writer and communicator. The way he defends his ideas also demonstrates his conviction in the message he communicates and his understanding of the social and cultural issue he has chosen to write and talk about. He demonstrates the same ability and

understanding in his guided reflection, when he is asked to respond to the feedback his peer gave on his poster presentation (see excerpt 5.3 below).

Excerpt 5.3: Using peer feedback to reinforce ideas

[Researcher: Reflection Guide]

Your classmate who responded to your poster liked how you stated the different forms of showing appreciation. She said that if people know the forms of appreciation, they could easily identify them. However, she also said that if she had the opportunity to create a poster on the same topic, she would have added a point about showing appreciation to parents. Do you agree with her that this idea should be added to your poster? If you agree with her, please explain why. If you do not agree with her, please explain why.

Ato's Response

I do agree with her because showing appreciation to parents also motivates the parents to do more. For example, if your mother or father buys a pen and you say thank you father or mother for giving me this wonderful gift, your mother or father will do more wonderful things for you or will give you more gifts and also best gifts; and so I agree (Ato, Guided Reflection, after Poster Presentation)

The example Ato uses in his response is also expressed in his expository text. By drawing on an idea from his expository text to answer a question about his poster, he indicates that the ideas expressed in the different text forms (i.e., expository texts, poster and poster presentation) are not isolated thoughts. As a multimodal composer, his meanings are not 'contained' in one text form. Rather, the different text forms connect to give him and his readers a fuller understanding of the meanings he wishes to communicate.

In the section that follows, I continue the analysis and discussion of Ato's composing practice, this time focusing on the changes that take place in his word-based expository text as a result of the multimodal composing activities in which he engaged.

How the multimodal activities influenced the development and organization of ideas in Ato's word-based expository text

In this section, I use Criterion to analyze Ato's word-based expository texts, focusing particularly on the qualitative changes that occurred in the organization and development of ideas. Figures 12 and 13 show screenshots of Ato's first draft (composed before the creation of poster) and final draft (composed after the poster presentation). Criterion uses color-coding to identify the different elements of the text, which include introduction, thesis statement, main ideas, supporting ideas and conclusion (see color key on the left of the screen). The Criterion traits feedback analysis of the adolescent writer's drafts are organized and summarized in Table 12. Although my analysis focuses on organization and development, all the traits are included in the table to give an overview of the feedback that Criterion generated and the overall quality of the writer's paper over time.

Trait Feedback Analysis Menu

Revise Essay | Printer-Friendly Version | Writer's Handbook

Grammar | Usage | Mechanics | Style | **Organization & Development**

Introductory Material
Thesis Statement
Main Ideas
Supporting Ideas
Conclusion

☐ Show individual elements
☒ Show all elements

Use the color key on the left to identify each element in your essay. To view elements one by one, select Show Individual Elements.

[View Question](#)

Appreciation is the feeling you have when you are grateful to someone. However so many people has different way of showing appreciation to someone. Some people show appreciation through the way they talk. Some people can talk to you like thank you very much but others will say leave me alone and take your nonsensities away from me this small gift you gave me. Others show appreciation by giving gift. For example, I thank you for everything you have than for me. Others show appreciation by writing a letter to show appreciation. Sometimes people will collect the gift and Insult you. So people do not give gift or show appreciation.

My pieces of advice to the children in our community is that we must show appreciation if someone give gift or do something for us. Appreciation is ever Important because it motivate the pupil who gave you the gift or did something for you.

If you do not remember you give a gift or present again. Please if someone give you a gift, try to say thank you or show appreciation.

Figure 12. Ato's first draft displayed in Criterion

Trait Feedback Analysis Menu

Revise Essay | Printer-Friendly Version | Writer's Handbook

Grammar | Usage | Mechanics | Style | **Organization & Development**

Introductory Material
Thesis Statement
Main Ideas
Supporting Ideas
Conclusion

☐ Show individual elements
☒ Show all elements

Use the color key on the left to identify each element in your essay. To view elements one by one, select Show Individual Elements

[View Question](#)

Appreciation is the feeling you have when you are grateful to someone and the actual expression of gratitude to the person. In this paper I will discourse [sic] the different ways people show appreciation and explain the importance of showing appreciation.

Different people have different ways of showing appreciation to someone. For example elders in our communities have a very good way of showing appreciation. They bow their heads as a form of showing appreciation to their kings. Also people remove their hat and bow as a form of showing appreciation to their chiefs. Some people also show appreciation through the way they talk. Some people express their gratitude through words, such as saying thank you for whatever you have done for me. Some people have not cultivated the virtue of saying thank you; instead they use harsh and unkind words even when people give them gifts.

People in the community who show appreciation are said to be good citizens, honest, respectful and faithful. And their help transforms our community because everyone wants to learn from them. Parents and the elderly people in the community should train children to show appreciation when someone gives them gifts or does something for them. People regard children who show appreciation in the community.

Appreciation is very important because it motivates the people who gave you the gift or did something for you. If parents give their children gifts and they kindly show appreciation, the parents will like to give more. Showing appreciation also brings about unity and togetherness in our societies. People who do not show appreciation are said to be ungrateful. They cause tension and sow the seed of anger in the community.

When a community shows appreciation to its members everybody wants to stay in that community and is ready to provide resources to develop the community. Also children who do not show appreciation are rebuked and disciplined.

A community that is filled with the spirit of appreciation is likely to have more people come to their aid so let us all show appreciation to each other so that our communities can become prosperous.

View Score Analysis
Print Expanded Performance Summary Report
Print Combined Feedback Report...

Figure 13. Ato's final draft displayed in Criterion

Table 12

Criterion Trait Feedback for Ato's Multiple Drafts

Traits	1 st Draft	2 nd Draft	Final Draft
Holistic Score	3	4	5
Grammar error	6	2	1
Usage error	3	3	2
Mechanics	2	2	6
Style: Repetitions	52	48	40
Word Count (Length)	181	261	353
Number of sentences	13	15	17
Average number of words per sentence	13.9	17.4	17.4
Organization & Development	Provides limited or incomplete information; may be list-like or have the quality of an outline. Is disorganized or provides a disjointed sequence of information.	Provides clear ideas, but sparsely developed; may have few details. Provides a clear sequence of information; provides pieces of information that are generally related to each other.	Develops ideas with some specific, relevant details. Is clearly organized; information is presented in an orderly way, but essay may lack transitions.

Criterion evaluates and describes the overall quality of Ato's first draft as uneven (score of 3). The paper contains all the elements of a conventional expository text: introduction, thesis statement, main ideas, supporting ideas and conclusion. However, the information provided is limited (181 words long, and only one main idea) and poorly organized. On the other hand, the second and final drafts show significant improvement in the way the ideas are developed and organized. For instance, the analysis of the final draft indicates that the student has provided significant amount of information on his topic (353 words long and four main ideas). He has also developed his ideas with specific, relevant details and organized his information in an orderly manner. Criterion evaluates and describes the final essay as skillful (score of 5). Summing up, it is important to note how the different text forms and multimodal interactions provide the writer with different opportunities to develop his and defend his ideas. These opportunities for meaning making are not possible with word-based composing alone.

EMBEDDED CASE 2: EFFIE

A portrait of a writer with the ability to connect local and global issues

Excerpt 5.4

[Researcher: Reflection Guide]

Reflect on your experiences creating the poster and the poster presentation itself (that is, the day you presented your poster to a larger audience).

Effie's Response

In creating my poster, I faced some challenges. I was supposed to select photos that will communicate well and match with the words. I also had to make the photos look explanatory that both literate and illiterate people could understand my poster. Although it was not easy to overcome the challenges, I always found a way out [...] I received encouragement from my friends and teacher. They convinced me and told me that my poster would improve the community I live in and even the whole world. So I put in more effort in order to help improve my country. I felt a bit shy [when presenting my work] but at the same time happy because, I was going to change the lives of people. [Also] my classmates and teachers who came to witness my presentation asked many questions. They were anxious about the Technology Divide and asked many questions. Some also wanted to know why I chose that topic. Others also said that the use of technology was not very important since it also had some bad effects. It was my word against theirs, but they soon understood that technology makes life rather easier. (Effie, Guided Reflection, June 2011)

I decided to begin Effie's portrait with this entry from her guided reflection because it captures, for me, the kind of writer she showed herself to be: a good communicator and a convincing writer, with the ability to connect local issues in her community and communities around her with global (worldwide) issues. Effie was a fourteen-year-old girl from a small village that was only a walking distance from her school (St. Anne). She was brilliant, thoughtful and (needless to say) one of the best students in her class. She entered the English composition course with a high score (in the upper quartile) on the initial writing assignment and reported having good exposure to using different forms of technology (although on the latter point, there was still a lot of things for her to learn about creating PowerPoints and posters).

A couple of days into their poster creation activity, I chanced upon a newspaper article, which talked about the difficulty in gaining access to technology in rural communities in Ghana. As Effie's topic for her multimodal composing activity focused on the importance of technology, I gave her the article to read. After that, I had a conversation with her regarding how she would incorporate some of the ideas from the article into her work. It was in this conversation that I mentioned, in passing, the concept of digital or technology divide. I say in passing because I did not dwell on it. I surely did not want to burden her with what, in my estimation, was scholars' jargon. But I was wrong. Effie took the idea and ran with it. She latched onto it, and made it the linchpin of her essay. By focusing on the notion of technology divide, she was able to connect her ideas about how technology has changed the world (her global perspective) to concrete situations in her own community, where access to technology was a big problem (her local perspective).

As the days and weeks progressed, it became increasingly encouraging to 'watch' her ideas grow and to see her become more convinced about the meanings she was constructing

through her poster and expository texts. But I was not the only one she needed to convince; there were her classmates, teachers and many others who wanted to understand her message, particularly during the poster presentation activity. And convince them she did! In her own words: “they soon understood that technology makes life rather easier.”

Effie’s photo elicitation activity and first draft of expository text

Effie submitted a picture of a computer, which she culled from a magazine, for her photo elicitation activity. Her description of and explanations about the picture are found in Textbox 3. My comments are italicized in brackets. In her description, the writer defines a computer and explains the functions of its major parts. Next, she describes how the computer relates to her own life, focusing on how it reminds her of her great grandfather. As my comments indicate, I thought this part of her write-up was somewhat fictional; she changed that part in her first draft. The rest of the write-up focuses on how technology has helped to improve communication and education, and how it has changed the world for the better.

The description and explanations in the photo elicitation write-up formed the foundation for the first draft of Effie’s expository text. As can be seen from Textbox 4, the writer’s first draft draws heavily on the photo elicitation write-up. Both the write-up and the first draft contain the same ideas, which are developed and organized in the same way. The only major difference is that the writer replaces the paragraph about her great grandfather with that of her earliest experience using technology. Such a strong connection between her photo elicitation write-up and her first draft shows how the multimodal activity sets the stage and tone for the writer’s expository text. I will return to this point later, as I analyze how the multimodal activities of creating and presenting posters influenced the writer’s expository writing.

Textbox 3: Effie's photo elicitation write-up

[Picture not available]

The photograph I am about to describe is a computer. A computer is a machine that quickly and automatically does calculations, solve problems etc. a computer has many parts. I would like to mention some parts of a computer. They are a monitor, keyboard, mouse and system unit. The monitor and the system unit are input devices while mouse and keyboard are input devices.

A computer reminds me of my great grandfather. The day my great grandfather bought me a computer was on my birthday, and that was the same day he died. Anytime I set my eyes on the computer, I remember the death of my great grandfather. Although the computer he gave me has spoilt, anytime I set my eyes on any computer, I remember him. *[Are you sure?]*

Computer is helping us in many ways. Example, it has provided internet, which has made communicating easier and faster. Long ago, we were using the snail mail, which took about weeks or even months before reaching its destination. Now with the help of internet we have e-mail which helps [makes] communication easier and faster. It reach [reaches] its destination in not more than an hour.

Internet is also promoting education in the world. It has places that if you go, you find many answers to your questions you've been asking for a long time. It has also made the world so wonderful for every person in the world.

With the help of computer many lives have change [changed] and many countries have develop [developed]. The computer has change [changed] the world to the better.

[Instructor's comments: Effie, you have raised a very important topic, that of the importance of technology in our lives. I encourage you to focus on this topic and write a good essay on it. I believe you can do it. Let's talk about it later.]

Textbox 4: Effie's first draft

THE IMPORTANCE OF TECHNOLOGY IN OUR LIVES

The technology that I would like to talk about is the computer. I will start by defining the word. A computer is a machine that quickly and automatically does calculations, solve problem etc. it can also be described as an electronic or mechanical device which used for processing data to produce information in the form of report or summary. A computer has many parts. But I would like to mention the main parts I can see in the picture. They are: keyboard, monitor, system unit and mouse. The keyboard and the mouse are the input devices while the monitor and the system unit are the output devices.

The computer reminds me so much of the first day I typed alphabets using the computer. I was in Primary one, when our ICT teacher who happens to be a white took us to the computer lab and taught us how to type alphabets using the computer. It also reminds me of the teacher because he was very kind and helped us in many ways. Today I have moved from typing alphabets to sending messages and communicating with people on the internet.

Today computer is helping us in many ways. Firstly, it has made communication easier and faster. Internet has provide us with email, which helps to talk to people all over the world. In the olden days, we were using the snail mail which was very slow. Now we have the email or internet which is faster. If even you talk for the whole day you will not be charged with huge amount of money but rather very small.

It has also promoted education in the world. It has some places like goggle [Google], which provides almost every answers to your questions. This helps to know and search for new things.

Now with the help of technology, many lives and countries have developed. It has changed the world to the better.

Analysis of intersemiotic meanings in Effie's poster

The analysis of and findings relating to the creation and presentation of poster demonstrate how the author transformed word-based texts into multimodal texts and how this transformation influenced the way she developed and communicated her ideas. The analysis also shows that the different texts the writer composed through her multimodal activities (word-based expository texts, poster and poster presentation) do not stand in isolation from each other. Rather, these text forms come together to help readers and viewers to fully appreciate the meanings the writer tries to communicate. Looked at together, the different texts provide a richer understanding of the writer's meanings than each of the texts in isolation (Stein, 2008). As the writer composes or revises one text form she draws on ideas from the other text forms to help her make and expand meanings. With specific reference to the connection between Effie's first draft and poster, it is important to note that, although the first draft served as the foundation for the creation of the poster, the ideas expressed through the integration of language and images in the poster are much more expanded and in depth than the ones in the ideas in the first draft. However, it will be a mistake to ignore the first draft (and subsequent drafts), if one wants to understand the author's meaning in the poster. Having said this, I now turn my attention to the analysis of Effie's poster and poster presentation, drawing on the notion of intersemiotic complementarity (Royce, 2002, 2007a) and ideas from multimodal social semiotic analysis (Stein, 2008) and multimodal interaction analysis

(Baldry & Thibault, 2005; Norris, 2011), discussed earlier (see “Framework for examining transformations”).

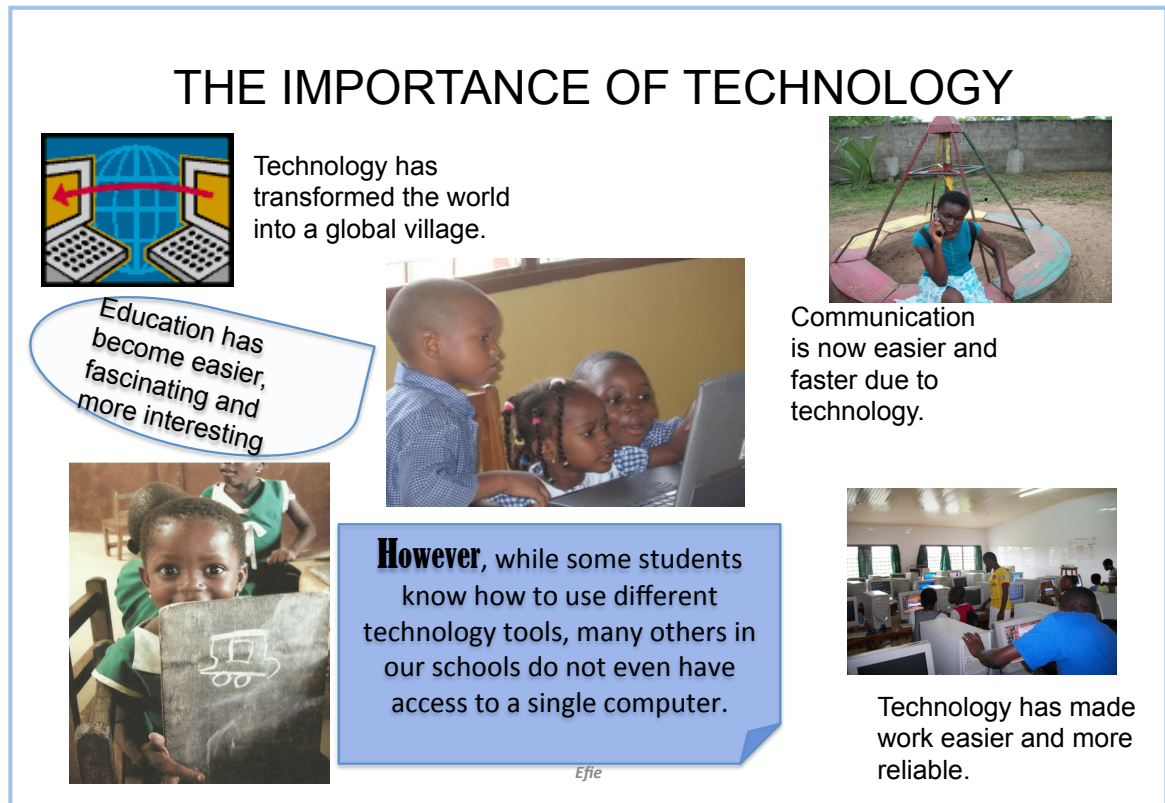


Figure 14. Effie's poster

Table 13

Showing Intersemiotic Complementarity in Effie's Poster

Element	Visual Meanings	Verbal Meanings	Intersemiotic Meanings
Title/ Topic	Written in capital letters (font size: Arnprior, 32)	THE IMPORTANCE OF TECHNOLOGY	Following convention; caps and font size also draw attention to the topic
<u>Picture 1</u> Top Left	2 laptops connected by an arrow; the globe at the background	Technology has transformed the world into a global village	Intersemiotic synonymy: laptops connected with an arrow representing information flow across the globe (visual), is synonymous with a world turned into a global village (verbal).
<u>Picture 2</u> Top Right	A girl on the phone at the playground	Communication is now faster and easier due to technology	Intersemiotic synonymy: girl on phone (visual) is synonymous with easier and faster communication (verbal).
<u>Picture 3</u> Bottom Right	Several persons working on computers in a lab	Technology has made work easier and more reliable	Intersemiotic synonymy: persons working on computers (visual) is synonymous with how technology has influenced work (verbal)
<u>Picture 4</u> Center	A girl and 2 boys in school uniform; [keenly] looking at something on a laptop	Education has become easier, fascinating and more interesting	Forms intersemiotic antonymy with meanings associated with picture 5. School children using a laptop (visual) is used to represent how technology has influenced education (verbal element), which is a sharp contrast to the meanings suggested by Picture 5.
<u>Picture 5</u> Bottom Left	A girl in a school uniform holding a slate with a drawing on it. Bright eyes [she looks excited]; 2 children in the background [a classroom]; faces are not seen	However , while some students know how to use different technology tools, many others in our schools do not even have access to a single computer	Forms Intersemiotic antonymy with Picture 4. A girl with slate in hand (visual) is used to represent lack of access to technology (verbal element) The visual and verbal elements are in sharp contrast to the meanings associated with picture 4.

The analysis of the intersemiotic relations (Royce, 2002, 2007a) in Effie's poster (see Figure 14 and Table 13 above) shows that she integrates visual and verbal modes effectively to communicate her meanings to her audience. The topic is written in capital letters (with font size 32) and centered to draw the viewers' attention to her

work and message. The different intersemiotic relations she has employed include *intersemiotic synonymy* and *intersemiotic antonymy*.

Intersemiotic synonymy (i.e., similarity relations between visual and lexical elements) is used in relation to pictures 1, 2 and 3 and their associated verbal (lexical) elements. Picture 1 was imported from clip arts (Microsoft). It shows 2 laptops at either end of the globe and connected with an arrow. In the animated version of the picture, the arrow moves back and forth, indicating the flow of information from one laptop to the other. The message the picture suggests is that technology makes it possible to share information across the globe (from one end of the world to the other), thereby connecting people and nations in an unprecedented manner. This message is similarly stated in the associated verbal element, namely, “technology has transformed the world into a global village.” In Picture 2 (from Effie’s collection of pictures taken with digital camera), the girl is using a cell phone to communicate with persons in other locations. The message the picture suggests (i.e., persons communicate on the phone instantly) is synonymous with the message expressed in the verbal element, which states that communication is easier and faster due to technology. Finally, the meaning Picture 3 suggests (persons working on computers) is synonymous with how technology has influenced work (as stated in the verbal element).

The author’s use of intersemiotic antonymy (showing opposite relations between visual and lexical elements) is related to pictures 4 and 5 and their associated verbal elements. Picture 4, showing three children in school uniform using a laptop, is used to represent how technology has influenced education (making education easier,

fascinating and more interesting). In Picture 5, however, a girl with a slate in hand is used to represent lack of access to technology. This sharp contrast is further heightened with the verbal message in the rectangular shape, effectively highlighted and centered to draw viewers' attention to the problem. For Effie, this technology divide is the crux of the matter; it is where change needs to occur in her community and communities around her. She takes up this discussion in both her expository text and poster presentation.

In her expository text, for instance, she explains the seriousness of this problem and appeals to the government to help solve the problem (see Excerpt 5.5).

Excerpt 5.5: Addressing Technology Divide

In many communities in Ghana, however, there is a technology divide. This is a problem. For instance, in Nkontrodo, a village near Elmina in the Central Region [of Ghana], getting access to technology or to the computer has become a very big problem. Many children [in the community] have no idea about what a computer is. A typical example of this is the two schools in Nkontrodo. We have the St. Anne's Catholic School and the A.M.E. Zion School. St. Anne's for instance have a very good environment and the students there know almost everything about technology. On the other hand, students at A.M.E. Zion are dying to have access to the computer, but do not have the opportunity. They do not have even one computer to help them learn ICT, which has been added to the final exam (BECE)... I would like to address the government to look at the importance of technology and make sure that all rural communities in Ghana get access to the computer... I hope ... the government will listen to me and take an action to solve the problem, so that all rural communities will be transformed. (Effie, Final Draft of Expository Text)









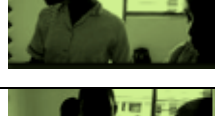
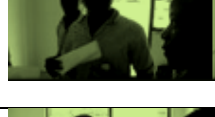
The author's immediate concern about the problem of technology divide lies in the fact that, although Information and Communication Technology (ICT) has been added to the curriculum and is part of the final examination (i.e., the Basic Education Certificate Examination, BECE at the end of Grade 9), many Junior High schools in rural communities (mostly public, government-funded ones) have no access to even a


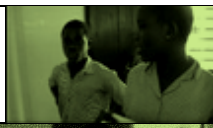





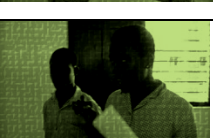
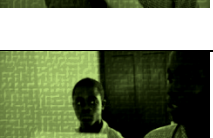



single computer to help them acquire the needed knowledge. In a sense then, the lack of access to technology sets many students up to fail.

Effie's poster presentation as site for meaning making

Effie also addresses the issue of technology divide in her poster presentation, as it is evident from the multimodal transcription of her presentation (see Excerpt 5.6, from row 11 to row 18). It is important to note that in this presentation, it is one of the participants, who through his question made a specific reference the connection between the lack of access to technology and the learning of ICT in schools (see Ebo's question in row 17). Effie herself did not make this specific connection in her presentation or in the drafts of her expository texts written before the poster presentation. In the drafts written before the presentation, the writer made her case about the technology divide in relation to the connection between technology and education in general. She added the detail about the connection between access to technology and ICT learning to her final draft, which was written after the presentation, indicating that the question her peer asked helped her to expand her knowledge about her topic.

Excerpt 5.6: Multimodal Transcription of Effie's Poster Presentation

Column 1	VISUAL FRAME Column 2	VISUAL IMAGE Column 3	KINESIC ACTION Column 4	PLAYSCRIPT (SPOKEN WORDS) Column 5
Row/ Time in min & sec				
Row 11 T: 41-46 seconds		Effie the presenter is back in the picture and at the center	Effie continues her presentation; audience still listening and looking on	Now the problem is that most students, most students in the rural schools do not have access to the technology world.
12 47-50		Camera focuses on poster	Presentation continues	They don't even have a single computer at their school.
13 51-55		↓	↓	And a typical example is the A.M.E. Zion School and St. Anne Catholic School.
14 56-60		↓	↓	At St. Anne we have a computer lab with about 24 computers and almost all the students have the experience.
15 1:01 – 1:05		↓	↓	But in Zion, they don't even have a single computer.
16 1:06 – 1:10		2 girls back in the picture	↓	And that brings about the technology divide.
17 1:11 – 1:20		Four are in people in the picture: from left to right: Ato, Effie (the presenter), Kwesi and Ebo (face turned from camera)	Effie end presentation Ebo turns toward her and asks a question	Thank you. Ebo: Please, eh, eh, if you are not having, if you cannot develop computer (skills), how can you do the ICT exam?
18 1:21 – 1:26		Camera focuses on Effie (the presenter)	Effie responds to Ebo's question	Effie [Yea, and in my essay too I addressed the government] () about how technology has improved education →
19 1:27 – 1:31		Focus on Effie, the presenter; Ato and Kwesi look on	↓	← and to provide technology for rural schools so that they can all get access to the technology world. Any question?
20 1:32 – 1:35		The four persons in the picture: from left to right: Ato, Effie (the presenter), Kwesi and Ebo (face turned from camera)	All four turn toward the speaker who is asking a question (not in the shot: later revealed as Abena)	Abena (from the background): What are the benefits of [inaudible]?

21 1:36 – 1:39		Four persons still in the shot; A fifth person in partially captured	Four students still facing the direction of the speaker, partially revealed at extreme left, also with paper in hand)	Effie (trying to understand the question): The benefits of the computer?
22 1:40 – 1:44		Focus on Effie, the presenter; Ato looks on	Effie [looks puzzled] Ato looks on silently Abena is still not in the shot	Abena (still speaks from the background): The benefits [inaudible] [Effie: The benefits?]
23 1:45 – 1:50		↓	Effie and Ato turn toward Kwesi (not in the shot), who is now speaking	Kwesi: (helping to clarify question) The benefits of technology or benefits of using the computer?
24 1:51 – 1:56		Abena, the one asking the question, is introduced into the picture and in the middle	Abena looks calm and smiles slightly. Ato smiles too	Abena (clarifies her question) What are the benefits of using technology?
25 1:57 – 2:05		Camera focuses on Effie, the presenter; Ato looks on	Effie responds to Abena's question	Effie: Well, it's easier and faster. And eh like communicating over the internet and sending emails to people.
26 2:06 – 2:08		Camera focuses on Effie, the presenter; Ato looks on. Abena is partially revealed	↓	It saves a lot of paper.
27 2:09 – 2:15		Camera focuses on Effie, the presenter; Ato looks on	Effie continues to speak; points to a direction behind her, signaling a time in the past	And it has also transformed the world because long ago we were using the snail mail, →
28 2:16 – 2:18		Camera focuses on Effie, the presenter; Ato looks on	Effie continues to speak; moves her hand very slowly in the air to signal the pace at which the mail 'travels'	← which was ver:::ry slow
29 2:19 – 2:24		Camera focuses on Effie, the presenter; Ato looks on	Effie continues to speak. Her gesture changes; points to the poster as she makes her final point	And now we have the email due to technology and it's now faster.
30 2:25 – 2:29		Ebo is reintroduced into the picture	Ebo (nods several times as he smiles at Effie's explanation)	↓
31 ↓		Ebo and Kwesi in the shot	Ebo continues to smile Kwesi turns toward Ebo and smiles too	↓
32 ↓		Ebo and Kwesi in the shot	Ebo, still smiling Kwesi continues to look at him, also smiling	Ebo: That's right

The multimodal interactions that took place during the poster presentation also created further opportunities for the presenter (Effie) to co-construct meanings with her peers. The multimodal interaction captured in rows 20 to 29 is a good example. In this interaction, one of the participants (Abena) asks a question about the benefits of using technology. However, it takes six turns between three people (Abena, Effie and Kwesi) and twenty-five seconds of presentation time to clarify the question (rows 20 to 24).

Turn 1: Abena (from the background): What are the benefits of [inaudible]?

Turn 2: Effie (trying to understand the question): The benefits of the computer?

Turn 3: Abena (still speaks from the background): The benefits [inaudible]

Turn 4: [Effie: The benefits?] (Effie looks puzzled at this point. Her voice overlaps with that of Abena)

Turn 5: Kwesi (helping to clarify question): The benefits of technology or benefits of using the computer?

Turn 6: Abena (clarifies her question): What are the benefits of using technology?

Once the question is clarified, Effie (the presenter) now answers the question (rows 25 to 29), indicating how technology helps to save paper and how emails are faster means of communicating with people than the “snail mail” (a metaphor for postal mail). Her response draws on details mainly from her photo elicitation write up, once again demonstrating how the authors kept moving ideas between their different text forms (written expository texts, posters and poster presentations) in order to communicate their meanings to their audience.

Finally, the multimodal interactions captured in the last three rows (30, 31 and 32) indicate how the presenter (Effie) succeeded in convincing her audience about her message and explanations. As Effie responded to Abena’s question, one of the

students (Ebo) nodded several times in affirmation and kept smiling at the presenter's explanation. Another student (Kwesi) also kept smiling. Then, as if to conclude the discussion and endorse the presenter's message, Ebo said, "That's right." His short statement summarized the attitude of the audience to Effie's message: she had made a good point and her audience agreed with her.

How the multimodal activities influenced the development and organization of ideas in Effie's word-based expository text

The analysis and discussion of Effie's poster and poster presentation have already given evidence of how her multimodal composing practices influenced the writing of her expository text. For instance, we have seen how the question one of her peers asked her during the poster presentation helped her to expand her knowledge about her topic and how she, as a result, added the detail about the connection between access to technology and ICT learning to her final draft, which was written after the presentation.

In what follows I use Criterion to analyze Effie's word-based expository text, focusing particularly on the changes that occurred in the organization and development of ideas. I begin this analysis by pointing to the screenshots (Figures 15 & 16) of Effie's first and final drafts (composed after the poster presentation activity). Criterion uses color-coding to identify the different elements of the text, which include introduction, thesis statement, main ideas, supporting ideas and conclusion (see color key on the left of the screen). The Criterion traits feedback analysis of the adolescent writer's final draft is also organized and summarized in Table 14, showing the overall quality of the writer's paper over time.

Trait Feedback Analysis Menu

Revise Essay | Printer-Friendly Version | Writer's Handbook | Help

Grammar | Usage | Mechanics | Style | Organization & Development

Introductory Material
Thesis Statement
Main Ideas
Supporting Ideas
Conclusion

☐ Show individual elements
☒ Show all elements

Use the color key on the left to identify each element in your essay. To view elements one by one, select Show Individual Elements.

View Question

The technology that I would like to talk about is the computer. I will start by defining the word. A computer is a machine that quickly and automatically does calculations, solve problem etc. It can also be described as an electronic or mechanical device which used for processing data to produce information in the form of report or summary. A computer has many parts. But I would like to mention the main parts I can see in the picture. They are: keyboard, monitor, system unit and mouse. The keyboard and the mouse are the input devices while the monitor and the system unit are the output devices.

The computer reminds me so much of the first day I typed alphabets using the computer. I was in Primary one, when our ICT teacher who happens to be a white took us to the computer lab and taught us how to type alphabets using the computer. It also reminds me of the teacher because he was very kind and helped us in many ways. Today I have moved from typing alphabets to sending messages and communicating with people on the internet.

Today computer is helping us in many ways. Firstly, it has made communication easier and faster. Internet has provide us with email, which helps to talk to people all over the world. In the olden days, we were using the snail mail which was very slow. Now we have the email or internet which is faster. If even you talk for the whole day you will not be charged with huge amount of money but rather very small.

It has also promoted education in the world. It has some places like goggle [Google], which provides almost every answers to your questions. This helps to know and search for new things.

Now with the help of technology, many lives and countries have developed. It has changed the world to the better.

Figure 15. Criterion analysis of Effie's first draft

Trait Feedback Analysis Menu

Revise Essay | Printer-Friendly Version | Writer's Handbook | Help

Grammar | Usage | Mechanics | Style | Organization & Development

Introductory Material
Thesis Statement
Main Ideas
Supporting Ideas
Conclusion

☐ Show individual elements
☒ Show all elements

Use the color key on the left to identify each element in your essay. To view elements one by one, select Show Individual Elements.

View Question

Technology as changes many countries [in the world] and many communities in Ghana. There are many things that technology has done for us and I would like to state and explain some of them.

Firstly, technology has made communication easier and faster. With the help of mobile phones, telephones and even the internet, we can now talk to our friends and family everywhere in the world. We can also talk for a long time without paying huge amounts of money. Secondly, technology has made the world a global world. We can now listen to news from all over the world. Thirdly, technology has made work easier and more reliable. Companies and Industries through technology now have machines that make producing new products easier. Hospitals also now have operation machines that help make operations go on successfully. In this way, work easier and more reliable. Lastly, technology has improved education. Students nowadays send emails through internet and are able to achieve much in life. They can also search for answers to their questions, which makes education easier, reliable and fantastic.

In many communities in Ghana, however, there is a technology divide. This is a problem. For instance, in Nkontrodo, a village near Elmina in the Central Region [of Ghana], getting access to technology or to the computer has become a very big problem. Many children [in the community] have no idea about what a computer is. I used to have many friends there who attended other schools. One of these friends was Mary. Mary was 15 years of age and had no idea what a computer is. This is because she claimed her school do not have even a computer to help them to study, and the teachers were not willing to help.

A typical example of this is the two schools in Nkontrodo. We have the St. Anne's Catholic School and the A.M.E. Zion School. St. Anne's for instance have a very good environment and the students there know almost everything about technology. On the other hand, students at A.M.E. Zion are dying to have access to the computer, but do not have the opportunity. They do not have even one computer to help them learn ICT, which has been added to the final exam (BECE). This brings about technology divide, which means some people having access to technology and others not.

In conclusion, I would like to address the government to look at the importance of technology and make sure that all rural communities in Ghana get access to the computer. An interview with the Regional Minister of Central Region states that the government will make sure that rural communities get access to the technology world. "Easier said than done." But I hope with my little advice and the speech of the Minister, the government will listen to me and take an action to solve the problem, so that all rural communities will be transformed.

View Score Analysis
Print Expanded Performance Summary Report
Print Combined Feedback Report...

Figure 16. Criterion analysis of Effie's final draft

Table 14

Criterion Feedback Analysis for Effie's Multiple Drafts

Traits	1 st Draft	2 nd Draft	Final Draft
Holistic Score	5	5	6
Grammar error	2	3	5
Usage error	3	5	5
Mechanics	4	4	5
Style: Repetitions	8	5	0
Word Count (Length)	319	386	486
Number of sentences	22	25	32
Average number of words per sentence	14.4	15.5	15.2
Organization & Development	Develops ideas with some specific, relevant details. Is clearly organized; information is presented in an orderly way, but essay may lack transitions.		Develops ideas well and uses many specific, relevant details throughout the essay. Is well organized with clear transitions; maintains focus.

As Table 5.5 shows, Criterion evaluates and describes the overall quality of Effie's first and second drafts as skillful (score of 5). The papers contain all the elements of a conventional expository text: introduction⁹, thesis statement, main ideas, supporting ideas and conclusion. Additionally, the author has provided sufficient information on her topic in both papers (an increase from 319 to 386 words long) and her ideas are well organized.

However, there are significant differences between the two drafts, particularly in relation to the amount of details provided and how the author connects her discussions to relevant issues in her community. In her first draft, Effie dedicated more than half of the paper describing the functions of a computer and talking about her earliest experiences using technology. The rest of the paper focused on how technology has improved communication and education and how it has changed the world in general. Her ideas at this point were personal (her experience) and global in

⁹ In the final draft displayed, although Criterion highlights the first paragraph as the thesis statement, a careful reading of the text reveals that the writer had intended it also to serve as the introduction. This is evident from the sentence: "There are many things technology has done for us and I would like to state and explain some of them."

perspective. There was no mention of the lack of access to technology and how this affected children in her community and other rural communities in Ghana. Also missing from the first draft was the role of the government in helping schools gain access to technology. These details began to surface and were integrated into her second draft after the ideas had been generated through the poster creation activity, indicating how the multimodal activity influenced the writing and revision of the expository text.

The final draft shows further significant improvement in the way the ideas are developed and organized. For instance, the analysis of the final draft indicates that the author has provided significant amount of information on his topic (486 words long; an increase of 167 words over the first draft and 100 words over the second). Her ideas are developed with many specific details and are well organized with clear transitions. She has also maintained her focus throughout the essay. Criterion evaluates and describes the final essay as excellent (score of 6).

In sum, Effie's ability to draw on ideas from other texts and the revision she made to her expository text (i.e., adding ideas and details from her poster and poster presentation) are examples of how the different text forms provided the writers with different opportunities to co-construct meanings with others in the learning environment and to deepen their understanding about the social and cultural issues they chose to write about (see other examples in the analysis of Ato's multimodal composing; case study 1 above). These findings are also evident in the case of the third student's multimodal composing (analyzed below).

EMBEDDED CASE 3: AMA

Portrait of a writer: Creative integration of narrative and expository texts

Excerpt 5.7

[Researcher: Reflection Guide]

Reflect on your experiences creating the poster and the poster presentation itself (that is, the day you presented your poster to a larger audience).

Ama's Response

I faced many challenges when creating my poster. These challenges are how to get appropriate and vivid pictures for the poster. I begged my friends for several times before they acted for me to capture. I overcame all these challenges when my friends accepted my proposal and allowed me to capture the pictures [their acting]. My sweet mother supported me and told my friends what they should do for me to capture. [When presenting my work to the audience] I felt shy and was frightened and scared. But I overcame all these.

(Ama, Guided Reflection, June 2011)

Ama was a 14-year old girl from a small village in southern Ghana; about fifteen minutes drive from her school. She entered the English composition course with an average (median) score on the initial writing assignment and reported having low exposure to using different digital-based multimodal composing. From her guided (Excerpt 5.7), we read about how she “felt shy and was frightened and scared” during the poster presentation activity, as did many of her classmates. For all of them, this was their first poster presentation session; and with such large audience (including students, teachers and individuals from surrounding communities), it was understandable that they would feel nervous. The most important thing about Ama's story, however, was not that she felt shy. She leaves a more impressive picture on the minds of her readers than that.

A closer look at Ama's guided reflection as well as her actual work, particularly her poster, reveals a writer with a creative mind, with the ability to mix narrative and expository texts. Ama's topic focused on real problems that girls encountered in her community and communities around her. But how would she capture these problems through the lens of a camera? How would she communicate real life situations through the medium of a poster? When Ama realized how difficult it was to obtain pictures that would match her thoughts on her topic, she did a very creative thing: she reconstructed the social issues through dramatization, and captured scenes of the narrative through the lens of the camera. These are the pictures you see in her poster.

As a good writer, Ama also acknowledges the support she received as she composed her multimodal texts, including support from her “sweet mother” and friends. Her story highlights how the home and communities served as sites of multimodal meaning making and how the interactions the writers engaged in created opportunities for them to develop and communicate their ideas.

Ama's photo elicitation activity and first draft of expository text

Ama selected a picture from her own album (a picture of herself) for the photo elicitation activity. She described herself as “looking very beautiful and attractive that day,” (see Textbox 5) and explained that she selected the picture because she liked it very much. But Ama was also crying when the picture was taken, an event that she laughs about anytime she looks at the picture.

Textbox 5: Ama's Picture elicitation write-up



The picture is Ama. I snapped this picture when I was a child. I snapped this picture at Esikado in our big veranda and I was two years of age when I snapped this picture. The photographer who snapped me this picture is called Bro Kodwo. I was wearing a straight dress with black slippers. I was looking very beautiful and attractive that day. I was crying that day because I don't want to snap the picture. That time I was not knowing everything [anything] so I was afraid of the photographer. I was told by my mother that when I was a child the food I liked best was red-red [i.e. fried plantain] and I saw some woman selling some and I told my mother to buy some for me but she refused so I was very angry and suddenly the photographer came and my mother told him to snap me that picture. Anytime I looked at this picture I laugh and laugh [again] because I was crying. I like this picture very much that is why I chose to write about this picture.

[Instructor's comment: Ama, based on your picture and explanation, I suggest you write an essay that relates to the opportunities girls in your community have to succeed in life or the challenges they face in their lives.]

After reading Ama's description and explanations, I suggested to her to consider writing an essay relating the lives of girls in her community (see Instructor's comment in Figure Textbox 5). My goal was to encourage her to observe what happens to girls in her community and to talk about opportunities and/or challenges in their lives. My suggestion was also based on Ama's previous composing experience. During the Group PowerPoint project, Ama and her group members focused on the problem of teenage pregnancy in Ghana. Realizing her interest in discussing issues relating to teenage girls, like herself, I thought a related topic might be of interest to

her. After a brief discussion with her, she decided to focus on the challenges facing girls in her community and communities around her. The result is the first draft of her expository text presented in Textbox 6, below.

Textbox 6: Ama's First Draft

CHALLENGES FACING GIRLS IN OUR COMMUNITIES

Some of the challenges facing girls in our communities are, if girls become adolescent they change the way they behave and these changes are physical, emotional and social changes.

So my opinion on my topic is that, in my community some of the girls don't go to school so they involve themselves in boy and girl relationship. Instead of them to go to school and learn you will see them standing with boys and doing unnecessary things and at the end of the day you will see them pregnant (teenage pregnancy).

And if they become pregnant they will send them out of school (school dropout). Sometimes their parents too will be angry and send them out of the house and they will become homeless (streetism) and you will see a nice girl pregnant and selling oranges. In my community, most of the girls have lost their parents and so they don't go to school and you will see a girl selling to get food to eat. All these are challenges facing girls in my community.

So my little advise on this topic is that girls must avoid bad companies, they must go to school and learn to become somebody in future and they must also stop the boy and girl relationship.

In this draft, Ama identified a number of challenges facing adolescent girls in her community. These challenges included the physical, emotional and social changes that mark adolescence, teenage pregnancy, school drop out and homelessness or streetism. "Streetism" is a common phenomenon in many towns and major cities in Ghana. It refers to situations where children, teens and young adults try to fend for themselves through petty trading on the streets. Most of these "traders" have no decent housing and sleep where the night find them, including street corners, market places and in kiosks and stores. Ama admits that some girls end up on the streets because they have no one to care for them. However, she also indicates that, if girls would go to school, avoid falling into bad company and stop engaging in unhealthy relationships (described as "boy-girl relationship"), they could "become somebody in

future” (i.e., build successful careers and have better lives for themselves). In a sense, then, her paper presents the sad story of many girls in many communities in Ghana. But it also offers hope, namely, that it is possible to have better futures, and many have found that place. The writer’s (Ama) development and organization of these ideas are captured and presented in unique ways through her poster and poster presentation, analyzed below.

Analysis of intersemiotic meanings in Ama’s poster

In this subsection, I present Ama’s poster (Figure 17 below) and the transcription of the poster (Table 15 below), drawing on Royce’s (2002, 2007a) notion of intersemiotic complementarity. I then analyze how different intersemiotic relations (Royce, 2007a) occur in Ama’s poster to communicate specific ideational (i.e., experiential) meanings (Halliday, 1985). Next, I focus on how the multimodal interactions (Norris, 2011) that occurred during her poster presentation created opportunities for her to develop her ideas and communicate value-laden messages (Canagarajah, 2009) to her audience. I also pay attention to how the writer’s expository text, poster and poster presentation interconnect to give readers’ fuller understanding of the meanings she intended to communicate (Stein, 2008).

Challenges Facing Girls in our Communities

Handling Changes in their Body. - Girls become very attractive at adolescence and usually find it difficult to handle the changes.



Peer Pressure - This leads them to unhealthy boy-girl relationship



Ama

Teenage Pregnancy - They become pregnant and their teachers sack them from school



Streetism/homelessness. - Their parents send them out of the house due to anger and disgrace.



Figure 17. Ama's poster

Table 15

Showing Intersemiotic Complementarity in Ama's Poster

Element	Visual Meanings	Verbal Meanings	Intersemiotic Meanings
Title/ Topic	Capitalizes first letter of key words (font size: Times New Roman, 32)	Challenges Facing Girls in our Communities	Following conventional style of writing titles
<u>Picture 1</u> Top Left	(Scene 1) Characters introduced: a boy and a girl standing next to each other; looking directly into the camera	<u>Handling Changes in their Body</u> - Girls become very attractive at adolescence and usually find it difficult to handle the changes	Introduction of sequence of events; verbal element deliberately focuses on girl; [presence of boy in visual is ignored in the verbal expression]
<u>Picture 2</u> Bottom Left	(Scene 2) Characters' posture changes; boy and girl touching each other at the shoulder	<u>Peer Pressure</u> - This leads them to unhealthy boy-girl relationship	Intersemiotic synonymy: The touch and face-to-face interaction between boy and girl (visual) are used to represent unhealthy relationship (verbal element)
<u>Picture 3</u> Top Right	(Scene 3) Girl in school uniform; with protruding stomach (showing pregnancy); appears to be crying (the water mark in her dress is to indicate her tears); a closed door behind her	<u>Teenage Pregnancy</u> - They become pregnant and their teachers sack them from school	a. Intersemiotic repetition: visual element of girl's pregnancy (protruding stomach) is repeated in the verbal expression "They become pregnant." b. Intersemiotic synonymy: The idea of girl being expelled from school (verbal element) is similarly expressed in visual element: girl in school uniform crying, with a closed door behind her. c. Intersemiotic MOOD: visual creates a sad scene: the girl's uniform drenched in tears; closed door [closed opportunities?]; verbal element (expulsion from school) intensifies this mood.
<u>Picture 4</u> Bottom Right	(Scene 4) Girl crying; being handed luggage (see bag straps) by the woman [parent] behind her	<u>Streetism</u> / <u>homelessness</u> - Their parents send them out of the house due to anger and disgrace.	Intersemiotic synonymy: the idea of parents expelling their daughters from home when the girls become pregnant (verbal element) is similarly expressed in visual element b. Intersemiotic MOOD: Visual depicts a sad scene: girl pregnant and crying [needing support] yet being sent out of the house; verbal expressions (streetism and homelessness) intensify this mood.
<u>Picture 5</u> Center	Same picture used for photo elicitation activity, this time in a 3D shape	[I was looking very beautiful and attractive that day (Photo Elicitation Write-up)]	Intersemiotic antonymy: The innocence and beauty of a 2-year old girl is in stark contrast to the challenges facing the adolescent girl.

Ama's message was very personal from the beginning. By selecting her own picture and placing that picture at the center of her work (poster), she signaled that the social issues she discussed – challenges facing girls in her community and communities around her – were of great concern to her. The rhetorical decision to place her picture in the middle also indicates that her personal story, as a teenager, is connected to the stories of the many girls whose lives and challenges she reconstructs and represents through her multimodal composing.

Another significant aspect of the writer's meaning making process is the way she has used dramatization to reconstruct community problems and practices. With support from her "sweet mother" (see "Portrait of a writer" above), Ama asked and guided her friends to dramatize the community issues she wanted to bring to the attention of her audience. For this writer, the issues she wanted to write about were difficult to capture through the lens of the camera, and in the manner she wanted to communicate or represent them to her audience. She therefore took an alternative approach to obtain her information and so construct her knowledge. First, she thought of how these issues played out in real life. Second, she composed a mental script of these issues, focusing on how she wanted to communicate these ideas to the audience. Third, she asked friends to dramatize her script, and then captured scenes of these dramatizations through the lens of the camera. There were also specific cultural understandings that motivated Ama's use of dramatization to construct and represent meanings. For instance, in the Akan cultural context, it not desirable to take pictures of a pregnant woman. Ama's intention to portray a pregnant teenage girl, therefore, needed to be accomplished through alternative approaches.

This integration of narrative and exposition in the same text offered the writer the opportunity to develop and communicate her ideas in a very logical manner. From a narrative perspective, Ama organized the challenges facing girls into four interrelated scenes: reaching adolescence (scene 1), engaging in unhealthy (boy-girl) relationships (scene 2), becoming pregnant and dropping out of school (scene 3), and being sent out of the home and finding oneself on the streets (scene 4). From an expository perspective, every scene in the story reveals a specific challenge that Ama wishes to discuss. In the poster, these ideas (or challenges) are signaled by the words written in bold and underlined: scene 1 connects with difficulties girls face handling changes in their bodies; scene 2 specifies the influence of peer pressure in the life of adolescents; scene 3 highlights the problem of teenage pregnancy (this is the climax of the story); and scene 4 connects with the phenomenon of streetism or homelessness.

The analysis of Ama's poster also indicates that she has used specific intersemiotic relations (Royce, 2002, 2007) effectively to communicate specific nuances of her message. The different intersemiotic relations she has used include *intersemiotic synonymy*, *intersemiotic MOOD* and *intersemiotic antonymy*.

Intersemiotic synonymy (i.e., similarity relations between visual and lexical elements) is used in relation to pictures (or scenes) 2, 3 and 4 and their associated verbal (lexical) expressions. Picture 2 shows a boy and a girl facing and touching each other. According to the writer, this event suggests an unhealthy relationship between the girl and the boy, a message that is similarly expressed in the verbal element: "This leads them to unhealthy boy-girl relationship." In picture 3, the idea

that the girl's teachers expel her from school as a result of her pregnancy (verbal element) is similarly expressed in the visual element: a girl in school uniform crying, with a closed door behind her. Finally, the message in the verbal element associated with Picture 4 indicate that some parents expel their pregnant daughters from home due to anger and the feeling of shame. This idea is similarly captured in the visual element, showing a girl crying and being handed a luggage by a woman, probably the mother.

Intersemiotic MOOD focuses mainly on interpersonal features of multimodal texts, showing the ways that modes are used to address viewers or readers. It describes how writers influence the attitude of their readers; that is, the way the audience receives and interprets the message the writers intend to communicate (Royce, 2007a). Ama uses intersemiotic MOOD in relation to pictures 3 and 4. Both pictures create an atmosphere of sadness, indicating the predicament of the teenage girl who becomes pregnant. In Picture 3, for instance, the girl's school uniform is drenched in tears, which is an indication of the depth of her sorrow and how perplexing her situation has become. Additionally, the closed door behind her could suggest closed opportunities; for example, in many rural and urban communities in Ghana, many girls who find themselves in such situations are unable to continue their education¹⁰. The statement that teachers sometimes expel pregnant girls from school also intensifies the MOOD of sadness and broken dreams. Picture 4 creates a similar atmosphere: the girl who is pregnant and needs a lot of support is rather send out of the house to fend for herself on the streets.

¹⁰ ("The Chronicle," May 23, 2012: <http://ghanaian-chronicle.com/?p=44650>)

With these depictions of events, the writer hits at the core of her message and invites her audience to see the seriousness of the problem. She also succeeds in painting a picture of society's attitude toward the pregnant teenager, namely that society provides practically no support for the teenager. And by creating this awareness through the use of intersemiotic MOOD, the writer is making an appeal to change this situation: an appeal to girls to take good care of themselves, and to society about their attitude toward pregnant teens (I shall return to this point in my analysis of Ama's poster presentation).










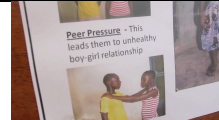
Finally, I turn to how Ama used intersemiotic antonymy (i.e., showing opposition relations between visual and lexical elements) to develop and communicate her ideas. The use of intersemiotic antonymy is in relation to Picture 5, the same picture used for the photo elicitation activity (see Textbox 5 above), this time in a 3D shape. Describing herself in that picture Ama wrote: "I was looking very beautiful and attractive that day" (Photo Elicitation Write-up). As we can see, the innocence and beauty of a 2-year old girl is in stark contrast to the challenges facing the adolescent girl. By placing this picture at the center, the writer signaled that the story she tells about adolescent girls in her community is also full of hope. The beauty and attractiveness conveyed by the 2-year old girl is a symbol of all that a girl can be: beautiful, attractive, smart and successful. She believes that these qualities are achievable, and that girls can take steps in doing so. This, for me, is a logical conclusion of the development of her ideas, which began the moment she selected that picture from her album.








All these analyses indicate that Ama does not take a neutral stance about the social and cultural issues she discusses. Her goal is not only to present information about the challenges facing girls in her communities; she also aims at social change through the expression of a value-laden message (Canagarajah, 2009). I take up this discussion in the analysis of her poster presentation.

Ama's poster presentation as site for meaning making

As in the cases of Ato and Effie (see Embedded Case Studies 1 and 2 above), the poster presentation created another opportunity for Ama to develop her ideas and communicate her meanings to her audience. I begin this analysis by presenting excerpts from the multimodal transcription of the writer's poster presentation (Excerpt 5.8). Next, I pay attention to the writer's goals in presenting her work, her explanation of the relevance of her work and the moral stance she takes regarding the social and cultural issues she discusses. Lastly, I point the writer's post presentation reflection as site for further development of her ideas about the challenges facing girls in communities in Ghana.

Excerpt 5.8: Multimodal transcription of Ama's poster presentation

Column 1	VISUAL FRAME Column 2	VISUAL IMAGE Column 3	KINESIC ACTION Column 4	SPOKEN WORDS Column 5
Row/ Time in min & sec				
1 1 – 5		Ama (presenter) in close shot. Another student (Mat) in the picture, with paper in hand.	Ama (smiling) looks at picture. Mat focuses on paper in hand	Voice of a teacher (not in the shot): We all pay attention to listen to Ama. Group members ...
2 6 – 10		↓	Ama looks back and smiles at one of her mates (not in picture). Mat focuses on paper in hand.	Voice of teacher still heard, encouraging the group members to get ready and listen to Ama
3 11 – 15		↓	Ama begins her presentation	Ama (speaks clearly): My name is Ama. I come from [Esikado]
4 16 – 20		Camera focuses on Ama's poster	Ama (off camera) continues her presentation	My topic is "Challenges facing girls in our communities"
5 21 – 25		Camera now on Ama; Mat still in the background (almost hidden)	Ama turns eyes from poster; focuses on her notes (not visible)	First of all, most of the girls in our communities go through some problems
6 26 – 35		Camera now on Ama; Mat still in the background; this time looking up	↓	And I want to /incompl sentence/ I am standing here to educate the young girls about how to manage to go through all these problems.
7 36 – 40		Camera focuses on poster and Ama (partially revealed) with pen in hand	Ama uses pen to point to poster: to picture 1 (scene 1)	I hope all of you here can see this nice picture
8 41 – 45		Camera now on Ama; Mat still in the background; looking up (his attention seems to have shifted from Ama)	Ama continues her presentation	It is talking about handling changes in this bodies →
9 46 – 54		Camera focuses on poster; Ama, partially revealed with pen in hand	Ama uses pen to point to poster: (picture 2, scene 2); she continues her presentation	← because if girls in our communities become adolescents, there are some changes, which start to develop in their bodies
10 56 – 1:02		Camera focuses on poster (picture 2, scene 2)	Ama continues presentation	And this, and this change will lead them to boy-girl relationship
11 1:03 – 1:08		Camera focuses on poster; Ama, partially revealed with pen in hand	Ama uses pen to point to poster: (picture 3, scene 3); she continues her	And at the end of the day you see them pregnant

			presentation	
12 1:09 – 1:15		Camera focuses on poster; Ama, partially revealed with pen in hand	Ama uses pen to point to poster: (picture 4, scene 4); she continues presentation	And their parents and teachers will sack them from school
13 1:16 – 1:20		Ama with paper in hand	Ama looks [intently] on paper [her notes]	(....) [A long pause]
14 1:21 – 1:30		Camera focuses on poster	Ama resumes presentation (off camera); [short pause]	My poster is important to my community because in this modern world girls are (..)
15 1:31 – 1:40		Camera pans back to focus on Ama; Mat in the background	Ama continues presentation; eyes on poster; Mat looking at Ama and poster	[Repeats] In this modern world girls have been involving themselves in boy-girl relationships.
16 1:41 – 1:45		Camera still focuses on Ama; Mat in the background	Ama smiles pleasantly as she speaks; her eyes on poster. Mat looks on	And this is very bad.
17 1:46 – 1:52		Camera focuses on poster	Ama continues to speak (off camera)	I hope that if girls see this poster, they will change their lives to, to be very good girls

In her poster presentation, the writer indicated that her goal was to educate girls about social problems: “I am standing here to educate the young girls about how to manage to go through all these problems” (see Excerpt 5.8, row 6, column 5). Following the statement of purpose, she now outlined the main points expressed through the ‘scenes’ of her poster, each time pointing to the specific picture (scene) with an object (pen) she was holding (rows 7 through 12). The writer concluded her presentation with a statement of relevance (indicating to her audience why her work was important) and a call for change (rows 14 through 17). After a long pause in row 13 (notice how she looks at the paper she was holding) she said:

Row 14: My poster is important to my community because in this modern world girls are (..)

Row 15: [Repeats] In this modern world girls have been involving themselves in boy-girl relationships.

Row 16: [with a smile] And this is very bad.

Row 17: I hope that if girls see this poster, they will change their lives to, to be very good girls

(Ama, from Excerpt 5.8: Poster Presentation)

The statement “And this is very bad” (said with a smile, Row 16, column 2), signals the moral stance the writer takes about her topic, indicating how the discussions she engages in “are motivated by deeply held values” (Canagarajah, 2009, p. 1). Her final statement (in Row 17) supports this interpretation: “I hope that if girls see this poster, they will change their lives to, to be very good girls.” For her, the changes that need to occur include changes in the moral and personal choices that girls make. While this theme (of personal and moral choices) runs through the writer’s different text forms (expository writing, poster and poster presentation), the explicit statement of her moral stance is found only in the poster presentation, where the writer has the opportunity to speak with her audience face-to-face. This example supports the finding that the different text forms presented writers’ with different affordances for meaning making.

Finally, Ama’s guided reflection after the poster presentation gives further insight into how she continued to develop knowledge about her topic (see Excerpt 5.9, below). This opportunity resulted from the feedback that her classmate provided on her poster presentation, which prompted her to problematize her ideas and to look at the issues from a different angle than she had presented in her poster. In this response, the focus shifts from the girl who is pregnant to the boy who impregnated her, particularly about what happens to him as result of his actions. As Ama reflects,

boys in such situations could be punished, be sent to the police station, be asked to pay a substantial amount of money, or they could run away from the village because of shame.

Excerpt 5.9: Using peer feedback to expand topic knowledge

[Researcher: Reflection Guide]

Your classmate who responded to your poster presentation said very good things about how you used appropriate pictures to help you express your ideas about the difficulties facing girls in communities. He said your topic is very important because teenage pregnancy is a big problem in Ghana. However, he felt that your topic should have added an aspect about the problems boys also face, especially drug abuse. He also said you should talk about what happens to boys or men who impregnate girls. Do you agree with him on these two points? If you agree with him, please explain why. If you do not agree with him, please explain why.

Ama's Response

I strongly agree with him because there are certain problems or challenges [that] boys also face in the community. These challenges include drug abuse, armed robbery, "sakawa"¹¹ and many more. If boys impregnate girls they go through a lot of problems. Sometimes the parents of the girl will send the boy to the chief's palace for punishment. In the olden days, if a boy impregnated a girl, they will send both of them out of the village. Especially if the parents of the girl are rich they will send the boy to the police station. Because of disgrace the boy will run away from the village or town. Sometimes the parents of the girl will also ask the boy to give them a huge amount of money because they have spent money on the girl since her infancy. (Ama, Guided Reflection, after Poster Presentation)

I have, to this point, focused on how the multimodal activities Ama engaged in created different opportunities for her to develop and communicate her ideas about the challenges facing girls in her community and communities around her. It is also evident from the analysis that the different text forms she composed are not isolated one from the other; rather, these texts interconnect to expand the writer's meanings.

¹¹ "Sakawa" refers to the actions of confidence tricksters, who use foul means to extort money and other property from their victims. Their actions could sometimes become violent.

In particular, we have seen how the photo elicitation write-up and the first draft of the expository text served as a foundation of the author's poster creation and poster presentation activities. The question to address now is how these multimodal activities (photo elicitation, poster creation and poster presentation) influenced the way she developed and organized ideas in her expository text. The answer to this question is found in the qualitative analysis of the two drafts she presented on her topic. The first draft was written before the poster creation activity; and the second draft after the poster presentation activity. Ama submitted two drafts because she was ill in the middle of the term and could not revise her text multiple times.

How the multimodal activities influenced the development and organization of ideas in Ama's word-based expository text

In this section, I use Criterion to analyze Ama's word-based expository texts, focusing particularly on the qualitative changes that occurred in the organization and development of ideas. Figures 18 and 19 show screenshots of Ama's first draft (composed before the poster creation activity) and final draft (composed after the poster presentation activity). The screenshots provide a visual representation of the organization and development of the essays. Criterion uses color-coding to identify the different elements of the text, which include introduction, thesis statement, main ideas, supporting ideas and conclusion (see color key on the left of the screen). The Criterion traits feedback analysis of the adolescent writer's drafts are organized and summarized in Table 16. Although my analysis focuses on organization and development, all the traits are included in the table to give an overview of the feedback that Criterion generated and the overall quality of the writer's paper.

Figure 5.12a: Ama's first draft displayed in Criterion

Trait Feedback Analysis Menu | Revise Essay | Printer-Friendly Version | Writer's Handbook

Grammar | Usage | Mechanics | Style | **Organization & Development**

Introductory Material
Thesis Statement
Main Ideas
Supporting Ideas
Conclusion

☐ Show individual elements
☒ Show all elements

Use the color key on the left to identify each element in your essay. To view elements one by one, select Show Individual Elements.

[View Question](#)

Some of the challenges facing girls in our communities are, if girls become adolescent they change the way they behave and these changes are physical, emotional and social changes.

So my opinion on my topic is that, in my community some of the girls don't go to school so they involve themselves in boy and girl relationship. Instead of them to go to school and learn you will see them standing with boys and doing unnecessary things and at the end of the day you will see them pregnant (teenage pregnancy).

And if they become pregnant they will send them out of school (school dropout). Sometimes their parents too will be angry and send them out of the house as they will become homeless (streetism) and you will see a nice girl pregnant and selling oranges. In my community, most of the girls have lost their parents and so they don't go to school and you will see a girl selling to get food to eat. All these are challenges facing girls in my community.

So my little [piece of] advise on this topic is that girls must avoid bad companies, they must go to school and learn to become somebody in future and they must also stop the boy and girl relationship.

Figure 18. Ama's first displayed in Criterion

Trait Feedback Analysis Menu | Revise Essay | Printer-Friendly Version | Writer's Handbook

Grammar | Usage | Mechanics | Style | **Organization & Development**

Introductory Material
Thesis Statement
Main Ideas
Supporting Ideas
Conclusion

☐ Show individual elements
☒ Show all elements

Use the color key on the left to identify each element in your essay. To view elements one by one, select Show Individual Elements.

[View Question](#)

Girls in our communities face a lot of challenges. These challenges include reaching adolescence, teenage pregnancy, school dropout and streetism. I will develop these points in the paragraphs that follow.

When girls reach the age of adolescence, there are some changes that appear in their body. Examples are they change the way they think, they also change the way they behave (psychological and emotional change), and there also some little [minor] changes that occur in them (physical change).

If these changes occur in their body, some of the girls will begin to do boy-girl relationship and at the end of the day they will become pregnant. And if they become pregnant, they will drop out of school (school dropout). Their teachers and friends will be angry with them and they will send them out from school and they will go and stay at the house.

Sometimes their parents will also become angry with them and send them out of the house and this can result in streetism or homelessness and you will see a nice girl selling to get some food to eat and sleeping at some dirty places because of teenage pregnancy and they will not see the boys who impregnated them. Sometimes the boys will run away from them.

My main idea or point on this topic is that if girls become adolescent, they do boy-girl relationship and they will become pregnant and they will send them out of school and their parents will send them out of the house and they will become homeless. My advice is that girls must stop boy-girl relationship, they must also learn hard by taking their education serious, they must avoid bad companies, girls must say NO or avoid premarital sex and they must also have a plan and focus in life.

[View Score Analysis](#)
[Print Expanded Performance Summary Report](#)
[Print Combined](#)

Figure 19. Ama's final draft displayed in Criterion

Table 16

Criterion Trait Feedback Analysis of Ama's First and Final Drafts

Traits	1 st Draft	Final Draft
Holistic Score	3	5
Grammar error	5	4
Usage error	3	1
Mechanics	3	2
Style: Repetitions	38	42
Word Count (Length)	213	300
Number of sentences	8	12
Average number of words per sentence	26.9	25
Organization & Development	Provides limited or incomplete information; may be list-like or have the quality of an outline. Is disorganized or provides a disjointed sequence of information.	Develops ideas with some specific, relevant details. Is clearly organized; information is presented in an orderly way, but essay may lack transitions.

Criterion evaluates and describes the overall quality of Ama's first draft as uneven (score of 3). The paper contains all the elements of a conventional expository text: introduction, thesis statement, main ideas, supporting ideas and conclusion. However, the information provided is limited (213 words long) and poorly organized. On the other hand, the second and final draft shows significant improvement in the way the ideas are developed and organized. For instance, the analysis of the final draft indicates that the writer has provided significant amount of information on her topic (300 words long). She has also developed her ideas with specific, relevant details and organized her information in an orderly manner. Criterion evaluates and describes the final essay as skillful (score of 5).

I conclude the analysis of Ama's multimodal and expository composing by re-echoing her creative ability to integrate narrativity and exposition in the same text to construct and represent her message about the challenges facing girls in her community and communities around her. Such creativity, and the variations of

meanings resulting from it, could have remained untapped had the composing experience emphasized the writing of only word-based expository texts. By engaging in different multimodal activities, however, Ama gained the opportunity to develop and deepen her understandings about the challenges facing girls in her community and communities around her.

Finally, as mentioned in her “portrait,” her multimodal composing process and the support she received from her mother and friends are examples of how the home and communities served as sites of multimodal meaning making and how the interactions the writers engaged in created opportunities for them to develop and communicate their ideas.

Section Summary

In this section, I have analyzed data from three adolescent L2 writers (Ato, Effie and Ama), using a developmental case study approach (Brown & Rodgers, 2002; Cooper, 2006; Yin, 2009) and multimodal social semiotics perspective (Norris, 2012; Royce, 2002; Stein, 2008) in order to examine, in depth, the development of their L2 writing and multimodal competence. Findings from these analyses indicated that the way the adolescent writers transformed word-based texts into multimodal texts (posters and poster presentations) influenced how they developed and communicated their ideas. For instance, the multimodal interactions (Norris, 2011) that occurred during the writers’ poster presentation created opportunities for them to develop and defend his ideas.

Another important finding related to how the writers developed topic knowledge. The social semiotic analysis of their multimodal texts indicated that the

writers learned more about their topics and effectively communicated the understandings they gained with their audience. Next, a closer look at the way the writers developed and communicated their meanings showed that they drew on ideas from the different texts they composed, demonstrating how the different text forms interconnect to give readers' fuller understanding of the writers' message (Stein, 2008). Finally, the qualitative analysis using Criterion showed that the multimodal activities the writers engaged in helped the writers to improve the development and organization of ideas in their word-based expository texts.

In the next section, I turn my attention to how the adolescent L2 writers developed understanding about multimodal composing, paying particular attention to developing intellectual tools (Engeström, 1999) and strategic competence (Alexander, 2003).

Examining Transformations in Students' Understanding of Multimodal Composing: Developing Intellectual Tools and Strategic Competence

In the previous section, I focused on the outcome of the writers' multimodal composing activity in relation to the material texts they produced (i.e., their written expository texts, posters and poster presentations) and the way the writers developed ideas and constructed meanings through different modes and different texts (see findings relating to the three case studies above). In this section, I turn my attention to examining outcome in relation to the "new intellectual tools" (Engeström, 1999, p. 31) and strategic competence (Alexander, 1997, 2003) the writers developed about composing multimodal texts. Intellectual tools, in this research, refer to the knowledge and understandings about multimodal composing that the adolescent L2 writers gained as a result of engaging in multimodal text making. In particular, developing intellectual tools about multimodal composing involves the ability to make decisions about selecting appropriate modes to make meanings and communicate messages to an audience as well as the ability to reflect on choices writers make regarding the design of multimodal texts (Bearne, 2009; Bearne & Wolstencroft, 2007).

The data analyzed in response to this focus were from the three focal students' (Ato, Effie and Ama) guided reflections and were collected after their poster presentation activity. In order to capture and understand the transformations that occurred in the writers' understanding of multimodal text-making, I asked them to engage in guided reflections about specific changes they would or would not make in their ideas, in the number of pictures they would use and the integration (and

arrangement) of pictures and words in their poster. I used structuring coding (Saldaña, 2009) to organize the data under three main categories: 1) decisions about changing ideas, 2) decisions about using pictures and 3) decisions about integrating pictures and words in the same text. The findings resulting from the structural coding procedure are presented below as summaries of responses in relation to the aforementioned categories. In the subsections that follow, I state the guided reflection questions and summarize the adolescent writers' responses to these questions.

Summary of responses about changing ideas in posters

If I have the opportunity to change any aspects of your poster:

- a. I will change some of the ideas.
- b. I will add more ideas to my poster.

One of the distinctive marks of competent multimodal text makers is the writers' ability to select specific and relevant content for their text, and explain the choices they make. In particular, these choices and explanations are indicative of a writer's understanding of the multimodal composing process (Bearne, 2009; Bearne & Wolstencroft, 2007). This section of the writers' guided reflection, therefore, focused on the changes they would or would not make in the ideas or content of their texts (i.e., posters) and their reasons for making such choices. In their responses, the writers indicated that they would retain and add to the ideas they had already expressed in their poster. The reasons they offered for retaining their ideas were that their ideas were good, clear and convincing. Regarding adding to their ideas, Ato mentioned that he would add a verbal expression to his first picture (see Figure 5.3, above); Effie expressed the need to explain the effect technology divide has on people (particularly students); and Ama would want to address the issue of how boys who

impregnate girls sometimes run away, leaving “this poor girl ... to cater for the child alone.” Excerpt 5.10 below provides samples of the writers’ responses on their ideas.

Excerpt 5.10: Sample responses about changing ideas in poster

(a) I will change some of the ideas.

Ato: I will not change any of the ideas because I think the ideas are good.

Effie: No, I will not change any of my ideas. This is because I think my ideas are clear enough and also convincing.

Ama: No, I will maintain them and add more ideas.

(b) I will add more ideas to my poster.

Ato: I will add more ideas to my poster because my first picture needs an idea. I need to write something under my first picture, like “showing appreciation makes people buy flowers and gifts just to show appreciation.”

Effie: I will choose to add more ideas to my poster. For example, identifying the problem where some people get access to technology and others do not get access to even a single computer, which is referred to as Technology Divide, I will also talk add what happens to the people who don’t have access to technology.

Ama: I will add ideas about what happens to girls when they are sent out of the house. Also, sometimes the boys who impregnated the girl will escape [run away] from them and this poor girl is supposed to cater for the child alone.

Summary of responses about using pictures in posters

If I have the opportunity to change any aspects of my poster:

- a. I will change some of the pictures.
- b. I will reduce the number of pictures.
- c. I will increase the number of pictures.

Bearne & Wolstencroft (2007) also explain that competent multimodal composers are able to select specific, appropriate modes to construct and represent their ideas. These modes (e.g., pictures and words) are not chosen at random; rather, writers should be able to explain the rationale behind their choices. The purpose of this section of the writers' guided reflections, therefore, was to elicit information on their use of pictures and the reasons for such usage. In their responses, the writers indicated that the pictures they selected for their posters were fine (ok), appropriate and helped to communicate their ideas. None of the writers had any intention of reducing the number of pictures they had used because, as one of the explained, "reducing the number of pictures is not a good idea." On the other hand, they all had plans to increase the number of pictures in communicating their ideas. For instance, Ato wanted to add a picture to match his verbal statement about how the act of appreciation motivates people to be more generous; Effie wanted to add pictures to make her poster more attractive and colorful; and Ama wanted to add pictures that would show a girl standing up for herself ("standing before a boy and saying NO to pre-marital sex") as well as pictures that detailed the plight of a teenage mother, such as "a girl selling a carrying her baby at her back." Samples of the writers' responses about using pictures are found in Excerpt 5.11.

Excerpt 5.11: Sample responses about using pictures in poster

(a) I will change some of the pictures.

Ato: I will not change any of the pictures because I think the pictures are ok.

Effie: I think that all the pictures I selected communicate well about my ideas and what I want to communicate.

Ama: No, because I used appropriate pictures when creating my poster

(b) I will reduce the number of pictures.

Ato: I will not reduce the number of pictures because I need more pictures.

Effie: Pictures communicate very well and explain what one is saying, so I think that reducing the number of pictures is not a good idea.

Ama: No, because I would like to add more important pictures for my poster to be comprehensible

(c) I will increase the number of pictures.

Ato: I will increase the number of pictures because on the poster I wrote that showing appreciation motivates people to do more. I need a picture for it.

Effie: By using more pictures my poster will look very attractive and colourful and from a very long distance you would want to read my poster.

Ama: Yes, because there are some pictures I would like to add to my poster. For example, I would also like to add some pictures such as a girl standing before a boy and saying NO to pre-marital sex; a young girl who is pregnant and selling something to get food to eat because she is sent out of the house; a girl selling and carrying a baby at her back and you will see her baby crying because the baby is hungry. I strongly believe that all these pictures will make my poster very clear and interesting.

Summary of responses about integrating and arranging pictures and words in posters

If I have the opportunity to change any aspects of your poster:

- a. I will use more words and fewer pictures.
- b. I will use more pictures and fewer words.
- c. I will change the way I have arranged the pictures and words on my poster.

Another characteristic feature about developing multimodal competence is how writers integrate and arrange modes in their multimodal texts (Bearne, 2009; Bearne & Wolstencroft, 2007). The final section of the writers' guided reflection, therefore, focused on the integration and arrangement of pictures and words in their posters. If the writers had the opportunities to re-integrate pictures and words into their poster, would they use fewer pictures and more words, or more pictures and fewer words? In their response, all three writers indicated they would use more pictures and fewer words. The reasons they offered were that pictures help develop ideas, enhance comprehension, and help writers communicate their messages to a wider audience, including those who can read and those who cannot read. On the question of arrangement, Ato indicated that he would like to rearrange his page to create more space; Effie wanted a more orderly arrangement; and Ama was convinced her current arrangement was well done and did not need to change.

Excerpt 5.12: Sample responses about integrating and arranging pictures and words in poster

(a) I will use more words and fewer pictures.

Ato: I will not use more words and fewer pictures because the pictures give more ideas than the words.

Effie: Since I want my poster to be read by everyone, it will not be a good idea to use more words and fewer pictures. This is also because illiterates [people who have not been to school] cannot read.

Ama: No, I cannot use more words and fewer pictures because my poster will not be understandable.

(b) I will use more pictures and fewer words.

Ato: I will use more pictures and fewer words because the pictures give more ideas than the words.

Effie: I will use more pictures and fewer words because many people cannot read so, as they watch the pictures, they will be able to understand my poster.

Ama: Yes, because if I use more pictures people will get to understand what I'm talking about

(c) I will change the way I have arranged the pictures and words in my poster.

Ato: I will change the way I have arranged the pictures and words on my poster because I need to space them.

Effie: I would have wanted to arrange my words in an orderly manner, which would have been in stages form.

Ama: No, because I arranged the pictures and words in an orderly manner when creating my poster

A closer look at these responses indicates that the writers' choices were not randomly made. Rather, these adolescent L2 writers made their choices strategically in order to create and communicate their meanings to their audience. Such demonstration of strategic competence (Alexander, 1997, 2003) indicates the progress the writers had made in their understanding of multimodal composing. By reflecting on the specific choices they made in composing their texts, the writers signaled the opportunities they had gained through their multimodal activities to deepen their understanding and expand their knowledge (i.e., developing intellectual tools) about multimodal composing.

Analyzing Students' Development of Interest in Multimodal Composing

The analysis of students' expressions of interest in multimodal composing draws on Alexander's (2003, 2005) MDL and Kress's (2010) social semiotic approach to multimodal and contemporary communication.

From the MDL perspective, *interest* may come in the form of heightened attention, engagement, or curiosity sparked by the present features of the task, text, or context (i.e., *situational interest*). Or, it can refer to a more enduring and stable form of involvement in, identification with, or a passion for the domain or topic in which individuals are engaged (i.e., *individual interest*; Alexander, 2005; Murphy & Alexander, 2002). Alexander (2005) also explains that interest (like knowledge and strategic processing) is not static; individuals' interest in particular domain of learning or topic develops across a lifespan. At the beginning of a learning process (described as acclimation), learners are expected to rely mostly on situational interest to maintain their focus and spark their performance. As individuals become more competent learners, they rely more on personal interest in the domain and become less dependent on situational features of the environment.

From a multimodal communication perspective, *interest* refers to individuals' 'take' on the world at a particular moment in time as shaped by their past and present experiences and future expectations and also in response to their interpretation of the immediate social context and representational need (Kress, 2009, 2010). Interest is what motivates how specific "meaning potentials are selected and orchestrated to make meaning by people in particular contexts to realize specific social meaning" (Jewitt, 2009, p. 31).

Using these two perspectives allowed me to analyze interest at different yet complementary levels (or from different angles). Alexander's MDL connects interest to domain learning (as in developing interest in math, English, history or science) and to domain-related topics (as in developing interest in specific topics associated math, English, history or science). Kress, on the other hand, connects interest to the construction and communication of meanings in specific social contexts, and to the changes that these meanings are expected to effect. His focus is on how a rhetor (writer, designer, speaker, etc.) participates in an equitable social discourse by drawing on available semiotic resources to address specific and pertinent issues from a specific point of view. As he puts it: "In a model of communication for full and equitable participation in the new communicational world, the rhetor's interests need to be fully acknowledged" (Kress, 2010, p. 26).

Drawing on the perspectives of MDL and multimodal communication, therefore, the analysis in this section focuses on students' interest in multimodal composing within an English composition course (domain learning) and in specific social and cultural issues (domain-related topics). The analysis also highlights the fact that the adolescent writers do not address these social and cultural issues from a neutral standpoint; that these writers approach their topics from specific points of view, reflecting their specific interests in these issues and in the multimodal composing process through which these issues are addressed.

In order to understand the adolescent writers' interests in multimodal composing, I asked them at the end of the term to reflect on how they felt about the English composition course and on what they had learned in the three month period.

The reflection guide and excerpts from the three focal students' responses are presented below.

Excerpt 5.13: Expressing interest in multimodal composing

[Researcher: Reflection Guide]

Write a reflection on how you feel about this term's English Composition class. How will you describe this term's composition class and why? Talk also about the things you learned and how important they are to you.

Students' Responses

(A) Ato

This term's English composition class is good and just wonderful, [especially when] it comes to the way that everybody is focusing [paying attention] in the class. Everybody pays attention to what the teacher is saying and does as he says. This helps the class to go very fast and also, the way that the classmates are able to contribute in [to] the lessons has let everyone focus. Also how people share their ideas with the class has also let [helped] the class to improve in their lesson and their ability of learning. [...] Also the PowerPoint presentation helps [me to] present my work in public. The PowerPoint presentation also helps me to know many things about the computer and how to present my ideas in a simple [way]. Also, the [creation of] poster helped me to know how to insert pictures onto my work on the computer. With all these I will say that this term's composition class has been just wonderful.

(B) Effie

I will term this term's English composition class to be very enjoyable. I enjoyed almost everything we did: using, digital camera to snap pictures, learning how to create posters, the group activities, PowerPoint presentation, brainstorming for ideas, etc. with all these, I can achieve [many things] in life. I never knew how to use digital camera to snap pictures, but in this term's English composition class I was taught how to do it. I even used the cameras to snap pictures relating to my topic and this made me very happy. Also, I was able to identify my main ideas and made a poster from it. I enjoyed it very much and I even used the pictures I had taken with the camera to complete my poster. Also, through our group activities I learned how to present a work to a group of people. [...] I was also very happy that I could choose my own topic that can really transform many communities.

(C) Ama

I find this class to be interesting because we tried to write so many essays. And after writing all these essays we went to the computer lab to do practical things to help us understand things [more] clearly. I learned a lot about the specific problems facing girls in our communities and how to solve some of these problems. I also enjoyed using technology to create poster on my topic. Creating the poster helped me to be specific about my ideas. You can't write too long, so your sentences have to be short and clear. [...] I was very happy that [the teacher] allowed us to take the camera

home. I was happy because it helped me to snap good pictures for my poster when I asked my friends to act for me.

The students described the English composition course as good, interesting, wonderful and enjoyable, and connected these expressions of interest to specific things they had learned about and through multimodal composing. For instance, Ato connected his expression of interest to the ways the multimodal activities helped students to stay focused in class and contribute to their own learning: “everybody is focusing ... Everybody pays attention ... classmates are able to contribute in [to] the lessons ... people share their ideas with the class” (see Excerpt 5.13A). For Effie, she was “very happy” that she could choose her “own topic that can really transform many communities” (Excerpt 5.13B) By making this statement, she connects her expression of interest to her meaning making process and to how the development and communication of her ideas (developing topic knowledge) can result in social change (Kress, 2010). Finally, Ama found the course to be interesting because of the opportunity to write multiple drafts of her expository text and to engage in practical, hands-on activities that helped her understand how to compose different multimodal texts. In particular, she expresses interest in how the creation of her poster helped her to state her ideas with precision and clarity: “Creating the poster helped me to be specific about my ideas. You can’t write too long, so your sentences have to be short and clear” (Excerpt 5.13C).

The writers’ expressions of interest corroborate my own observations (recorded in my Researcher’s Journal) about their enthusiasm and involvement in the multimodal composing activities. Throughout the term, I observed how the students maintained a high level of interest in the multimodal composing experience, amid

tensions and contradictions (see analysis in chapter four). As described in chapter four, it was particularly encouraging to observe the students' sense of ownership of the composing space and the composing activities, as well as their involvement and interest in creating a collaborative and supportive classroom community. For instance, the students took the initiative to help to set up the computer lab for the classes every time. Their roles included booting and shutting down computers, putting the learning space in order, such as arranging chairs, opening and closing louvers.

At the early stages of the composing experience, such level of interest could be explained in light of the very nature of the activities: a new composing experience, frequent use of digital tools, opportunities to compose at different sites and to collaborate with peers – all of these could have contributed to the excitement. Alexander (2003, 2005) describes this as situational interest. However, with time, the writers' interest became more personal, particularly when they began their individual poster creation project (i.e., Phase II of the Transforming People and Communities Project; see chapters three and four for detailed description and analysis). At this level, their interest was not only in the use of technology, but in how the different technologies and multimodal activities created opportunities for them to address issues that were of interest to them and their communities.

For the writers in this research, their interest in the multimodal composing activities helped them to give their readers (audience) specific and concrete views of their communities through the lens of the camera. The decisions the writers took about their pictures (and about how these pictures were combined with language) indicated a kind of reconstruction of community life, or a form of an exposé of what

constituted relevant information about the social and cultural issues the writers wanted to address. What the writers presented was their “take” on (or their interest in) the problems that affected (and continue to affect) their communities, reflecting the interest they had in those specific issues and at those specific moments of composing. Alexander (2003, 2005) describes this as individual interest. At this stage, the writers relied less on what the composing environment offered by way of sustaining their interest, and more on what they could offer by way of transforming people and communities. Their interest had shifted from what they were receiving to what they were giving.

I have, to this point, focused on the qualitative analysis of data from three adolescent L2 writers (Ato, Effie and Ama), using a developmental case study approach (Brown & Rodgers, 2002; Cooper, 2006; Yin, 2009) and multimodal social semiotics perspective (Norris, 2011; Royce, 2002; Stein, 2008) in order to examine, in depth, the development of their L2 writing and multimodal competence. I have also used Criterion to qualitatively analyze the development and organization of ideas in the writers’ word-based expository texts. Following this, I have focused on how the adolescent L2 writers developed understanding about multimodal composing, paying particular attention to developing intellectual tools (Engeström, 1999), strategic competence (Alexander, 2003) and interest (Alexander 2005; Kress, 2010) in multimodal composing and cultural issues. In the next section I focus on a quantitative analysis of the exit survey and scores on the initial and final drafts of the writers expository texts. The quantitative analysis will be used to support the qualitative findings.

QUANTITATIVE ANALYSIS

Results from Exit Survey

Findings from the quantitative analysis of the exit survey give a general overview of what the adolescent L2 writers in JHS2 thought about the progress they had made over time regarding the development of multimodal and writing competence. In order to support the qualitative analysis, the survey items elicited information on three major areas of transformation, including:

1. Transformations in writers' technical knowledge (Hubbard, 2004) about multimodal composing (see items 1 to 8);
2. Transformations in topic knowledge (Alexander, 1997, 2003), that is, in the writers' understanding of social and cultural issues (see items 9 to 17); and
3. Transformations in the development of intellectual tools (Engeström, 1997) and strategic competence (Alexander, 1997, 2003) about multimodal composing (see items 18 to 22).
4. Transformations in the development of interest (Alexander, 1997, 2003; Kress, 2010) in multimodal composing

Developing technical knowledge about multimodal composing

Table 17

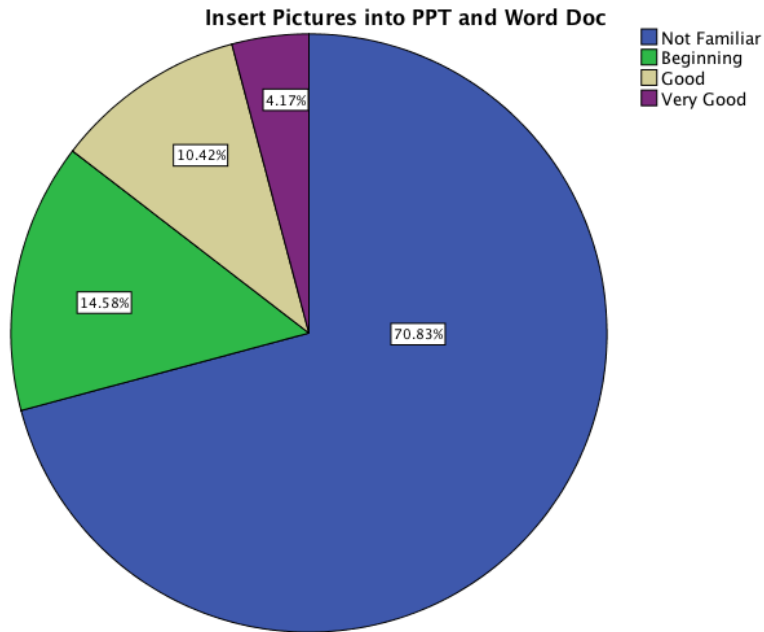
Frequency and Percentage of Students' Development of Technical Knowledge about Multimodal Composing

(N=46)		1	2	3	4
		Strongly Agree	Agree	Disagree	Strongly Disagree
#	Item	% (f)	% (f)	% (f)	% (f)
1	I learned a lot about taking pictures with digital camera to enable me help others do the same.	65.2 (30)	26.1 (12)	8.7 (4)	0
2	I learned a lot about editing and organizing pictures to enable me help others do the same.	30.4 (14)	45.7 (21)	19.6 (9)	4.3 (2)
3	I learned a lot about inserting pictures into PowerPoint and word documents to enable me help others do the same.	58.7 (27)	32.6 (15)	8.7 (4)	0
4	I acquired sufficient skills in creating PowerPoint and posters and could help others do the same.	52.2 (24)	41.3 (19)	2.2 (1)	4.3 (2)
5	I acquired sufficient skills in creating PowerPoint and posters but could not help others do the same.	6.5 (3)	6.5 (3)	34.8 (16)	52.2 (24)
6	I acquired sufficient skills in organizing main and supportive ideas in my essay and could help others do the same.	63.0 (29)	30.4 (14)	6.5 (3)	0
7	I acquired sufficient skills in organizing main and supportive ideas in my essay but could not help others do the same.	0	6.5 (3)	34.8 (16)	58.7 (27)
8	It was difficult for me to present my ideas to my classmates and other people during the poster presentation.	6.5 (3)	28.3 (13)	39.1 (18)	26.1 (12)

The quantitative analysis of the exit survey indicated that there were transformations in the ways the writers used digital tools (computers and digital cameras) to compose multimodal texts (Table 17). This relates to the development of technical knowledge about multimodal composing (Bearne, 2009; Bearne & Wolstencroft, 2007; Hubbard, 2004). The knowledge referenced here include learning to take pictures with digital camera, editing and organizing pictures, integrating pictures into PowerPoint and word documents to create multimodal texts, creating and presenting posters, and

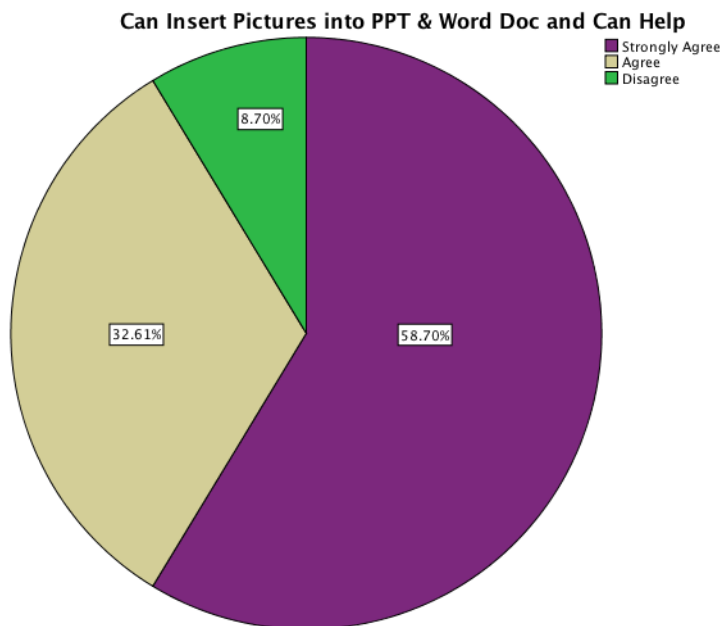
learning to develop and organize main and supporting ideas in expository texts. The writers' responses to items 1 to 8 suggest that the majority of the writers made significant progress in developing technical knowledge about multimodal composing. For instance, about 90% of the writers reported that they had developed sufficient skills in taking pictures with a digital camera (item 1), integrating pictures and words to create PowerPoints and posters (see items 3, 4 and 5) and in organizing ideas in their expository texts (items 6 and 7).

The results from the exit survey were compared with students' responses from the initial survey in order to understand the progress they had made regarding using different digital tools to compose multimodal texts. Figures 20 & 21 and 22 & 23 give a graphic representation of a comparison between two inter-related skill areas: inserting pictures into PowerPoint and word documents and creating and using PowerPoints and posters. In both instances, the level of reported multimodal competence is higher in the exit survey.



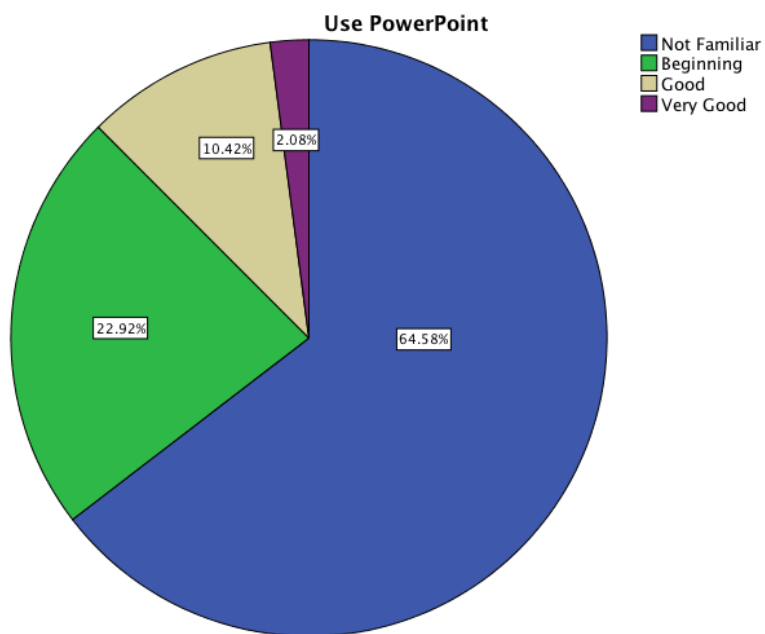
Initial survey (N=48)
 Writers reported having limited exposure to integrating pictures into PowerPoint and word documents. (Level of reported multimodal competence is very low)
Very Good (i.e., I have sufficient skill to help others with this); Good (I have enough skill to do this on my own, but can't help others); Beginning (I have just been introduced to this skill) Not familiar (I have no experience using this skill)

Figure 20. Inserting pictures into documents - Initial survey



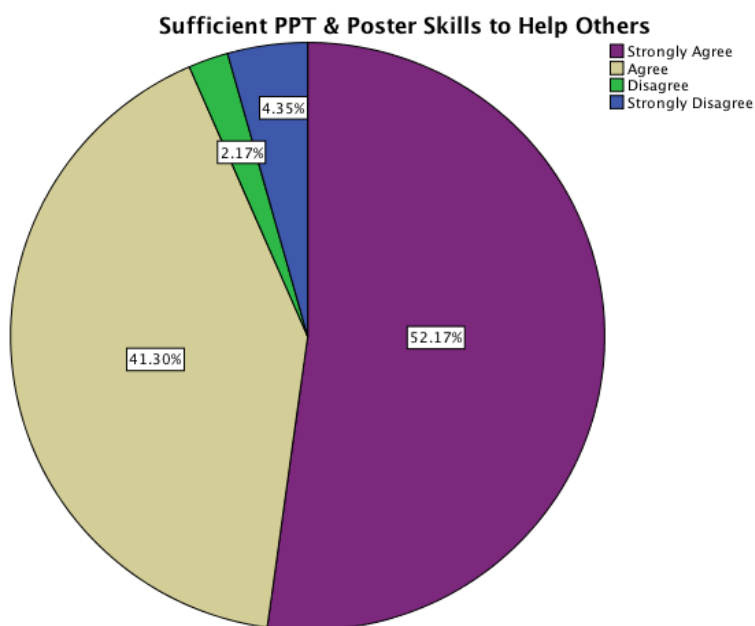
Exit survey (N=46)
 The majority of writers agreed they had developed sufficient skills in integrating pictures into PowerPoint and word documents. (Level of reported multimodal competence is high)

Figure 21. Inserting pictures into documents - Exit survey



Initial survey ($N=48$)
 Writers reported having limited exposure to creating PowerPoints and posters (Level of reported multimodal competence is very low)

Figure 22. PowerPoint and poster skills - Initial survey



Exit survey ($N=46$)
 Writers agreed they had developed sufficient skills in creating PowerPoints and posters. (Level of reported multimodal competence is high)

Figure 23. PowerPoint and poster skills - Exit survey

In general, the results from the initial survey showed that majority of the students had limited exposure to digital-based multimodal composing: More than eighty percent of the students indicated that they had limited exposure to seven out of the ten skills mentioned on the initial survey (see details of results from question 1a-ii in chapter 4). On the other hand, the results from the exit survey as reported above in Table 5.8 (and demonstrated in the actual composing process and texts from the three case studies) suggest a significant improvement in the writers' digital-based multimodal composing skills.

Developing topic knowledge through multimodal composing

Table 18

Percentage and Frequency of Students' Development of Topic Knowledge

(N=46)		1	2	3	4
		Strongly Agree	Agree	Disagree	Strongly Disagree
#	Item	% (f)	% (f)	% (f)	% (f)
9	The topic I chose and wrote about in English composition class was important to my life and my community.	73.9 (34)	23.9 (11)	2.2 (1)	0
10	Focusing on real issues in our communities made me enjoy writing my essay.	63 (29)	37 (17)	0	0
11	I learned new things about my topic and community that I did not know before.	37 (17)	56.5 (26)	2.2 (1)	4.3 (2)
12	I learned a lot about my topic to enable me explain it very well to others.	71.7 (33)	28.3 (13)	0	0
13	Using photographs helped me to develop new ideas for my essay.	78.3 (36)	21.7 (10)	0	0
14	The pictures I took helped me to think more deeply about my topic.	63.0 (29)	32.6 (15)	4.3 (2)	0
15	The questions my friends asked me during the poster presentation helped me to explain my ideas more clearly.	41.3 (19)	58.7 (27)	0	0
16	I learned a lot of new things about our communities through other students' posters.	47.8 (22)	47.8 (22)	2.2 (1)	2.2 (1)
17	Writing my essay several times helped me to improve on my ideas in very significant ways.	71.7 (33)	23.3 (13)	0	0

Topic knowledge pertains to individuals' understanding of the particular topic about which they are writing (Alexander, 2003). In Halliday's (1985) term, this is referred to as ideational meaning; that is, meaning in relation to the logical representation of content or ideas. In this research, topic knowledge refers to the adolescent L2 writers' understanding of the specific social and cultural issues they chose to write about. It is about the different ways the individual writers developed, organized and represented their ideas.

Items 9 to 17 on the exit survey (see Table 18) were constructed to elicit information about the adolescent L2 writers' understanding of how they developed topic knowledge. The majority of the writers (i.e., over 90%) indicated that they found their topics to be relevant to their lives and communities (items 9 & 10), and that the multimodal activities they engaged in helped them to think about and develop their ideas. These activities included taking photographs (items 13 & 14), creating and presenting posters (items 15 & 16), and writing multiple drafts of their expository texts (item 17). Responses to items 11 and 12 also indicate that the majority of the writers felt they learned a lot of new things about their topics and communities through their multimodal composing activities.

Developing strategic competence about multimodal composing

Table 19

Percentage and Frequency of Students' Development of Strategic Competence

(N=46)		1	2	3	4
		Strongly Agree	Agree	Disagree	Strongly Disagree
#	Item	% (f)	% (f)	% (f)	% (f)
18	I combined words and pictures in my poster to help the readers understand my ideas more clearly.	78.3 (36)	19.6 (9)	2.2 (1)	0
19	In creating the poster, I chose words that would help my readers understand my ideas.	65.2 (30)	32.6 (15)	2.2 (1)	0
20	I mostly paid attention to grammar, spelling and punctuation when I revised my essay.	50 (23)	50 (23)	0	0
21	In my revision, I focused on how to develop my ideas and make them clear to my audience.	67.4 (31)	30.4 (14)	2.2 (1)	0
22	The comments I received from the instructor helped me to make changes that made the ideas in my poster and essay much clearer.	73.9 (34)	26.1 (12)	0	0

Strategies are the intentional, purposeful, and effortful procedures used to deal with domain-specific or topic-specific problems or for a more general concern, such as composing an extended, reasoned text that is supported by evidence and details (Wong Fillmore & Snow, 1999) or purposefully combining language and images to compose multimodal texts (Bearne & Wolstencroft, 2007). Alexander (2003) explains that strategies can be directed toward making sense of or managing the elements of a problem at hand (e.g., attending to specific lexical items or mechanics in writing; *surface-level strategies*). On the other hand, efforts can be focused on delving deeply into, transforming, or critiquing the given problem (e.g., questioning the author, evidence-seeking, or re-representing the text; or revising a text to enhance meaning; *deep-processing strategies*).

Items 18 to 22 on the exit survey (Table 19) focused on eliciting information on the writers' development of strategic competence about multimodal composing and the writing of expository texts. Most of the writers indicated that they selected and combined words and pictures in their posters to help their readers understand the ideas the writers wanted to communicate (items 18 & 19). The responses of the adolescent L2 writers also indicated that they employed both surface-level and deep-processing strategies, and that they made changes in their texts to enhance the meanings they wanted to communicate (items 20, 21 & 21). (Also, see analysis of the writers' texts in the case studies as well as the guided reflections about their multimodal composing).

Developing interest in multimodal composing

Table 20

Percentage and Frequency of Students' Development of Interest in Multimodal Composing

(N=46)		1	2	3	4
		Strongly Agree	Agree	Disagree	Strongly Disagree
#	Item	% (f)	% (f)	% (f)	% (f)
23	I have always enjoyed studying English	67.4 (31)	30.4 (14)	2.2 (1)	0
24	English is a very difficult subject for me.	2.2 (1)	6.5 (3)	41.3 (19)	50 (23)
25	I found last term's English composition class enjoyable	76.1 (35)	23.9 (11)	0	0
26	I was actually happy going to English composition class last term.	58.7 (27)	39.1 (18)	2.2 (1)	0
27	Our last term's English composition class was boring.	0	0	19.6 (9)	80.4 (37)
28	Using computers in last term's English composition class was helpful.	54.3 (25)	39.1 (18)	6.5 (3)	0
29	I would like to continue learning more about the creation and presentation of posters	60.9 (28)	32.6 (15)	4.3 (2)	2.2 (1)
30	Based on my experience, I will encourage every student to learn how to combine pictures and words to communicate ideas.	73.9 (34)	26.1 (12)	0	0

The final eight items on the exit survey (18 to 22; Table 20) focused on eliciting information on the writers' development of interest about multimodal composing in an English L2 writing course. Overall, the students found the class to be interesting. For instance, all the students indicated that they found the term's English composition class enjoyable; none of them thought the class was boring (items 25 & 27). The majority of the students (about 93%) also indicated that they would like to continue learning more about creating and presenting posters (item 29). Finally, based on their own experiences, all the students said they would encourage others students learn how to combine pictures and words to communicate ideas (item 30).

All these findings are consistent with and support the qualitative findings about the writers' development of intellectual tools, topic knowledge, strategic competence, and interest in multimodal composing. Next, I focus on the quantitative analysis of students' expository texts.

Quantitative Analysis of Scores for Initial and Final Drafts of Expository Texts

The students ($N = 48$) focused on expository writing as part of their multimodal composing activities. The first draft was written at the beginning of the poster creation activity. The writers then revised their first draft (and subsequent drafts) of their word-based expository text, drawing on ideas from their poster to help them develop and organize the ideas in their expository text. In particular, students used the ideas expressed in their poster as topic sentences and main ideas in their expository texts.

Two independent raters (an English composition teacher in the school and a graduate student with a degree in English education) were trained to score the initial and final drafts of students' expository texts, using a criterion-referenced rubric – that is, the ESL composition profile or scale (Jacobs, Zingraf, Wormuth, Hartfiel, & Hughey, 1981). The ESL composition profile has been extensively piloted and revised, and is one of the most widely used analytic scales in recent English L2 writing research (e.g., Cumming, 1997; Kroll, 1998; Polio, 2001; Tsang, 1996; see also Weigle, 2002). Traits addressed on the profile include the development of relevant content, organization, vocabulary, language use, and mechanics.

For this research, an inter-rater reliability analysis using the Kappa statistic was performed on SPSS to determine consistency between the two raters. The inter-rater reliability was .76 ($p < .001$) for the first draft, and .87 ($p < .001$) for the final draft.

A paired-samples t-test was conducted (using *SPSS Paired-Samples T Test* procedure) to compare the means of the initial and final drafts of students' expository texts ($N = 48$). There was a significant difference in the scores for the initial draft ($M = 54.91$, $SD = 7.55$) and final draft ($M = 62.01$, $SD = 8.44$; $t_{(47)} = -.13$, $p < .001$).

These results suggest that the overall quality of the students' essays improved over time and after multiple revisions of their drafts, drawing on ideas from their multimodal texts (posters and poster presentations). (See Appendix G for the full SPSS run of the quantitative data: frequency table, inter rater reliability and paired-sample t-test)

Table 5.12 presents the total and average scores for the initial and final drafts of the three focal students (Ato, Effie and Ama). These results give an overview of the progress each of them made in relation to the whole class. Ato's average score for the initial draft (based on scores from the two raters) was far below the class Mean; his average score on the final draft, however, was slightly above the Mean. Effie and Ama scored above the Mean in both the initial and final drafts. These findings are consistent with and support the qualitative analysis of their expository text through Criterion.

Table 21. Comparing Focal Students' Average Scores with the Mean

Students	Initial Draft			Final Draft		
	Rater 1	Rater 2	Average	Rater 1	Rater 2	Average
Ato	46	44	45	62	64	63
Effie	75	73	74	86	87	86.5
Ama	61	61	61	68	67	67.5
($N = 48$)	$(M = 54.91, SD = 7.55)$			$(M = 62.01, SD = 8.44)$		

Summarizing Qualitative and Quantitative Findings

In this chapter, I have used qualitative and quantitative methodologies to analyze data relating to how the adolescent English L2 writers' engagement in multimodal activities influenced the development of their multimodal and writing competence. The qualitative analysis involved an in depth examination of three adolescent L2 writers' multimodal and expository texts, using a developmental case study approach (Brown & Rodgers, 2002; Cooper, 2006; Yin, 2009) and a multimodal social semiotics perspective (Halliday, 1978; Kress, 2009; Royce, 2002; Stein, 2008). To support the qualitative analysis and findings, the exit survey ($N = 46$) and the scores on the initial and final drafts of the writers' expository texts ($N = 48$) were quantitatively analyzed. I conclude this chapter by summarizing the findings from the qualitative and quantitative analyses.

First, the analysis of students' guided reflections showed that significant transformations also occurred in the way students made decisions about selecting content and integrating modes in their texts to meet specific purposes and communicate specific meanings to their audience. The writers also demonstrated competence in the way they explained the choices they made. These transformations relate to the notion of developing "new intellectual tools" (Engeström, 1999, p. 31) and strategic competence (Alexander, 1997, 2003) about multimodal composing.

Second, the analysis of the content of the writers' texts across multiple modes (language and images) and text forms (posters, poster presentations and expository writing) show a variation and range of meanings in the writers' texts, demonstrating

how the different modes and text forms offered the writers different opportunities (affordances) and/or constraints for making meaning.

Third, the qualitative and semiotic analysis of the writers' texts indicated that the different texts the writers composed through their multimodal activities (word-based expository texts, poster and poster presentation) did not stand in isolation from each other. Rather, these text forms came together to help readers and viewers to fully appreciate the meanings the writers tried to communicate. Looked at together, the different texts provide a richer understanding of the writer's meanings than each of the texts in isolation.

Fourth, the social semiotic analysis indicated that there were transformations in students' understanding of the social and cultural issues they wrote and talked about. These findings related to how the writers developed topic knowledge (Alexander, 1997, 2003) and the ways they constructed ideational meanings (Halliday, 1978). The decisions the writers took about language and visual imagery also indicated an effort at reconstructing community life, relating social and cultural issues in their communities to global events and discussions.

Fifth, the qualitative analysis of the multiple drafts of the writers' (word-based) expository texts, using Criterion, indicated that the multimodal activities helped the writers to improve the organization and development of their ideas and the overall quality of their paper. The quantitative analysis of the students' initial and final drafts, based on average of scores from two independent raters (using the ESL composition profile – Jacobs, et al, 1981; Weigle, 2002), also indicated that the over

all quality of the writers' expository texts improved over time and after multiple revisions of their drafts.

Sixth, quantitative analysis of the exit survey indicated that there were transformations in the ways students used digital tools (computers and digital cameras) to compose multimodal texts. This relates to the development of technical knowledge (Bearne, 2009; Bearne & Wolstencroft, 2007; Hubbard, 2004) about multimodal composing. On the whole, the results from the exit survey suggest a significant improvement in the writers' digital-based multimodal composing skills, compared with students' responses from the initial survey administered at the beginning of the English composition course. The findings from the quantitative analysis also supported the qualitative results regarding how students developed topic knowledge (understanding social and cultural issues) and intellectual tools/ strategic competence about composing multimodal texts.

These findings indicate that the students have made significant progress about multimodal composing. Using Bearne and Wolstencroft's (2007) descriptors, the students can generally be said to have progressed from being multimodal text makers in the early stages to becoming increasingly assured (or more competent) multimodal text makers who are growing in experience. In this sense, then, their journey toward competence can be said to be unfolding, rather than complete.

It is also important to highlight the fact that the paths toward competence were not the same. The students tapped into their unique potentials to help them overcome their initial challenges and to grow toward competence. For instance, Ato's journey toward becoming increasingly assured multimodal text maker and a more competent

writer was primarily driven by the one-on-one instructional support he received and his own increasing interest in multimodal composing. As mentioned in his “portrait” (pp. 194- 195), Ato entered the course with daunting challenges (very low score on initial writing assignment and limited exposure to digital-based multimodal composing) but he was willing to learn. The turning point came when I offered written feedback on his writing and had the opportunity to sit with him to discuss how he would revise his expository text. Once Ato found a listening ear, his enthusiasm heightened. He took personal interest in his writing, revised his text more than most people in the class and was always among the first to complete his multimodal composing activities and help others with their work.

Effie’s growth, on the other hand, was mainly knowledge-driven. She came into the course with strong writing capabilities and a fairly good exposure to digital-based multimodal composing. These qualities became for her the foundation she needed to help her surge forward as a good multimodal communicator and a convincing writer. Also important was the encouragement she received from her friends and the instructor:

I received encouragement from my friends and teacher. They convinced me and told me that my poster would improve the community I live in and even the whole world. So I put in more effort in order to help me improve my country. (Effie, Excerpt from Guided Reflection, June 2011;

See her “Portrait” on pp. 210-211)

Finally, Ama’s journey toward becoming a more competent multimodal text maker was propelled by her creative ability as a writer and communicator. These qualities

helped her to reconstruct social issues through dramatization, thereby creatively integrating narrative and expository texts. She also acknowledged that her journey toward competence was also made possible through the support from and collaboration with several individuals, including her mother and friends (See her “Portrait” on p. 226).

In short, the findings relating to the overarching case of the JHS classroom give a bigger picture of the adolescent L2 writers’ movement toward becoming more competent multimodal meaning makers. However, a closer look at the embedded cases (three focal students) indicates that each student followed a different path toward competence. The implications of these findings are discussed in chapter six.

CHAPTER 6: DISCUSSION AND IMPLICATIONS

Introduction

In this chapter, I summarize and synthesize the main findings of the study. Following this, I discuss the theoretical and pedagogical implications of these findings for teaching and researching multimodal composing and adolescent L2 writing and highlight the contributions this study makes to L2 writing education and associated fields of study (including TESOL, Applied Linguistics and second language education). Recommendations for future research are also presented. The chapter ends with a personal reflection on the adolescent L2 writers' achievements.

Synthesis and Discussion of Main Findings

The main findings of the study are organized around five major points, which are thematically presented and discussed below. The purpose for summarizing and synthesizing the findings under into these major points is to present the “big picture” of what this research is all about. The following are the five major points:

1. Mediated authorship and the complexity of multimodal composing process
2. Developing new intellectual tools, strategic competence and technical knowledge
3. Improving the quality of expository texts through multimodal activities
4. Developing topic knowledge through multiple modes and text forms
5. Developing interest and reconstructing social and cultural meanings

These major points are derived from the analysis of data and presentation of findings in chapters four and five of this study.

On mediated authorship and the complexity of multimodal composing process

The first major finding relates to the writers' multimodal composing process and mediated authorship. Mediated authorship refers to how writers' composing (both the process and the texts produced) is influenced by and emerge from their interactions with persons and use of different cultural and technological artifacts in their sociocultural environments (Prior, 1998; Wertsch, 1991).

A description of how the object of activity (i.e., multimodal composing) expanded within the activity system of the JHS2 classroom showed that the students' multimodal composing unfolded in phases (group PowerPoint presentation project and individual poster presentation project) and involved several interconnected microprocesses (Leont'Ve, 1978; Ludvigsen & Digernes, 2009). The processes involved in the group PowerPoint project included generating ideas through brainstorming activity, composing expository texts, creating PowerPoint slides and presenting ideas to their classmates using PowerPoints. In phase two (the individual poster creation and presentation), students engaged in photo elicitation activity, composition of expository texts, multiple revisions of expository texts, taking of pictures, creation of posters, and presentation of posters to a larger audience.

The analysis of the different phases and processes of the adolescent writers' multimodal composing revealed that each step of the composing process contained a combination of contradictions, opportunities for resolution and achievement of intermediate goals, all of which worked together to help the writers expand their knowledge about multimodal text-making. For instance, there were moments when the initial guidelines I provided as an instructor no longer covered all aspects of the

composing process. There were new challenges that emerged as part of the composing experience, and the writers needed to be innovative and creative in formulating solutions and new rules to deal with the tensions. Once the writers realized that the guidelines no longer served their purposes, they created new rules to help them accomplish their work. Sometimes, the writers invited me (as the instructor) to intervene in helping them address specific challenges. In most cases, however, the adolescent writers took charge of their own situations and found solutions that were workable for them. By so doing, not only did the writers achieve their goal of completing specific actions, but they also “actively engaged in constructing the terms and conditions of their own learning” (Lantolf & Pavlenko, 2001, p. 146).

Additionally, the multimodal composing process involved the writers in different patterns of collaboration and cooperation in and outside the classroom. The authoring of their texts was such that it could be described as mediated and dispersed (Prior, 1998, 2006). For instance, the writers received different forms of support in and outside the classroom as they composed their texts, including support from friends, instructor, persons in community, and family members (e.g. Ama received help from her “sweet mother” as mentioned in her guided reflection). Besides, their composing process was mediated by different cultural and technological tools (e.g., traditional pen and paper, computers and cameras) and dispersed across multiple sites of composing, including the classroom, computer lab and the home/communities. It is particularly important to note how the writers selected different places for their writing at home: including their bedrooms, on verandas in front of their houses, on

sofas in their halls, at the dining table, spaces behind the kitchen, and even under trees on their compounds. As indicated in their guided reflections, the adolescent writers selected those spaces because they wanted to feel comfortable and to avoid noise, disturbance and boredom when writing.

Developing new intellectual tools, strategic competence and technical knowledge

Second, the analysis of the qualitative and quantitative data suggested that there was a significant improvement in the writers' digital-based multimodal composing skills over the course of three months (April to June, 2011). At the beginning of the multimodal composing process, the majority of the students reported having limited exposure to digital multimodal composing (see chapter 4 for findings from the initial survey administered at the beginning of the term). This changed significantly over time. The multimodal semiotic analysis of students' different texts forms (posters, poster presentations and expository texts) indicated that the writers made significant progress in the way they transformed word-based texts into multimodal texts (see analysis of the focal students' texts in chapter 5). In composing these texts, the writers made deliberate decisions about how to structure their texts, what content to include and how to combine specific modes in order to construct and communicate specific meanings to their audience. The writers also demonstrated competence in the way they explained the choices they made (see analysis of focal students' guided reflections in chapter five). The quantitative analysis of the exit survey also suggested that there was a significant improvement in the writers' digital-based multimodal composing skills (i.e., in the ways students used digital tools, such as computers and digital cameras, to compose multimodal texts). These qualitative and quantitative

findings point to the ways the writers developed new intellectual tools (Engeström, 1999, p. 31), strategic competence (Alexander, 1997, 2003) and technical knowledge (Bearne & Wolstencroft, 2007; Hubbard, 2004) about multimodal composing and expository writing.

Improving the quality of expository texts through multimodal activities

Third, the multimodal activities created opportunities for writers to revise and improve the quality of their expository texts. Analysis of the composing process (in chapters four and five) showed that the writers' expository writing was a part of the entire multimodal composing activity, the overarching goal of which was to support L2 writers to understand how different semiotic resources combine to construct, represent and communicate meaning. Each student's word-based texts, poster and poster presentation focused on the same topic and, therefore, intertwined as interdependent text forms, with each text form feeding off of the others for its development. For example, the first draft that the students wrote served as the starting point and foundation for creating their posters. Focusing on the same topic, students generated multiple ideas for their posters and expressed these ideas with precision and clarity. The writers then revised their first draft (and subsequent drafts) of their word-based expository text, drawing on ideas from their poster to help them develop and organize the ideas in their expository text. In particular, students used the ideas expressed in their poster as topic sentences and main ideas in their expository texts.

The qualitative analysis of the multiple drafts of the writers' (word-based) expository texts, using Criterion, indicated that the multimodal activities helped

the writers to improve the organization and development of their ideas and the overall quality of their paper. The quantitative analysis of the students' initial and final drafts, based on average of scores from two independent raters (using the ESL composition profile – Jacobs, et al, 1981; Weigle, 2002), also indicated that the overall quality of the writers' expository texts improved over time.

Developing topic knowledge through multiple modes and text forms

Fourth, the social semiotic analysis of the writers' multimodal and expository texts indicated that the writers developed an in-depth understanding of the social and cultural issues they wrote about. These findings related to how the writers developed topic knowledge (Alexander, 1997, 2003) and the ways they constructed ideational meanings (Halliday, 1978). Analysis of the content of the writers' texts across multiple modes (language and images), also showed how these adolescent writers constructed variation and range of meanings (Stein, 2008) in and through their text forms (posters, poster presentations and expository writing), demonstrating that the different modes and text forms offered the writers different opportunities (affordances) and/or constraints for making meaning.

Here, it is important to recall the profound understandings the students expressed about the meaning potentials and constraints of specific modes (i.e., words and pictures) at the initial stages and throughout their multimodal composing activities (see analysis of open ended questions of initial survey in chapter 4 and of guided reflections in chapter 5). In these responses, the writers' indicated what pictures and words can or cannot do and the different ways these modes combine to make meaning. For example, the writers talked about how pictures and words

combine to tell stories (narrative affordances), enhance understanding of ideas (affordances for comprehension), identify and describe persons and objects (affordance for describing identities), describe how people feel about themselves or particular situations (affordances for describing emotions) and offer explanations about specific events or situations (explanatory affordances) (see Table 8 for detailed explanations).

Analysis of the writers' multimodal texts using Royce's (2002) notion of *intersemiotic complementarity* showed that the writers made use of their funds of knowledge about the meaning potentials of modes in constructing a variation of meanings and developing ideas about their topics. For instance, the writers used *intersemiotic repetition* (i.e., the repetition of the same actions in both verbal and visual elements), *intersemiotic synonymy* (i.e., showing similarity relations between visual and lexical elements), *intersemiotic antonymy* (showing opposite relations between visual and lexical elements) and *intersemiotic MOOD* (focusing on interpersonal features of multimodal texts, showing how composers use modes to influence the attitude of their viewers and readers) in their meaning making process and in constructing their message. All these examples of intersemiotic relations (Jewith, 2009; Royce, 2002) show how different modes (e.g., language and images) and different text forms (e.g., word-based expository texts and posters) provided the writers with different opportunities for meaning making and development of ideas. For these writers, focusing on real issues in their communities helped them to connect their multimodal composing activities to issues that were relevant to them and their communities.

The quantitative analysis of the exit survey supports these findings. In their responses to items 9 to 17 on the survey (see Table 18), the majority of the writers (i.e., over 90%) indicated that they found their topics to be relevant to their lives and communities, and that the multimodal activities they engaged in helped them to think more deeply about and develop their ideas. Most of them also indicated that they learned a lot of new things about their topics and communities through their multimodal composing activities.

Developing interest and reconstructing social and cultural meanings

The fifth major finding relates to how the writers' interest in multimodal composing helped them to reconstruct social and cultural meanings about their communities. From a multimodal communication perspective, *interest* refers to individuals' 'take' on the world at a particular moment in time as shaped by their past, present and future experiences and in response to their interpretation of the immediate social context and representational need (Kress, 2009, 2010). Interest is what motivates how specific "meaning potentials are selected and orchestrated to make meaning by people in particular contexts to realize specific social meaning" (Jewitt, 2009, p. 31). Alexander (2003, 2005) also indicates that interest is not fixed; that individuals' interest in particular domain of learning or topic develops across a lifespan.

For the writers in this research, their interest in the multimodal composing activities helped them to give their readers (audience) specific and concrete views of their communities through the lens of the camera. Picture taking involves a lot of decisions, including the decision to capture (or focus on) specific aspects of the community. The decisions the writers took about their pictures (and about how these

pictures were combined with language), therefore, indicated a kind of reconstruction of community life, or a form of an exposé of what constitutes relevant information about the social and cultural issues the writers wanted to address. What the writers presented was their “take” on (or their interest in) the problems that affected (and continue to affect) their communities, reflecting the interest they had in those specific issues and at those specific moments of composing.

Also significant was the writers’ use of dramatization to reconstruct community problems and practices. For instance, Ama and Ato asked and guided friends to act out (dramatize) the community issues they wanted to bring to the attention of their audience. Ato wanted to communicate how the connection between appreciation and unity/ prosperity played out in his community. Ama wanted to address real challenges facing girls in her community. For these writers, the issues they wanted to write about were difficult to capture through the lens of the camera, and in the manner they wanted to communicate or represent these issues to their audience. They therefore took alternative approaches to obtain their information and to construct their knowledge. First, they thought of how these issues play out in real life. Second, they composed a mental script of these issues, focusing on how they wanted to communicate these ideas to the audience. Third, they asked friends to dramatize their script. Lastly, they captured scenes of these dramatizations through the lens of the camera.

These sustained efforts at reconstructing knowledge about social and cultural issues suggest that the writers had deep interest in the issues they talked about as well as in the means (i.e., the multimodal composing process) through which these issues

were addressed. What these findings seem to indicate is that, engaging in multimodal activities offered the adolescent L2 writers the opportunities to “design social futures” (New London Group, 1996). In multimodal meaning making, ‘designing’ refers to the process of shaping emergent meaning, and of transforming knowledge “by producing new constructions and representations of reality” (New London Group, 2000, p. 22). Learners are regarded as persons with the ability to transform, rather than simply repeat knowledge. In short, the multimodal activities engaged the writers’ interest (Kress, 2010), thereby helping them to become ‘designers’ of their world, able to create something new out of available resources, and to reconstruct knowledge about social and cultural issues.

In sum, these five major findings show that the adolescent L2 writers engaged in mediated, distributed and complex multimodal activities, which created opportunities for developing new intellectual tools, strategic competence, and technical knowledge about multimodal composing. The multimodal composing experience also allowed writers to address real social and cultural issues that were of interest to them and their communities, develop an in-depth understanding of these topics, and to reconstruct variant and range of meanings about these social and cultural issues. Finally, the findings suggest that the multimodal activities created opportunities for writers to revise and improve the quality of their expository texts.

What implications do these findings have for learning, teaching and researching multimodal composing and adolescent L2 writing? What contributions does this study make to the field of L2 writing and associated fields of study, based

on these major findings and on the study's conceptual and analytic frameworks? The next section is dedicated to responding to these questions.

Contribution to the Field & Implications for Pedagogy and Research

Drawing from the major findings as well as the conceptual and analytic frameworks of this study, I highlight the contribution this study makes to the field of L2 writing education and associated fields of study, including Second Language Education, TESOL, and Applied Linguistics. I also discuss implications of these findings for teaching and researching multimodal composing and adolescent L2 writing.

Contribution to the Field

Broadening the scope of L2 writing research and pedagogy

This study makes significant contributions to the field of English L2 writing. In the first place, by placing multimodality at the center (and not on the fringes) of adolescent English L2 writing pedagogy and research, the study contributes to broadening the scope of the field of English L2 writing as an interdisciplinary field of research (Hyland, 2009; Matsuda & Silva, 2005; Prior, 1998). This contribution is particularly important, considering the dearth of research on multimodality and adolescent English L2 writing competence, as pointed out by many scholars in the field (e.g., Enright & Ortmeier-Hooper, 2011; Harklau & Pinnow, 2009; Leki, Cumming & Silva, 2008; Royce, 2002).

Most of the empirical studies that have used multimodality as a framework for teaching and learning English language have focused mainly on how the use of different modes give students the opportunity to express themselves in ways that are

not possible with the use of language alone and on how the adoption of multimodal pedagogies can enhance students' engagement in school literacies (e.g. Archer, 2007; Kendrick, Jones, Mutonyi & Norton, 2007; Newfield & Maungedzo, 2007; Nyirahuku & Hoeing, 2007; Stein, 2008). However, most of these studies fail, to a large extent, to address the question of multimodal and writing competence, and to show how learners can be assisted to expand their enthusiasm in multimodal activities to include gaining access to forms of literacies that they are still required to develop in order to succeed academically. This empirical study adds new insights to the existing literature by examining the connection between multimodality, English L2 writing pedagogy and the development of adolescent English L2 writers' multimodal and writing competence.

Providing empirical evidence for how multimodality plays out in L2 writing contexts

Another contribution this study makes is in relation to its focus on adolescent English L2 learners' development of writing and multimodal competence. By focusing on this dual faced competence, not only does this research help to expand the definition of adolescent English L2 writing competence beyond word-based composing, but it also provides an empirical evidence of how this reconceptualization can play out in a concrete adolescent English L2 writing classroom. Teachers who are interested in using a multimodal approach to teaching adolescent L2 writing can adopt or modify the multimodal pedagogy designed for and enacted in this study to respond to the particular needs of their students.

Using multiple theoretical perspectives to examine transformations in students' writing

Finally, this study makes a methodological contribution to L2 writing research by bringing together multiple theoretical and interdisciplinary perspectives to examine transformations in students' multimodal composing and analyzing the adolescent writers' different texts forms (i.e., expository texts, posters and poster presentations). Because this research problem is situated at the intersection of distinct research fields and theories, no single perspective was adequate to examine or explain how adolescent L2 writers develop writing competence through multimodal activities. To my knowledge, this is one of the first studies that brings together the frameworks of activity theory (Engeström, 1999), the Model of Domain Learning (Alexander, 2003), multimodal social semiotics (Halliday, 1978; Jewitt, 2009; Kress, 2010; Royce, 2002; Stein, 2008), and multimodal interaction analysis (Baldry & Thibault, 2005; Norris, 2011) in order to identify specific stages and traits of L2 learners' development of multimodal and writing competence and to analyze the variation and range of meanings writers make through their multimodal texts. By bringing together these perspectives, this study offers the field a new framework for examining transformations in students' understanding of multimodal meaning making.

Implications for Teachers and Teacher Educators

Acquiring more than print-based literacy skills

This study found that, given the opportunity, the adolescent L2 writers developed more than print-based literacy skills. Through the multimodal activities, the L2

writers in this study also acquired digital-based literacy skills, which allowed them to compose different text forms (including PowerPoints and posters), construct variation of meanings and communicated these meanings with audiences in and outside the classroom; meanings that were meant to help transform people and communities. In light of this finding, teachers of adolescent L2 writers can help their students to compose life changing messages by taking advantage of the way in which new technologies and digital tools enable us to mesh different modalities into single and multiple print and digital texts, and to share these texts with people all over the world. Second language writing educators can also make digital-based multimodal composing an integral part of their programs in order to better prepare teachers who are able to meet the needs of writers in the 21st century.

Understanding intersemiotic meaning making

My study has also found that adolescent L2 writers gain tremendously by understanding how (oral and written) language combines with other modes to make meaning. Yet, it was not until a teacher provided instructional and technological support were the students able to tap into their own potentials to develop multimodal and L2 writing competence. Therefore, teachers need to think seriously about what pedagogical and technological knowledge is needed in specific L2 learning contexts to help students develop understanding about multimodal composing.

Emphasizing the development of academic language

Again, this study offers new insight and ways to think about how L2 teachers can develop students' "academic language" (Cummins, 2003; Wong Fillmore & Snow, 2000) by helping students draw on ideas from their multimodal texts to revise their word-based expository texts and other genres of writing. This suggests that efforts aimed at developing multimodal competence in relation to L2 literacy need to highlight how a multimodal approach might influence L2 learners' acquisition and use of language, as well as how language combines with other modes in the meaning-making process. Such efforts may also highlight how instructors design pedagogies and provide feedback to help students develop academic language. For instance, the multimodal pedagogy designed for this study created opportunities for students to improve their word-based writing. The writers' expository writing was a part of the entire multimodal composing activity, the overarching goal of which was to support L2 writers to understand how different semiotic resources combine to construct, represent and communicate meaning.

As part of the efforts aimed at helping students improve their academic language, I provided written feedback on all the early drafts of the students' essays to help them revise their work. My feedback focused on helping students develop and organize their ideas into meaningful expository texts. I also provided feedback on grammar, language use and mechanics in order to help students improve the overall quality of their texts and use of academic language (also see chapter three for a description of the use of feedback as an integral part of the multimodal composing

pedagogy). The use of feedback as an instructional strategy to help students improve their academic language will be further explored in future research.

Practical and conceptual implications

Furthermore, as the findings suggest, this study has attended to more than written text, and has shown how students' multimodal references can improve their word-based texts. This decision to focus on the development of students' word-based writing competence has further practical and conceptual implications. Practically, word-based texts continue to play important roles in students' lives and learning and are still the major means of assessment of learning in the school context.

Conceptually, a multimodal approach to teaching and learning L2 writing need to include the development of word-based composing skills, if such an approach is to be considered expansive or transformative. As Engeström, Pounti and Seppanen (2003) explain, learning is said to be expansive when its object of activity is retained and transcended. The multimodal composing approach used in this research can be described as expansive because it retains, builds on, improves and transcends students' word-based writing competence. In light of these implications, teachers, researchers and teacher educators can think deeply about designing multimodal pedagogies that build on students' existing knowledge about (word-based) writing and at the same time help them to expand their understanding of writing to include what multimodal composing can offer in terms of meaning making.

Capitalizing on differentiation as a means for growth

The findings relating to the overarching case of the JHS classroom give a bigger picture of the adolescent L2 writers' movement toward becoming more competent multimodal meaning makers. However, a closer look at the cases of the embedded focal students indicates that each student followed a different path toward competence (see pp. 273 to 275 above for detailed discussion). Teachers helping adolescent L2 writers become competent multimodal text makers can keep track of the general overview of the progress a group of students might be expected to make over a period of time. However, it might also be helpful to keep record of each student's progress. This may help teachers make informed decision about differentiating instruction and facilitating learners' growth by encouraging them to tap into their capabilities (including their funds of knowledge, creativity and interest) as well as draw on different forms of support and collaboration available to them.

Multimodal pedagogy and development of future literacy

Finally, by creating opportunities for the adolescent L2 writers to use different technological tools and to draw on their funds of knowledge, interest, creativity, and different support systems (including support from the instructor, peers and family members), the multimodal pedagogy designed for this research opened new avenues for student engagement and future literacy development. Multimodal pedagogies aimed at developing multimodal and writing competence can be formulated as a project based activity in which students are encouraged to (a) explore social and cultural issues affecting society; (b) engage in constructing a variation of meanings

through creating different text forms (e.g., word-based expository texts, PowerPoints, posters and poster presentations); (c) have the opportunity to critically reflect on their choices for multimodal meaning making; and (d) revise their writing drawing on ideas from their multimodal texts and feedback from their instructors and peers (See chapters three and four for detailed description and analysis of the multimodal pedagogy designed for this study). Incorporating such elements into a multimodal pedagogy can help adolescent L2 writers transfer their meaning making practice into other contexts of learning (Cole & Kalantzis, 2007), taking into consideration the specific opportunities and constraints inherent in the different contexts (such as learning objectives, class size and available resources). How (and the extent to which) such transfers can occur will be explored in a future research.

Future Research

Examining multimodal pedagogies and social justice issues

In this research, I have focused on how multimodal composing activities created opportunities for adolescent L2 writers to address social and cultural issues affecting people in their communities and to speak to the kinds of changes that they expect to take place in their communities. Future research is needed to examine how implementing multimodal pedagogies in the English classroom may impact educational equity and social justice by creating more democratic and inclusive spaces in which marginalized students' histories, languages, cultures and identities are made visible (Archer, 2007; Stein & Newfield, 2007; Stein, 2008).

Expanding the scope of application

In analyzing students' expository texts, I have focused particularly on how their multimodal activities helped them to revise and improve the development and organization of ideas. Although other aspects of writing skills are mentioned (including grammatical accuracy, choice and use of vocabulary, punctuation and spelling), further research is needed to understand how a multimodal approach to writing might actually influence the development of these other specific writing skills. Beyond L2 writing, research that focus on how multimodal pedagogies play out in other areas of domain learning (Alexander, 1997), such as science, history and mathematics, can help learners broaden their understanding of multimodal meaning making. This may lead to what can be described as the development of a dual faced interest: that is, interest in multimodal composing 1) as a process of making and communicating meanings and 2) as a viable strategic learning approach.

Assessment

Another area that will benefit from further research relates to the assessment of multimodal composing. Several questions come to mind: How do we (teachers and researchers) account for the complex transformations that take place during multimodal composing, but which are not necessarily reflected in the final product? Do these complexities matter or not? If these complexities matter, how do we capture and assess them without compromising institutional goals, which often focus on accountability in relation to standardized testing?

In light of the conceptual framework of this study, I formulated writing assessment procedures that focused on students' expository writing and multimodal composing. The overarching goal was to gather evidence of development toward writing and multimodal competence (i.e., how students progressed from writing predominantly word-based texts to composing multimodal texts). These formative assessment procedures were based on Weigle's (2002) recommendations for creating meaningful classroom writing assessment and Bearne and Wolstencroft's (2007) framework for describing multimodal text making. Using a formative and descriptive approach helped me to examine how the adolescent L2 writers progressed through the text-making activities, rather than focus on the end products alone. However, this is only a first step. Future research focusing on assessing multimodal composing would be useful to expand our understanding of robust assessments.

Conclusion

In my conclusion, I turn my thoughts on the adolescent L2 writers who participated in this research. I recall the many times they ran to the computer lab with excitement and the enthusiasm with which they engaged in their composing activities. I also recall how they came into the multimodal composing process with very limited understanding of how to use digital tools to actually compose different multimodal texts. For most of these writers, this was their first time creating PowerPoint slides, using digital cameras, creating posters, and presenting their thoughts/ideas to a larger audience. Yet, at the end of three months, they had accomplished so much. I focus particularly on the interest they developed in composing multimodal texts and in the

social and cultural issues they talked about; on the challenges they faced as they composed their texts; on the ways they worked to overcome these challenges; on how they developed new intellectual tools, strategic competence and technical knowledge about multimodal composing; and on the pride they took in their accomplishments.

I take as much interest in their work! Their achievements within a three-month period convince me that, given the opportunity, adolescent English L2 writers in Ghana can discover their voice and, through composing different multimodal texts, become active constructors of knowledge and agents of change in their communities and beyond. It is my hope, therefore, that the results of this study will introduce a new perspective into L2 writing education in Ghana and to adolescent English education around the globe, particularly addressing and helping strengthen the ways adolescents use different technologies to compose multimodal texts and improve their writing competence.

Appendices

Appendix A: Initial Survey Protocol

This questionnaire is aimed at gathering information on the experiences you have in using technology to compose different texts (particularly texts that combine words and images). This information is to help us pay attention to the strengths you bring to this course, as well as the challenges and areas you might need a lot of help. In this way, we can design/modify the syllabus to respond to your needs. Any information given is solely for academic purposes and will be treated with confidentiality. I (Anthony Adawu) encourage you to ask me any questions you may have regarding this survey and the research in general.

A/ Personal data and Language background

1. Gender: Male ☐ Female ☐

2. Age: 12-14 ☐ 15-17 ☐

3. What is your first language (mother tongue)? _____

4. How often do you read materials written in your first language? Please tick (✓) one of the responses.

____ Very often ____ Occasionally
____ Very rarely ____ Not at all

5. How often do you write in your first language? Please tick (✓) one of the responses.

____ Very often ____ Occasionally
____ Very rarely ____ Not at all

6. Do you prefer reading words or pictures? Why?

7. What can words tell you that pictures can't?

8. What can pictures tell you that words can't?

B/ Experiences with writing

9. In which language do you feel most comfortable writing – English or your first language (mother tongue)? Please explain why.

10. Where do you get your information or ideas for writing? In the blank to the left of the item, please number them 1, 2, 3, 4, 5 etc., where **1**= the source on which you **most frequently** depend for information, and **5** (or the last number) = the source you which you **least** depend for information.

___ Your own ideas and experiences

___ Other people's ideas and experiences

___ Events and issues in your own community or other communities

___ Books, newspapers, magazines (stories you read)

___ TV shows

___ Other ... (mention any sources that have not been listed)

C/ Familiarity with using digital technologies to create different texts

How familiar are you with using the skills listed below? In the blank space to the right of each statement, please respond with

3= Very Good (I have sufficient skill to help others with this)

2= Good (I have enough skill to do this on my own, but can't help others)

1= Beginning (I have just been introduced to this skill)

0= Not familiar (I have no experience using this skill)

Make sure to tick only one box corresponding to your response. Example:

	Statement	3 Very Good	2 Good	1 Beginning	0 Not Familiar
1	Using computers		√		
2	Searching the Internet	√			

Please, now respond to the items

	Skill	3 Very Good	2 Good	1 Beginning	0 Not Familiar
11	Using computer to create word document				
12	Formatting word document				
13	Printing word document				
14	Using PowerPoint				
15	Using scanner				
16	Importing clipart				
17	Taking pictures with digital camera				
18	Downloading pictures from digital camera				
19	Editing and organizing pictures				
20	Inserting pictures into PowerPoint and word document				

Thank you for taking time to answer these questions.

Appendix B: Exit Survey Protocol

Dear student, last term (that is your 3rd Term in Form 2) I (Anthony Adawu) taught you English Composition. In this course you wrote essays on very important topics and had several opportunities to revise the essay. You also used technology to compose different texts, such as posters and PowerPoint presentations. This questionnaire is aimed at gathering information on the experiences you had in that class. The information is to help us understand what you learned as well as what you think and how you feel about the class activities. Please answer the following questions honestly. Please, do not write your name on these sheets.

Please for each of the statements, select the appropriate response that reflects what you think and feel.

1= Strongly agree (this means that you are very sure that the statement is or was always true in your case)

2= Agree (this means that the statement is or was generally true in your case; although there may be exceptions)

3= Disagree (this means that you find the statement to be generally false in your case, although there may be exceptions)

4= Strongly disagree (this means that you find the statement to be absolutely false in your case)

Make sure to tick only one box corresponding to your response. Example:

	Statement	1 Strongly Agree	2 Agree	3 Disagree	4 Strongly Disagree
1	Going to school is fun		√		
2	The Form 3 students are very intelligent	√			

Please, now answer the questions

	Statement	1 Strongly Agree	2 Agree	3 Disagree	4 Strongly Disagree
1	I learned a lot about taking pictures with digital camera to enable me help others do the same.				
2	I learned a lot about editing and organizing pictures to enable me help others do the same.				
3	I learned a lot about inserting pictures into PowerPoint and word documents to enable me help others do the same.				
4	I acquired sufficient skills in creating PowerPoint and posters and could help others do the same.				
5	I acquired sufficient skills in creating PowerPoint and posters but could not help others do the same.				
6	I acquired sufficient skills in organizing main and supportive ideas in my essay and could help others do the same.				
7	I acquired sufficient skills in organizing main and supportive ideas in my essay but could not help others do the same.				
8	It was difficult for me to present my ideas to my classmates and other people during the poster presentation.				
9	The topic I chose and wrote about in English composition class was important to my life and my community.				
10	I learned new things about my topic and community that I did not know before.				
11	Focusing on real issues in our communities made me enjoy writing my essay.				
12	I learned a lot about my topic to enable me explain it very well to others.				
13	Using photographs and pictures helped me to develop new ideas for my essay.				
14	The pictures I took helped me to think more deeply about my topic.				
15	The questions my friends asked me during the poster presentation helped me to explain my ideas more clearly.				
16	I learned a lot of new things about our communities through other students' posters.				
17	Writing my essay several times helped me to improve on my ideas in very significant ways.				
18	I combined words and pictures in my poster to help the readers understand my ideas more clearly.				
19	In creating the poster, I chose words that would help my readers understand my ideas.				
20	I mostly paid attention to grammar, spelling and punctuation when I revised my essay.				
21	In my revision, I focused on how to develop my				

	ideas and make them clear to my audience.				
22	The comments I received from the instructor helped me to make changes that made the ideas in my poster and essay much clearer.				
23	I have always enjoyed studying English				
24	English is a very difficult subject for me.				
25	I found last term's English composition class enjoyable				
26	I was actually happy going to English composition class last term.				
27	Our last term's English composition class was boring.				
28	Using computers in last term's English composition class was helpful.				
29	I would like to continue learning more about the creation and presentation of posters				
30	Based on my experience, I will encourage every student to learn how to combine pictures and words to communicate ideas.				

Appendix C: Interview Protocol for Students

Thank you for granting this interview. This interview is meant to help me understand how the multimodal activities we engaged in influenced 1) your narrative and descriptive writing and 2) the way/s you think about yourself as a second language writer. Most of the questions will be based on the texts you have composed in this class. Please, there are no wrong answers to any of the questions. If you do not understand a question, please feel free to ask me to explain. Please, feel free also to use your first language in this interview. You are also free to refuse to answer any question you do not want to answer. I also encourage you to ask me any questions you may have about this interview and the research in general. Please feel free to stop this interview any time you want to.

1. Let us begin with the benefits and challenges of writing in English in general.
 - (a) How do you feel when you write in English? Why? Is it different when you write in your first language?
 - (b) Are there any benefits for writing in English? Please explain.
 - (c) Do you have any specific challenges or difficulties when writing in English? Please explain.
2. Now let us turn to your texts.
 - (a) What was your central message in your expository text?
 - (b) What did you intend to show through the pictures and what were you using the words to explain?
 - (c) Who are the intended readers/viewers of your text (audience)?

(d) Does the poster do what you wanted it to do? How?

(e) Could you have done it better if you had used pictures or writing in a different way? Please explain and give examples.

3. Does it make any difference at all to incorporate pictures into your writing?

Please explain and give examples (from your texts).

4. What challenges did you encounter in the multimodal composing activity (e.g. with the use of computer and digital cameras)? How did you go about overcoming these challenges?

5. As a writer, do you think you can make any difference in the lives of people through your writing? How?

Appendix D: Guidelines for Poster Presentation Activity

D1: Guidelines for poster presentation and feedback

1. Introduce yourself (mention your name and place of origin/residence)
2. State your topic.
3. State your main message.
4. Select 2 of your pictures and explain how they combine with words to support the message you want to communicate.
5. Explain why you think the community will benefit from your poster message.
6. Thank the audience for listening to you and for their interest in your poster.

Please Note: You have 8 minutes for your presentation

Peer Feedback on Poster Presentation

Your name -----

The presenter's name -----

1. State ONE thing that you like about the presenter's poster, and why.

One thing I like about the presenter's poster is -----

I like it because -----

2. What ONE thing will you do differently, if you have the opportunity to create a poster on the same topic, and why?

If I have the opportunity to create a poster on the same topic, I will -----

I will do this because -----

D2: Guidelines for reflection on the creation and presentation of poster

(i) Please use the statements in the table below to guide you reflect on your poster. For each statement, please select either YES or NO. Whatever your response, please explain why you will (or will not) make that change.

	Statement	YES	NO	PLEASE EXPLAIN
1	I will change some of the pictures.			
2	I will reduce the number of pictures.			
3	I will increase the number of pictures			
4	I will change some of the ideas.			
5	I will add more ideas to my poster.			
6	I will use more words and fewer pictures.			
7	I will use more pictures and fewer words.			
8	I will change the way I have arranged the pictures and words on my poster.			
9	I will change the colors I have used on my poster.			

(ii) Reflect on your experiences creating the poster and the poster presentation itself (that is, the day you presented your poster to a larger audience). Talk about the challenges you faced creating your poster and how you overcame those challenges.

Appendix E: Rubric for Scoring Multimodal Texts

Points	Multimodal Descriptors	Description The Competent Multimodal Composer/Writer	Scored
10	Content	<ul style="list-style-type: none"> - Selects relevant and meaningful topic. - Topic addresses concrete social and/or cultural issue in writer's community. - Selects appropriate content to express personal intentions, ideas and opinions about topic 	
10	Technical features	<ul style="list-style-type: none"> -Chooses appropriate pictures and words that best communicate intended meaning to audience (i.e., the pictures and words reflect the topic). -Uses complete sentences or meaningful phrases to express main ideas. -Uses color, quality of pictures and appropriate font size to engage and hold a readers' attention. -Uses space effectively; work is well arranged and not crowded on page 	
15	Structure	<p>Combines pictures and words effectively to communicate ideas. This requires effective use of:</p> <ul style="list-style-type: none"> (a) repetition of ideas through words and pictures and/or (b) expression of similar ideas through words and pictures and/or (c) the expression of opposing or conflicting ideas through words and pictures 	
5	Reflection	Explains choices of modes effectively, including why and how specific pictures, words, color, font size, etc are selected and used in the work.	
40		TOTAL	
Comments:			

Appendix F: Notations for Multimodal Transcription

[inaudible] – unheard words

A: ... [B: ...] – Speaker B overlaps with speaker A; spoken words end with speaker B.

A: ... [B: ...] A: ... - Speaker B overlaps with speaker A; speaker A resumes and ends spoken words.

/incompl sentence/ - Incomplete sentence or statement

(....) – Long pauses

→ Spoken words continue in next row without interruption

← Spoken words continued from previous row without interruption

↓ - Visual frame, visual image or kinesic action continues without interruption

Appendix G: SPSS Test Run for Scores on Students' Initial and Final Drafts

G1: SPSS Test Run for Reliability

Inter-rater Reliability for Initial Draft

Symmetric Measures

	Value	Asymp. Std. Error ^a	Approx. T ^b	Approx. Sig.
Measure of Agreement Kappa	.758	.063	22.381	.000
N of Valid Cases	48			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

Inter-rater Reliability for Final Draft

Symmetric Measures

	Value	Asymp. Std. Error ^a	Approx. T ^b	Approx. Sig.
Measure of Agreement Kappa	.867	.051	23.758	.000
N of Valid Cases	48			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

G2: SPSS Test Run for Paired-Samples Statistics (T Test)

Paired Samples Statistics

	Mean	N	Std. Deviation	Std. Error Mean
Pair 1 Total Score for Initial Draft	54.9063	48	7.54748	1.08938
Total Score for Revised Draft	62.0104	48	8.43781	1.21789

Paired Samples Test

		Paired Differences				t	df	Sig. (2-tailed)	
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower				Upper
Pair 1	Total Score for Initial Draft - Total Score for Revised Draft	-7.10417	3.66693	.52928	-8.16893	-6.03940	-13.422	47	.000

G3: Frequency Table – Total Score for Initial Draft

Scores	Frequency	Percent	Cumulative Percent
76.50	1	2.1	2.1
70.00	1	2.1	4.2
69.00	1	2.1	6.3
64.00	2	4.2	10.4
62.00	3	6.3	16.7
61.00	2	4.2	20.8
60.50	1	2.1	22.9
60.00	3	6.3	29.2
58.50	2	4.2	33.3
58.00	3	6.3	39.6
57.50	1	2.1	41.7
57.00	1	2.1	43.8
56.00	1	2.1	45.8
55.50	1	2.1	47.9
55.00	4	8.3	56.3
54.00	2	4.2	60.4
53.00	1	2.1	62.5
50.00	3	6.3	68.8
49.00	1	2.1	70.8
48.00	4	8.3	79.2
47.00	2	4.2	83.3
46.00	4	8.3	91.7
45.50	1	2.1	93.8
45.00	1	2.1	95.8
44.00	1	2.1	97.9
42.00	1	2.1	100.0
Total	48	100.0	

≈ 56% of
 students above
 the Mean
 ($M = 54.91$, SD
 $= 7.55$)

≈ 44% of
 students below
 the Mean

G4: Frequency Table – Total Score for Final Draft

Scores	Frequency	Percent	Cumulative Percent
86.50	1	2.1	2.1
81.00	1	2.1	4.2
79.00	1	2.1	6.3
69.00	2	4.2	10.4
68.00	4	8.3	18.8
67.00	5	10.4	29.2
66.00	4	8.3	37.5
65.00	4	8.3	45.8
60% of students 64.00	2	4.2	50.0
above the Mean 63.00	3	6.3	56.3
($M = 62.01$, $SD = 8.44$) 62.00	2	4.2	60.4
61.00	2	4.2	64.6
60.00	1	2.1	66.7
40% of students 57.00	1	2.1	68.8
below the Mean 55.00	5	10.4	79.2
53.00	2	4.2	83.3
52.00	2	4.2	87.5
51.00	2	4.2	91.7
50.00	2	4.2	95.8
47.00	2	4.2	100.0
Total	48	100.0	

References

- Adawu, A. (2005). *Attitude of senior secondary students to literature in English: Implications for teaching and learning English as a second language* (Unpublished masters thesis). University of Ghana, Legon, Ghana.
- Adawu, A. & Martin-Beltrán, M. (2012). Points of transition: Understanding the constructed identities of L2 learners/users across time and space. *Critical Inquiry in Language Studies*, 9(4), 376–400. Advance online publication. doi: 10.1080/15427587.2012.664038
- Alexander, P. A. (1997). Mapping the multidimensional nature of domain learning: The interplay of cognitive, motivational, and strategic forces. In M. L. Maehr & P. R. Pintrich (Eds.), *Advances in motivation and achievement* (Vol. 10, pp. 213-250). Greenwich, CT: JAI Press.
- Alexander, P. A. (2003). Can we get there from here? Introduction to the special issue on expertise. *Educational Researcher*, 32(8), 3-4.
- Alexander, P. A. (2005) The Path to Competence: A lifespan developmental perspective on reading. *Journal of Literacy Research*, 37(4), 413-436.
- Alexander, P. A., & the Disciplined Reading and Learning Research Laboratory (2010). The challenges of developing competent literacy in the 21st century. Washington, DC: The National Academy of Sciences. (Retrieved on 06/20/11)
- http://www7.nationalacademies.org/dbasse/Research_on_21st_Century_Competencies_Papers_and_Presentations.html

- Alias, S. (2004). A semiotic study of Singapore's Orchard Road and Marriott Hotel. In K. L. O'Halloran (Ed.), *Multimodal discourse analysis: Systemic functional perspectives* (pp. 55-82). London: Continuum
- Andoh-Kumi, K. (1999). Language policy for primary schools: Quo vadimus? In M. E. Kropp Dakubu (Ed.), *Teaching English in Ghana: A handbook for teachers* (pp. 107-126). Accra: Ghana English Studies Association.
- Anyindoho, A., & M. E. Kropp Dakubu (2008). Ghana: Indigenous languages, English, and an emerging national identity. In A. Simpson (Ed.), *Language and national identity in Africa* (pp. 141-157). Oxford: Oxford University Press.
- Archer, A. (2007). Opening up spaces through symbolic objects: harnessing students' multimodal resources in developing English academic literacy in an Engineering course. *English Studies in Africa*, 49(1), 189-206.
- Bailey, K. M. (1983). Competiveness and anxiety in adult second language learning: Looking at and through the diary studies. In H. W. Selinger & M. H. Long (Eds.), *Classroom oriented research in second language acquisition* (pp. 67-103). MA: Newbury House.
- Bailey, K. M. (1990). The use of diary studies in teacher education programs. In J. C. Richards & D. Nunan (Eds.), *Second language teacher education* (pp. 215-240). Cambridge, UK: Cambridge University Press.

- Bailey, K. M. (1991). Diary studies of classroom language learning: The doubting game and the believing game. In E. Sadtono (Ed.), *Language acquisition and the second/foreign language classroom* (pp. 60-102). SEAMEO Regional Language Center.
- Baldry, A., & Thibault, P. J. (Eds.). (2005). *Multimodal transcription and text analysis*. London: Equinox.
- Bateman, J. A. (2008). *Multimodality and genre: A foundation for the systematic analysis of multimodal documents*. New York: Palgrave Macmillan.
- Bearne, E. (2009). Assessing multimodal texts. In A. Burke, & R. F. Hammett (Eds.), *Assessing new literacies: Perspectives from the classroom* (pp. 15-33). New York: Peter Lang Publishing.
- Bearne, E., & Wolstencroft, H. (2007). *Visual approaches to teaching writing: Multimodal literacy, 5-11*. London: Paul Chapman Publishing.
- Belcher, D. (2008). Series Forward. In J. Bloch, *Technologies in the second language composition classroom* (pp.vii-viii). Ann Arbor: The University of Michigan Press.
- Benesch, S. (2012). *Considering emotions in critical English language teaching: Theories and praxis*. New York: Routledge.
- Benhardt, S. A., Edwards, P. R., & Wojahn, P. G. (1989). Teaching college composition with computers: a program evaluation study. *Written Communication*, 7, 342-274.
- Berlin, J. A. (1988). Rhetoric and Ideology in the Writing Class. *College English*, 50, 477-494.

- Bezemer, J., & Kress, G. (2008). Writing in multimodal texts: A social semiotic account of designs for learning. *Written Communication*, 25, 166-195.
- Boakye, K.B., & Banini, D.A. (2008). Teacher ICT Readiness in Ghana. In K. Toure, T.M.S. Tchombe, & T. Karsenti (Eds.), *ICT and Changing Mindsets in Education. Bamenda, Cameroon: Langaa; Bamako, Mali: ERNWACA ROCARE*.
- Bloch, J. (2008). *Technologies in the second language composition classroom*. Ann Arbor: University of Michigan Press.
- Brenner, M. E. (2006). Interviewing in educational research. In J. L. Green, G. Camilli, & P. B. Elmore (Eds.), *Handbook of complementary methods in education research* (pp. 357-370). Mahwah, NJ: Lawrence Erlbaum Associates, Publishers.
- Brown, J. D. (1995). *The elements of language curriculum: A systematic approach to program development*. Boston: Heinle.
- Brown, J. D., & Rodgers, T. (2002). *Doing second language research*. Oxford: OUP.
- Bukari, J. (2009). *Language policy in West Africa: Focus on Ghana and Burkina Faso*. West Layette, Purdue: VDM Verlag Dr. Müller.
- Bull, G. L., & Bell, L. (Eds.). (2005). *Teaching with digital images: Acquire, analyze, create, communicate*. Washington DC: International Society for Technology in Education.
- Buscemi, S.V. (2002). *A reader for developing writers*. Boston: McGraw Hill.
- Canagarajah, S. A. (2006). TESOL at forty: What are the issues? *TESOL Quarterly*, 40(1), 9-34.

- Canagarajah, S. (2009). Can we talk? Finding a platform for dialogue among values-based professionals in post-positivist education. In M. S. Wong, & S. Canagarajah (Eds.), *Christian and critical English language educators in dialogue: Pedagogical and ethical dilemmas* (pp. 75-86). New York: Routledge.
- Carson, J., and Nelson, G. (1994). Writing groups: cross-cultural issues. *Journal of Second Language Writing*, 3, 17-30.
- Chapelle, C. A. (2010). Research for practice: A look at issues in technology for second language learning. *Language Learning & Technology* 14(3), 27–30. Retrieved (11/20/2010) from <http://llt.msu.edu/vol14num3/commentary.pdf>
- Chapelle, C. A. & Jamieson, J. (2008). *Tips for teaching with CALL: Practical approaches to computer assisted language learning*. New York: Pearson Education, Inc.
- Christenbury, L., Bomer, R., & Smagorinsky. (2009). (Eds.). *Handbook of adolescent literacy research*. New York: The Guilford Press.
- Cochran-Smith, M., & Lytle, S. (2009). *Inquiry as stance: Practitioner research in the next generation*. New York: Teachers College Press.
- Cole, D. R., & Pullen, D. L. (2010). *Multiliteracies in motion: Current theory and practice*. New York: Routledge.
- Connor, U. (1996). *Contrastive rhetoric: Cross-cultural aspects of second language writing*. New York: CUP.

- Cooper, H. (2006). Research questions and designs. In P. A. Alexander & P. H. Winnie (Eds.), *Handbook of educational psychology* (2nd ed., pp. 849-878). New York: Routledge.
- Cope, B., & Kalantzis, M. (Eds.) (2001). *Multiliteracies: Literacy learning and the design of social futures*. London: Routledge
- Cope, B., & Kalantzis, M. (2007). From literacy to “multiliteracies”: Learning to mean in the new communication environment. *English Studies in Africa*, 49(1), 23-45.
- Creswell, J. W. (2009). *Research design: Qualitative, quantitative, and mixed methods approaches* (3rd ed.) Los Angeles: SAGE.
- Creswell, J. W., & Plano Clark, V. (2007). *Designing and conducting mixed methods research*. Los Angeles: SAGE.
- Crystal, D. (1997). *English as a global language*. Cambridge: CUP.
- Crystal, D. (2003). *The Cambridge Encyclopedia of the English language*. (2nd ed.) Cambridge: Cambridge University Press.
- Cumming, A. (Ed.) (2006). *Goals for academic writing: ESL students and their instructors*. Amsterdam: John Benjamins Publishing Company.
- Cummins, J. (2000). Academic language learning, transformative pedagogy, and information technology: Toward a critical balance. *TESOL Quarterly*, 34(3), 537-546.
- Cummins, J. (2003). BICS and CALP: Origins and rationale for the distinction. In C. B. Paulston & G. R. Tucker (Eds.), *Sociolinguistics: The essential readings* (pp. 322-328). London: Blackwell.

- Davies, A. Z. (1997). Teaching literature in English. In M. E. Kropp-Dakubu (Ed.), *English in Ghana* (pp. 141-156). Accra: Black Mask Publishers.
- Derry, S. J. (Ed.) (2007). Guidelines for video research in education: Recommendations from an expert panel. Retrieved from <http://drdc.uchicago.edu/what/video-research-guidelines.pdf>.
- Dzameshie, A. (1997). Towards a communicative approach to teaching English as a second language in Ghana. In M. E. Kropp-Dakubu (Ed.), *English in Ghana* (pp. 173-194). Accra: Black Mask Publishers
- Early, M., & Marshall, S. (2008). Adolescent ESL students' interpretation and appreciation of literary texts: A case study of multimodality. *The Canadian Modern Language Review*, 64(3), 377–397.
- Edu-Buandoh, M. (1997). Report on errors in students writing. In M. E. Kropp Dakubu (Ed.), *English in Ghana* (pp. 178-201). Accra: Black Mask Publishers.
- Elbow, P. (1981). *Writing with power: Techniques for mastering the writing process*. New York: OUP.
- Ewald, W., & Lightfoot, A. (2001). *I wanna take me a picture: Teaching photography and writing to children*. Boston, MA: Beacon Press.
- Engeström, Y. (1987). *Learning by expanding: an activity-theory approach to developmental research*. Helsinki: Orienta-Konsultit.
- Engeström, Y. (1999a). Activity theory and individual and social transformation. In Y. Engeström, R. Meittinen, R. Punamaki (Eds.), *Perspectives on activity theory* (pp. 19-38). London: Cambridge University Press.

- Engeström, Y. (1999b). Innovative learning in work teams: Analyzing cycles of knowledge. In Y. Engeström, R. Meittinen, R. Punamaki (Eds.), *Perspectives on activity theory* (pp. 377-404). London: Cambridge University Press.
- Engeström, Y. (1999c). Expansive visibilization of work: An activity-theoretical perspective. *Computer Supported Cooperative Work*, 8, 63-93.
- Engeström, Y. (2009). The future of activity theory. In A. Sannino, H. Daniel, & K. D. Guitierrez (Eds.), *Learning and expanding with activity theory* (pp. 300-328). Cambridge: Cambridge University Press.
- Engeström, Y., Pounti, A., & Seppanen, L. (2003). Spatial and temporal expansion of the object as a challenge for reorganizing work. In D. Nicolini, S. Gherardi, D. Yanon (Eds.), *Knowing in organizations: a practice-based approach* (pp. 151-186). Armonk, New York: Sharpe.
- Erben, T., Ban, R., & Casteneda, H. (2009). *Teaching English language learners through technology*. New York: Routledge.
- Erickson, F. (2006). Definition and analysis of data from videotape: Some research procedures and their rationales. In J. L. Green, G. Camilli, & P. B. Elmore (Eds.), *Handbook of complementary methods in education research* (pp. 111-139). Mahwah, New Jersey: Lawrence Erlbaum Associates, Publishers.
- Ferris, D. R., & Hedgcock, J. S. (2005). *Teaching ESL composition: Purpose, process, and practice*. (2nd ed.). Mahwah, New Jersey: Lawrence Erlbaum Associates, Publishers.

- Finnegan, R. (2002). *Communicating: The multiple modes of human interconnection*. London: Routledge.
- Flewitt, R., Hampel, R., Hauck, M., & Lancaster, L. (2009). What are multimodal data and transcription? In C. Jewitt (Ed.), *The handbook of multimodal analysis* (pp. 40-53). London: Routledge.
- Flower, L. (1985). *Problem-solving strategies for writing*. (2nd ed.). San Diego: Harcourt Brace Jovanovich.
- Gass, S. M. & Mackey, A. (2007). *Data elicitation for second and foreign language research*. Mahwah, New Jersey: Lawrence Erlbaum Associates, Publishers.
- Gebhard, M. (1999). Debates in SLA studies: redefining classroom SLA as an institutional phenomenon. *TESOL Quarterly*, 33(3), pp. 544 – 557.
- Gee, J. P. (1998). What is literacy? In V. Zamel and R. Spack (Eds.), *Negotiating academic literacies: Teaching and learning across languages and cultures* (pp. 51-59). Mahwah, NJ: Lawrence Erlbaum Associates.
- Gee, J. P. (2008). *Social linguistics and literacies: Ideology in discourse*. London: Falmer Press.
- Graham, C. K. (1971). *The history of education in Ghana*. London: Frank Cass and Company Ltd.
- Halliday, M. A. K. (1978) *Language as a social semiotic: The social interpretation of language and meaning*. London: Edward Arnold
- Halliday, M. A. K. (1985). *An introduction to functional grammar*. London: Edward Arnold.

- Harklau, L., & Pinnow, R. (2009). Adolescent second-language writing. In L. Christenbury, R. Bomer, & P. Smagorinsky (Eds.), *Handbook of adolescent literacy research* (pp. 126-139). New York: The Guilford Press.
- Hedgcock, J. S. (2005). Taking stock of research and pedagogy in L2 writing. In E. Hinkel (ed.), *Handbook of research in L2 teaching and learning*. London: Routledge.
- Hess, G.R., Tosney, K., & Liegel, L. (2006). Creating effective poster presentations. (Retrieved, 11/10/2010, from) <http://www.ncsu.edu/project/posters>
- Higgins, S., Hall, E., Wall, K., Woolner, P., & McCaughey, C. (2005). The Impact of School Environments: A literature review. Retrieved from <http://www.cfbt.com/PDF/91085.pdf>
- Hubbard, P. (2004). Learner training for effective use of CALL. In S. Fotos & C. Browne (Eds.), *New perspectives on CALL for second language classrooms*. Mahwah, NJ: Lawrence Erlbaum.
- Hyland, K. (2003). Genre-based pedagogies: a social response to process. *Journal of Second Language Writing*, 12, 17-29.
- Hyland, K. (2009). *Teaching and researching writing* (2nd ed). England: Pearson
- Iedema, R. (2003). Multimodality, resemiotization: Extending the analysis of discourse as multi-semiotic practice. *Visual Communication*, 2(1), 29-57.
- Ivarsson, J., Linderöth, J., & Saljo, R. (2009). Representation in practice: a socio-cultural approach to multimodality in reasoning. In C. Jewitt (Ed.), *The handbook of multimodal analysis* (pp. 201-212). London: Routledge.

- Jacobs, H. L., Zingraf, S. A., Wormuth, D. R., Hartfiel, V. F., & Hughey, J. B. (1981). *Testing ESL composition: A practical approach*. Rowley, MA: Newbury House Publishers, Inc.
- Janks, H. (2000). Domination, access, diversity, design: A synthesis for critical literacy education. *Educational Review*, 52(2), 175-186.
- Janks, H. (2007). Games go abroad. *English Studies in Africa*, 49(1), 115-138.
- Jenkins, J. (2006). Current perspectives on teaching world Englishes and English as lingua franca. *TESOL Quarterly*, 40(1), 157– 181.
- Jewitt, C. (2002). The move from page to screen: The multimodal shaping of school English. *Visual Communication*, 1(2), 171-95.
- Jewitt, C. (2006). *Technology, literacy, learning: A multimodal approach*. London: Routledge.
- Jewitt, C. (Ed.). (2009a). *The handbook of multimodal analysis*. London: Routledge.
- Jewitt, C. (2009b). An introduction to multimodality. In C. Jewitt (Ed.), *The handbook of multimodal analysis* (pp. 14-27). London: Routledge.
- Jewitt, C. (2009c). Different approaches to multimodality. In C. Jewitt (Ed.), *The handbook of multimodal analysis* (pp. 28-39). London: Routledge.
- Johns, A. M. (1994). L1 composition theories: Implications for developing theories of L2 composition. In B. Kroll, (Ed.), *Second language writing: Research insights for the classroom* (pp. 24-36). Cambridge: CUP.
- Kachru, B. B. (1990). World Englishes and Applied Linguistics. *World Englishes*, 9(1), 3-20.

- Kaplan, R. B. (1966). Cultural thought patterns in intercultural communication. *Language learning*, 16, 1-20.
- Kaplan, R. B. (1988). Contrastive rhetoric and second language learning. Notes toward a theory of contrastive rhetoric. In A. C. Purves (Ed.), *Writing across languages and cultures: Issues in contrastive rhetoric* (pp. 275-304). Newbury Park, CA: Sage.
- Kendrick, M., Jones, S., Mutonyi, H., Norton, B. (2007). Multimodality and English education in Ugandan schools. *English Studies in Africa*, 49(1), 95-114.
- Kress, G. (2000a). Multimodality. In B. Cope & M. Kalantzis (Eds.), *Multiliteracies: Literacy learning and the design of social futures* (pp. 182-202). London: Routledge.
- Kress, G. (2000b). Design and transformation: New theories of meaning. In B. Cope & M. Kalantzis (Eds.), *Multiliteracies: Literacy learning and the design of social futures* (pp. 153-161). London: Routledge.
- Kress, G. (1993). *Learning to write* (2nd ed.). London: Routledge.
- Kress, G. (2003). *Literacy in the new media age*. London and New York: Routledge.
- Kress, G. (2009). What is mode? In C. Jewitt (Ed.), *The handbook of multimodal analysis* (pp. 54-67). London: Routledge.
- Kress, G. (2010). *Multimodality: A social semiotic approach to contemporary communication*. London and New York: Routledge.
- Kress, G., & van Leeuwen, T. (2001). *Multimodal discourse. The modes and media of contemporary of contemporary communication*. London: Edward Arnold.

- Kress, G., Jewitt, C., Bourne, J., Franks, A., Hardcastle, J., & Reid, E. (2005). *English in urban classrooms: A multimodal perspective on teaching and learning*. London: Routledge.
- Kroll, B. (Ed.) (1994). *Second language writing: Research insights for the classroom*. Cambridge: CUP.
- Lantolf, J. P., & Pavlenko, A. (2001). Second language activity theory: Understanding second language learners as people. In M. Breen (Ed.), *Learner contributions to language learning: New directions in research* (pp. 141-158). London: Pearson.
- Lantolf, J. P., & Thorne, S. (2006). *Sociocultural theory and the genesis of second language development*. Oxford: Oxford University Press.
- Lave, J. & Wenger, E. (1991). *Situated learning: Legitimate peripheral participation*. Cambridge: CUP.
- Leander, K., & Vasudevan, L. (2009). Multimodality and mobile culture. In C. Jewitt (Ed.), *The handbook of multimodal analysis* (pp. 127-139). London: Routledge.
- Leki, I. (1991). Twenty-five years of contrastive rhetoric: text analysis and writing pedagogies. *TESOL Quarterly*, 24, 123-143.
- Leki, I., Cumming, A., & Silva, T. (2008). *A synthesis of research on second language writing in English*. New York: Routledge.
- Lemke, J. (2009). Multimodality, identity and time. In C. Jewitt (Ed.), *The handbook of multimodal analysis* (pp. 140-150). London: Routledge.

- Leont'ev, A. N. (1978). *Activity, consciousness and personality*. Englewood Cliffs, NJ: Prentice Hall.
- Lin, A., Wang, W., Akamatsu, N., & Mehdi Riazi, A. (2002). Appropriating English, expanding identities, and revisioning the field: From TESOL to English for globalized communication (TEGCOM). *Journal of Language, Identity, and Education*, 1(4), 295-316.
- Ludvigsen, S., & Digernes, T. O. (2009). Research leadership: Productive research and integration of research fellows. In A. Sannino, H. Daniel, & K. D. Guitierrez (Eds.), *Learning and expanding with activity theory* (pp. 240-254). Cambridge: Cambridge University Press.
- Machin, D. (2009). Multimodality and theories of the visual. In C. Jewitt (Ed.), *The handbook of multimodal analysis* (pp. 181-190). London: Routledge.
- Maggioni, L., & Alexander, P. A. (2009). Competence in the High-School History Classrooms: Three Case Studies. Paper presented at the 13th Biennial Conference of the European Association for Research on Learning and Instruction, Amsterdam, The Netherlands.
- Matthewman, S., with Blight, A., & Davies C. (2004). What does multimodality mean for English? Creative tensions in teaching new texts and new literacies. *Education, Communication and Information*, 4(1), 153–176.
- Mavers, D. (2009). Image in the multimodal ensemble: Children's drawing. In C. Jewitt (Ed.), *The handbook of multimodal analysis* (pp. 263-271). London: Routledge.

- McKay, S. L. (2002). *Teaching English as an international language: Rethinking goals and approaches*. Oxford: OUP.
- McKay, S. L. (2006). *Researching second language classroom*. New Jersey: Lawrence Erlbaum Associates, Inc.
- Millard, E. (2006). Transformative pedagogy: Teachers creating a literacy of fusion. In K. Pahl, & J. Rowsell, (Eds.) *Travel notes from the New Literacy Studies: Instances of practice* (pp. 234-253). Clevedon: Multilingual Matters.
- Ministry of Communications, Ghana (2003). *The Ghana ICT for accelerated development policy*. Retrieved from www.ict.gov.gh
- Ministry of Education, Ghana (2003). The Chief Examiner's Report.
- Ministry of Education, Science and Sports, Ghana (2007). Syllabus for teaching English language in junior high school, 1-3.
- Mishler, E. G. (1999). *Storylines: Craftartists' narratives of identity*. Cambridge, MA: Harvard University Press.
- Mishler, E. G. (2006). Narrative and identity: The double arrow of time. In A. de Fina, D. Schiffrin, & M. Bamberg (Eds.), *Discourse and identity* (pp. 30-47). Cambridge: Cambridge University Press.
- Moje, B. E. (2008). Responsive literacy teaching in secondary school content areas. In M. W. Conley, J. R. Freidhoff, M. B. Sherry, & S. F. Tuckey (Eds.), *Meeting the challenge of adolescent literacy: Research we have, research we need* (pp. 58-87). New York: The Guilford Press.

- Namey, E., Guest, G., Thairu, L., & Johnson, L. (2008). Data reduction techniques for large qualitative data sets. In G. Guest, & K. M. MacQueen (Eds.), *Handbook for team-based qualitative research* (pp. 137-161). New York: Altamira Press.
- Nelson, J. (1993). The library revisited: Exploring students' research processes. In A. Penrose & B. Sitcoe (Eds.), *Hearing ourselves think: Cognitive research in the college writing classroom*. New York: Oxford University Press.
- New London Group (1996). A pedagogy of multiliteracies: designing social futures. *Harvard Educational Review*, 66(1), 60-92.
- Newfield, D., & Maungedzo, R. (2007). Mobilizing and modalizing poetry in a Soweto classroom. *English Studies in Africa*, 49(1), 71-94).
- Newfield, D., & Stein, P. (2000). The multiliteracies project: South African teachers respond. In B. Cope, & M. Kalantzis (Eds.). *Multiliteracies: Literacy learning and the design of social futures* (pp. 292-310). London: Routledge.
- Newfield, D., Andrew, D., Stein, P., & Maungedzo, R. (2003). "No numbers can describe how good it was": Assessment issues in the multimodal classroom. *Assessment in Education*, 10(1), 61-81.
- Norris, S. (2011). *Identity in interaction: Introducing multimodal interaction analysis*. Germany: De Gruyter Mouton.
- Norton, B. (1997). Language, identity and the ownership of English. *TESOL Quarterly*, 31(3), 409-429.

- Nyirahuku B., & Hoeing, K. H. (2007). Inserting *bana molokai* popular culture texts into the Rwandan English literature classroom. *English Studies in Africa*, 49(1), 47-70.
- Obondo, M. A. (2007). Tensions between English and mother-tongue teaching in post-colonial Africa. In Ed. J. Cummins and C. Davison(Eds.) *International handbook of English language teaching* (pp. 37-50). New York: Springer.
- O'Halloran, K. L. (Ed.). (2004). *Multimodal discourse analysis: Systemic functional perspectives*. London: Continuum.
- O'Halloran, K. L. (2004) Introduction. In K. L. O'Halloran (Ed.), *Multimodal discourse analysis: Systemic functional perspectives* (pp. 1-10). London: Continuum.
- Ohler, J. (2008). *Digital storytelling in the classroom: New media pathways to literacy, learning, and creativity*. Thousand Oaks, CA: Corwin Press.
- Ortmeier-Hooper, C. & Enright, K. A. (2011). Mapping new territory: Toward an understanding of adolescent L2 writers and writing in U.S. contexts. *Journal of Second Language Writing*, 20(3) 167-181.
- Osei, G. M. (2010). *Education reforms in Ghana: Curriculum in junior high schools*. New York: Nova Science Publishers, Inc.
- O'Toole, M. (2004). Opera Ludentes: The Sydney Opera House at work and play. In K. L. O'Halloran (Ed.), *Multimodal discourse analysis: Systemic functional perspectives* (pp. 11-27). London: Continuum.
- Oxford, R. L. (2011). *Teaching and researching language learning strategies*. New York: Pearson.

- Page, R. (2010). Introduction. In R. Page (Ed.), *New perspectives on narrative and multimodality* (pp.1-13). New York: Routledge.
- Palmeri, J. (2012). *Remixing composition: A history of multimodal writing pedagogy*. Carbondale and Edwardsville: Southern Illinois University Press.
- Pang Kah Meng, A. (2004). Making history in From Colony to Nation: A multimodal analysis of a museum exhibition in Singapore. In K. L. O'Halloran (Ed.), *Multimodal discourse analysis: Systemic functional perspectives* (pp. 28-54). London: Continuum.
- Pavlenko, A. (2007) Autobiographic narratives as data in applied linguistics. *Applied Linguistics*, 28(2), 163-188.
- Peirce, C. S. (1991). *Peirce on the semiotic*. Chapel Hill: University of North Carolina Press.
- Polio, C. (2001). Research methodology in second language writing research: The case of text-based studies. In T. Silva & P. K. Matsuda (Eds.), *On second language writing* (pp. 91-115). New York: Routledge.
- Prior, P. A. (1998). *Writing/Disciplinarity: A sociohistoric account of literate activity in the academy*. NY: Routledge.
- Prior, P. A. (2004). Trace process: How texts come into being. In C. Bazerman & P. Prior (Eds.), *What writing does and how it does it: An introduction to analyzing texts and textual practices* (pp. 167-200). New Jersey: Lawrence Erlbaum Associates, Inc.

- Prior, P. (2006). A sociocultural theory of writing. C. A. MacArthur, S. Graham, & J. Fitzgerald (Eds.), *Handbook of writing research* (pp.54-66). New York: The Guilford Press.
- Prior, P. A., & Hengst, J. A. (Eds.) (2010). *Exploring semiotic remediation as a discourse practice*. New York, NY: Palgrave Macmillan.
- Quallemalz, E. S., & Burry, J. (1983). *Analytic scale for assessing students' expository and narrative writing skills*. CSE Resource Paper No. 5.
- Randolph, J. J. (2009). A guide to writing the dissertation literature review. *Practical Assessment, Research and Evaluation*, 14(13), 1-13.
- Ransdell, S. & Barbier, M. L. (Eds.) (2002). *New directions for research in L2 writing*. The Netherlands: Kluwer Academic Publishers.
- Reid, J. (1994). Responding to ESL students' texts: the myths of appropriation. *TESOL Quarterly*, 28(2), 273-292.
- Royce, T. D. (2002). Multimodality in the TESOL classroom: Exploring visual-verbal synergy. *TESOL Quarterly*, 36(2), 191-206.
- Royce, T. D. (2007a). Intersemiotic complementarity: A framework for multimodal discourse analysis. In T. D. Royce & W. L. Bowcher (Eds.), *New directions in the analysis of multimodal discourse* (pp. 63-110). London: Lawrence Erlbaum Associates, Inc.
- Royce, T. D. (2007b). Multimodal communicative competence in second language contexts. In T. D. Royce & W. L. Bowcher (Eds.), *New directions in the analysis of multimodal discourse* (pp. 361-390). London: Lawrence Erlbaum Associates, Inc.

- Saldaña, J. (2009). *The coding manual for qualitative researchers*. Los Angeles: Sage Publications Ltd.
- Sannino, A., Daniel, H., & Gutierrez, K. D. (Eds.) (2009). *Learning and expanding with activity theory*. Cambridge: Cambridge University Press.
- Schleppegrell, M. J., & Colombi, M. C. (Eds.) (2002). *Developing advanced literacy in first and second languages: Meaning with power*. New York: Routledge.
- Shipka, J. (2011). *Toward a composition made whole*. Pittsburg, PA: University of Pittsburg Press.
- Scollon, R., & Scollon, S. W. (2009). Multimodality and language: a retrospective and prospective view. In C. Jewitt (Ed.), *The handbook of multimodal analysis* (pp. 170-180). London: Routledge.
- Shor, I. (1997). What is critical literacy? *Journal for Pedagogy, Pluralism and Practice*. Retrieved from <http://web.ebscohost.com.proxyum.researchport.umd.edu>
- Silva, T. (1994). Second Language Composition Instruction: Development, Issues, and Directions in ESL. In B. Kroll (Ed.), *Second language writing: Research insights for the classroom* (pp 11-23). Cambridge: CUP.
- Silva, T., & Matsuda, P. K. (Eds.) (2010). *Practicing theory in second language writing*. West Lafayette, IN: Parlor Press.
- Stein, P. (1998). Reconfiguring the past and the present: Performing literacy histories in a Johannesburg classroom. *TESOL Quarterly*, 32(3), 517-28.
- Stein, P. (2000). Teaching issues, rethinking resources: Multimodal pedagogies in the ESL classroom. *TESOL Quarterly*, 34(2), 333-336.

- Stein, P. (2008). *Multimodal pedagogies in diverse classrooms: Representation, rights and resources*. London: Routledge.
- Stein, P., & Newfield, D. (2007). Multiliteracies and multimodality in English education in Africa: Mapping the terrain. *English Studies in Africa*, 49(1), 1-22.
- Street, B., Pahl, K., & Rowsell, J. (2009). Multimodality and new literacy studies. In C. Jewitt (Ed.), *The handbook of multimodal analysis* (pp. 191-200). London: Routledge.
- Strong, W., Royster, J. J., & Lester, M. (1996). *Writer's choice*. NY: Glencoe, McGraw-Hill.
- Swales, J. M. (1990). *Genre analysis*. Cambridge: Cambridge University Press.
- Tardy, C. M. (2009). *Building genre knowledge*. Indiana: Parlor Press
- Tsang, W. K. (1996). Comparing the effects of reading and writing on writing performance. *Applied Linguistics*, 17, 210-233.
- United Kingdom Literacy Association (2004). Raising boys' achievements in writing. Retrieved on 05/07/10
(<http://nationalstrategies.standards.dcsf.gov.uk/node/88095>)
- Unsworth, L., & Cleirigh, C. (2009). Multimodality and reading: The construction of meaning through image-text interaction. In C. Jewitt (Ed.), *The handbook of multimodal analysis* (pp. 151-164). London: Routledge.
- van Leeuwen, T. (2000). 'It was just like magic': A multimodal analysis of children's writing. *Linguistics and Education* 10(3), 273-305.
- van Leeuwen, T. (2005). *Introducing social semiotics*. London and New York:

Routledge.

- VanSledright, B. (2002). *In search of America's past: Learning to read history in elementary school*. New York: Teachers College Press.
- Virkkunen, J. (2009). Two theories of organizational creation. In A. Sannino, H. Daniel, & K. D. Gutierrez (Eds.), *Learning and expanding with activity theory* (pp. 144-159). Cambridge: Cambridge University Press.
- Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes*. Cambridge, MA: Harvard University Press.
- Vygotsky, L. S. (1986). *Thought and language*. London: The MIT Press.
- Warschauer, M. (2000). The changing global economy and the future of English teaching. *TESOL Quarterly*, 34(3), 511-536.
- Weigle, S. C. (2002). *Assessing writing*. Cambridge: Cambridge University Press.
- Wellington, J. (2001). *Educational research: Contemporary issues and practical approaches*. London: Continuum International Publishing Group.
- Wertsch, J. V. (1991). *Voices of the mind: A sociocultural approach to mediated action*. Cambridge, MA: Harvard University Press.
- Wolff, D. (2000). Second language writing: A few remarks on psycholinguistic and instructional issues. *Learning and Instruction*, 10, 107 – 112.
- Wong Fillmore, L., & Snow, C. (2000). What teachers need to know about language. Special Report (Clearinghouse on Languages and Linguistics)
- Wysocki, A. F. (2004). The multiple media of texts: How onscreen and paper texts incorporate words, images and other media. In C. Bazerman & P. Prior (Eds.), *What writing does and how it does it: An introduction to analyzing texts and*

- textual practices* (pp. 123-163). New Jersey: Lawrence Erlbaum Associates, Inc.
- Yamagata-Lynch, L. C. (2010). *Activity systems analysis methods: Understanding complex learning environments*. London: Springer
- Yin, R. K. (2006). Case study methods. In J. L. Green, G. Camilli, & P. B. Elmore (Eds.), *Handbook of complementary methods in education research* (pp. 111-139). Mahwah, New Jersey: Lawrence Erlbaum Associates, Publishers.
- Yin, R. K. (2009). *Case study research: Design and methods* (4th ed.). Los Angeles: Sage Publications.
- Zamel, V. (1982). Writing: The process of discovering meaning. *TESOL Quarterly*, 16, 195- 209.