Shared Attentional Frames and Sentence Completion Activities: A Process Based Approach to Literacy Assessment

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Biodata

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Abstract

This paper is part of an ongoing series of theory to practice descriptive/exploratory case studies investigating how digital video cameras can enhance students' academic English language learning in pre-college developmental reading, writing, and speaking courses. Although the participants in the current phase of the research are learning English as an additional language and/or speak a language other than English in the home, the classroom-based learning activities with the digital video cameras are intended to be adapted across languages, academic disciplines, and applied technologies (e.g., health technologies, construction technologies, automotive technologies, and environmental technologies). The main focus of the ongoing research is to create an accessible, theoretical framework and collection of classroom learning and assessment activities for using digital video cameras and other digital media (e.g., screen capture software) as part of the reading response and essay writing process. The current paper in the series of cases further articulates Tomasello's (2003) concept of *Joint Attentional Scenes* as his ideas have been used to create an accessible, embodied approach to language learning and sign creation. The current procedures and assessment options illustrate how *intention-reading* and a dynamic, triadic arrangement of learner, visual, and audience create a foundation to inform existing assessments. A number of studies and position papers are also presented as part of an extensive rationale for moving assessment in this direction. Most important for bringing the reader closer to the research, this paper links to raw data, rubrics, documents, conference Power Points, other resources, the proposed sentence completion assessment, and ten other cases and data appearing in different journals.

Introduction

For community colleges, four-year colleges, and many universities in the U.S. with relatively lenient entrance policies, initial assessment of students' English language and literacy skills has been an ongoing challenge (Holschuh, 2014; Collins, 2014). Many of those students who are mixed in with the broader remedial/developmental populations speak English as an additional language and are recent immigrants; English may not be the language spoken in the home, and/or these students come from non-standard literacy backgrounds (Allison, 2011; see also Health, 1983). That is, students are placed into ESL and developmental literacy programs at widely ranging ages and levels of formal schooling (Sullivan & Neilson, 2009; Parrish & Johnson, 2010; see also Dikli & Bleyle, 2014), regardless of whether or not the mother tongue is the majority language or not. In my own experiences with students from harsh educational, social, and economic contexts, many also arrive in the classroom with traumatic events dominating their lives.

Standardized assessments, such as the Compass Exam, Accuplacer, or E-write have been the predominant methods of assessment in the U.S., sometimes even used as exit assessments (see Placement Tests Rule; see also Collins, 2013). As one of the current changes taking place around the U.S., assessment is expanding beyond only the Compass or other standardized test scores to include students' High School Grade Point Averages (e.g. College and Career Ready). As a response to problems with placing students in remedial courses, including the depletion of students' funds, an increase of time in college, and low success rates, several organizations in the U.S. have come out with broad suggestions for using more than one measure and creating more assessment options (Complete College America; CRLA White Paper).

The purpose of this paper is to propose a specific theoretical framework and set of procedures that emphasize an accessible, dynamic, process-oriented assessment to inform placement decisions and track students' development of academic English competence and critical thinking over extremely short (one to six minute videos) and longer periods of time (see Scribner, 1997a; 1997b; 1997c for an accessible, comprehensive summary of Vygotsky's *sociocultural/historical approach* to mind, literacy, and social practice). This assessment system is not intended to replace assessments already in place. The objective is to supplement whatever assessment system already exists and provide a more authentic, *embodied* portrayal of the test-

takers ability to do critical thinking work with sentences and vocabulary (e.g., more involvement of the human senses and real physical movement across different media and social spaces).

For the proposed sentence completions as assessment and the summary data presented, *competence*, of course with many limitations yet to be explored (see Nunn, 2015, see also Sivasubramaniam, 2015), is measured through observing students' actual practice across multiple media and modes (e.g., speaking, writing, video). For the proposed assessment, students enact *competence* by creating and explaining meaning from partially complete sentences. These partially complete sentences highlight a specific vocabulary word from an academic word list selected by Nist (2010) (see also the New Academic Word List and Vocabulary Exercises for the Academic Word List). The current working framework and procedures have evolved from two single descriptive case studies (Unger, 2007; Unger, Liu, & Scullion, 2015b), and several descriptive-exploratory case studies with two cases in each study (Unger & Walter, 2010; Unger & Scullion, 2013; Liu, Unger, & Scullion, 2014; Unger, Liu, & Scullion, 2015a). Also, practice activities from Nist (2010) and suggestions on patterns of vocabulary in context from Langan (2013, pp. 13-16) heavily influenced the procedures.

All of the data from these adult classroom-based studies involved participants creating meaning with visuals during video recorded presentations. All data were collected from classroom lessons with specific language and content learning objectives (e.g., Content and Language Integrated Learning; Content Area Literacy). All studies involved adults who did not have English as the L1. Participant data presented in this paper ranged in academic literacy and levels of English competence from one student who was a graduate student working on an MATEFL degree in Southeast Asia, to students in pre-college reading and writing courses for academic English in the U.S. For the research questions and data presented, the focus is on the relationships between supporting details, main ideas, and thesis statements, which revolves around the relationship of evidence and propositions, the foundation of critical thinking (Hohmann & Grillo, 2014; see also Scribner 1997e for specifics on *syllogistic reasoning*). Moreover, all studies explored a variety of foundational Vygotskian related theories (Vygotsky, 1978; Robbins, 2003; Wertsch, 1998) and tangential ideas from different strands of second language acquisition theories, semiotics, and other related areas (Pierce, 1991; van Lier, 1996, 2004; van Leeuwen, 2005; see also Gibson, 1979). All studies brought these perspectives together to explore classroom applications of Michael Tomasello's (2003) concepts of *Joint*

Attentional Scenes and *intention-reading* (see also Tomasello, 1999). The purpose of bringing these theories into classroom practice is to understand how student-participants designed and created specific interpretations of meaning from different types of academic texts and rhetorical styles (e.g., argumentation as expressed in newspaper editorials; summaries of social science and humanities texts).

For this paper, research questions are exploratory, though moving toward explanatory with Figure Five, which is a working model of adult literacy and language (i.e., sign system) learning, which will be described in more detail in the Results/Discussion section of the paper. As with the other related objectives and purposes, the teaching goals are to improve the positioning of language, visuals, and students to prompt an effective environment for learning formal academic language and critical thinking. Beyond Case Karen and Case Mawng, who were from two different, yet related studies, the sentence completion activities are a proposal without any participant-data collected until Human Subject's Protocol is submitted and approved. For this paper, the related webpages, other published cases, and data presented in this paper, the intention is to collectively present readers with a theoretical and procedural foundation for the proposed Sentence Completion Activities, which are still undergoing further adaptation.

The foundational data and materials presented in this paper include the three video-recorded segments of participants summarizing; the model sentence completion video and directions, Power Point presentations, working directions and rubrics, and links to published cases and raw data from those cases using the same broad approach (see Yin, 2009, for in-depth discussions on multiple cases, validity, and reliability for case study methods and design, although my interpretation of his methods and merging with Stringer's 2014 approach to action research are taking the methods into a more ethnographic domain).

For some researchers and academics in various self-defined theoretical niches and borders, the mixing of ethnographic, case study, action research designs, and various theoretical perspectives cause academic discomfort. However, many of us are in the midst of four to five courses a semester are trying to create more effective lessons. How can we avoid bounding cases, taking an action research perspective, mixing theoretical perspectives into workable classroom strategies, and not be participant observers in an ethnographic, lived experience. Although these different approaches to qualitative and ethnographic perspectives can be nicely diced into neat chapters and bordered categories to be taught to undergraduate and graduate

students, the realities in developmental classrooms with the current chaotic systems of placement, necessitates this mixing of approaches and adaptations of methods and theories. Teachers researching their classrooms and creating feedback cycles on process features of instructions do not have the luxury of separating our research roles, designs, and methods so clearly.

Case Mawng is used to illustrate the theoretical framework and the historical relationship of earlier research to current research. Case Karen is used to illustrate how the sentence completion activities and procedures are a compressed version of the summarizing activities and/or thesis-sentence and essay writing activities. This literacy work is present in one form or another in all of the cited papers. Moreover for comparison purposes and to demonstrate consistency in these triadic arrangements, the data for five of the cited papers, which display raw data from ten cases, can be accessed through links presented in Appendix A. Each Webpage has slightly different versions of the directions, participants' videos, rubrics, and related Power Points, warts and all as they say.

The point is, I am trying to make this as sincerely open and accessible to adjust for different teaching/learning situations, or for other researchers to take the data and go in any direction they want with it; in fact, in a completely different direction than myself and my colleagues, with respect, I hope. Serious issues worldwide are inhibiting human potential due to a lack of transparency and sincere collaboration on literacy and language learning issues, limiting the potential of billions of people. I truly believe (quite naively so, I suppose) that we must be more open, less competitive, and less political in our approaches to language learning and critical thinking. If we do not, the consequences should be obvious as another refugee drowns in the illiteracy of political mayhem and destruction. I believe, and I'm sure I'm not the only one, that high levels of literacy; for example, the ability to comprehend complex sign systems, like chemistry formulas, calculus equations, or construction blueprints, and the enhancement of critical thinking, is the most hopeful path to counteract thousands of years of political, religious, and ethnic conflicts.

All of these papers, documents, and data collectively provide a historical record of how *we* (i.e., study participants and co-authors) led me to the sentence completion activity as an assessment. For the remainder of the manuscript, the current collections of data from twelve cases across six papers will be generally referred to as Unger et al. I apologize for what might

seem as self-citing mania; however, for case study research, publishing multiple cases with comparative points of references is crucial for validity and reliability (Yin, 2009). Moreover, this continual referral back to prior research provides more transparency to a very long project involving participants, colleagues, and reviewers who have all contributed to arriving at this phase of the research (see also, Nunn, 2015 for more on developing a dynamic and *historical record* of theory and concept development; see also Sivasubramaniam, 2015 for an excellent argument for moving the research in SLA in new directions). The objective of this phase of the research is to move the framework and procedures into a practical and accessible assessment protocol. This involves moving beyond statistical measures to identify specific process- rather than product-only assessment opportunities.

The overall approach to the data and assessment emphasizes "interpretation and empathy" rather than "prediction and control" (Harré & Gillet, 1994 p. 21). This means much more direct involvement of participants and researchers in outcomes rather than with experimental and quasi-experimental designs. As I present the theoretical approach and methods, these distinctions will be clearer, along with the applications of Vygotsky's and others' ideas in many of the already-cited papers.

With the ongoing interpretations and reinterpretations of Vygotsky's theories over the years, I have worked toward flexibility, but my interpretations are my own exploration, of course, always in collaboration with near and distant others (Bakhtin, 1981); some with whom I have had severe politically-based conflicts with, who, nonetheless, taught me a great deal; for that I am grateful. However, I am responsible for many mistakes along the way between two high-dose chemo, autologous stem-cell transplants and the reading and marking of thousands of sentences from developmental/ESL learners. The point is, I have tried to provide a transparent path, despite the many imperfections in this body of work.

Transparency is emphasized from the literature review to research questions to lesson plans to data collection, analyses, results, and an open-conclusion: applying research to practice in classroom situations is an ongoing, never-ending process. As mentioned throughout this and other papers, these data and interpretations are intended to supply avenues for further exploration and applications of digital cameras and other multi-modal tools. This is classroom action-based research (Stringer, 2014), which has mainly occurred during the day-to-day life of students,

lessons, learning, and teaching. Access to raw data is offered to readers, allowing judgments of validity, credibility, and reliability to become a part of reading the manuscript.

To summarize the approach here, among other reasons, I am inspired to flexibility in the use of Vygotsky's and other scholars' ideas in the classroom by Robbins (2003), who proposed that:

> Vygotsky did not want to be prescriptive (apart from describing the stages of crisis in child development), and this is a reason that there is no single Vygotskian method. To go one step further, each educator needs to establish his or her own Vygotskian method that is different from anyone else's. (p. 6).

Research Questions

Summarization activities were chosen, along with responses, because writing summaries is a major part of any literacy curriculum in developmental ESL types of courses and regular remedial courses, nationally and internationally (Hacker & Sommers, 2011). Using the writing of summaries and responses as a starting point, two broad exploratory/explanatory research questions are guiding the efforts to put together an assessment instrument:

1) What does the evaluation of evidence to propositions look like in a summarization activity?

2) How can the evaluation of evidence to propositions from the summarization activity be incorporated into an assessment tool?

Background Literature

One of the most challenging steps in building a broadly-based classroom assessment/teaching activity is the sheer volume of literature out there on college readiness, digital video cameras in the classroom, and assessment. Due to the size of the ongoing project, the background literature is compressed into three sections with an emphasis on in-depth summaries of several papers more than a standard broad review; this also allows for a deeper involvement of other's ideas into the present iteration of the procedures. The sections of the review are divided into College Readiness, Assessment, and Digital Video Cameras. As much as possible, I chose only a few studies and position papers with broad background references directly relevant to foundational college-level English courses for ESL/EFL students and adults

from mixed populations of learners. Many of these students speak a different language in the home or speak English at home, but are unprepared for the rigors of college-level reading and writing for one reason or another. Most important for the current phase of this research is finding research and position papers that implicitly or explicitly acknowledge the interconnected nature of reading, writing, and critical thinking. Also, the literature search included papers that have practical ideas on how to support learners with authenticity through having students perform actual work with language across different modes (e.g. oral speech; writing) and different media (e.g., paper and pen; Learning Management Systems; video and audio recordings) (see Glossary of Multimodal Terms: A MODE Initiative).

College Readiness

Across academic disciplines and applied technologies, students who speak English as an additional language and/or graduated from high school outside the U.S., must interpret and express specific author intentions, proposals, and evidence with all manners of expository texts and disciplinary perspectives (Fang & Shleppegrell, 2010; Holschuh, 2014; Moje, 2008; Shanahan & Shanahan, 2012). As a matter of college readiness, students need to learn how to ask a number of self-evaluative types of questions of their own writings and many questions about the writing of others (Tierney & Garcia, 2011). For example: Are their supporting details strong enough? Are they making a valid argument? Can they articulate why one specific supporting detail is stronger than another? Again and again in the literature and in pre-college textbooks written for transitioning students from high school to college, the ability to summarize and to find evidence for supporting responses from a wide variety of texts are crucial to college readiness (Mahurt, 2013; Beil & Knight, 2007; see also Hacker & Summers, 2011; Rose, 1989)

According to Hohman and Grillo (2014), critical thinking is "the ability and willingness to test the validity of proposals" (p. 36). Beil and Knight (2007) point out that college professors expect students to write at very high levels of critical thinking, explaining to a particular audience why one proposal or another does or does not work based on the students analysis of a specific text. Then students provide solutions to problems and questions with strong supporting evidence (see also, Donham, 2014). High school students' expectations, including those learning English as a new language, are surprisingly unrealistic with regards to the actual weaving together of the researching, reading, writing, and critical thinking they are expected to do once they arrive at college (Beil & Knight, ibid; Ivey, 2011; Odo, D'Silva & Gunderson, 2012).

One of the main concerns relating to research in post-secondary, developmental education is if the research includes and acknowledges adult learners of English as a new language. Overall, particularly in community colleges in the States (Becker, 2011; Conway, 2014), the populations represented in the literature include a large number of adults learning English as a new language. What is most striking with this population is the diversity in formal schooling backgrounds with or without critical thinking and writing at early stages of language development. Many immigrant learners and their need for education, mainly depend on whether they graduated high school in the United States and, as would be expected, their socioeconomic backgrounds (Conway, 2014). Also striking about these immigrant groups of students is the tremendous diversity in several characteristics and histories including: What languages are spoken in the home? Is anybody in the family college educated? What kind of background in the first language does the student have? Can they read and write in their mother tongue and at what level of formal schooling did they complete in their native countries? Did they graduate high school in the States or in the country of origin? With the tremendous amount of worldwide migration occurring in our times, these are not just local isolated issues; these are worldwide challenge to literacy education (Becker, 2011; Hahn, in press; Odo, D'Silva, & Gunderson, 2012) All of these factors influence critical thinking abilities.

As mentioned throughout the manuscript, critical thinking, particularly with the focus on students explaining the relationship between the supporting details, main ideas, and thesis statements is a crucial area of analysis, specifically in the videos when students can be seen explaining the relationships of main idea to supporting details in the data. I am currently moving the overlapping critical thinking and language analyses more into the direction of how Scribner (1997e) worked with literacy and syllogisms with the Vai tribe in Africa, extending Vygotsky and Luria's work with Uzbeks using categorization schemes and closely related syllogistic reasoning tasks (Luria 1976; 1979).

Work related to Paul & Elder (2006, as cited in Hohmann & Grillo, 2014) is also relevant to the current research, but the links to Paul and Elder's work as of this iteration of the approach have not been pursued. However, after I came across the Hohmann and Grillo's research, I contacted Critical Thinking.Org and have permission to integrate some of their ideas into my later work with the sentence completion activities. For the moment, it is beyond the scope of the current research to bring Paul and Elder's work into this study, but the Foundation for Critical

Thinking Logic Model is applicable to the current research or any research involving critical thinking.

Overall, the literature on the college readiness of incoming learners in the U.S. highlights the disparity between what students are expected to be able to do with text and what they can actually do. According to a wide range of literature (Holschuh & Paulson, 2013), students need more profound engagement with text, particularly after having climbed through test-driven, commercialized, K-12 experiences (Ivey, 2011) or other types of constrained approaches to literacy (Gruenbaum, 2012).

Assessment

Sullivan and Neilson (2009) describe the research on assessment and placement as "extensive and notoriously ambiguous" and that "definitive answers about assessment are hard to come by" (p.2). Using a huge data set from over 3000 essays, ACCUPLACER test scores, and grades, Sullivan and Nielson (ibid) looked to clarify issues of assessment and placement by using student assessment essay questions and ACCUPLACER SCORES to place students "accurately" (p.2). The normal protocol for placement was for students to produce responses from short readings; then faculty graded the essays using a rubric. As enrollment increased, of course, this became an unwieldy process; during this period, students also took the ACCUPLACER.

According to their research, students who had high scores on the essay assessment also had high scores on the ACCUPLACER: ". . . for each increase in an ACCUPLACER TEST SCORE there would be a corresponding increase in an essay score" (p.3). One of the more interesting findings was that authors discovered that the ACCUPLACER placed an emphasis on critical thinking, as did the faculty. They also came to the conclusion that *accurate placement* ". . . may be impossible to measure" (p. 8). They conclude by proposing that students be grouped together by "similar ability levels," (p. 10), broadly interpreted. That is, rather than make super fine distinctions with individual assessments, students with a wide range of similar language and literacy abilities should be grouped together. Also, the authors suggest that effort now spent on assessment should be spent on student support and curriculum development once students are placed, accurately or not. Of course, with regards to their original questions, the authors concluded that: "*A writing sample is not necessary for accurate placement"* (p 10. Italics in original).

Sullivan and Nielsen (ibid) bring up the very contentious issue of using standardized tests to assess language, literacy, and how to place students at the level they belong. Can an electronic system of grading replace a human system? One of the major issues Sullivan and Neilsen mention is the lack of funding for building an ideal assessment and placement that would involve multiple measures, much more student engagement with counselors, and a written faculty-graded essay along with some kind of standardized assessment, like the ACCUPLACER.

Dikli and Bleyle (2014) reported a negative experience with Criterion software, a system that provides automatic scores and feedback rather than a placement system. They also were working with a similar type of mixed population as covered in the Unger et al. research cited. This multilingual, multicultural population, depending on local context, has been around ESL Adults learning English as an additional language for years, and in some EFL contexts in different circumstances. However, now this population seems to be differentiated by the term Generation 1.5 (Rumbaut & Ima, 1988, as cited in Dilkli and Bleyle, ibid).

Dikli and Bleyle found that the Criterion system missed "wrong or missing words" "ill-formed verbs," and a category called "proofread this!" which indicated an array of unusual errors that interfere with communication (see Table, p.8 in Dikli and Bleyle). Of course, other problems with Criterion were reported, but those categories were the most striking. Overall their review of the research and their study provide more force to the remark made by Sullivan and Neilsen (2009) that "definitive answers are hard to come by" (p.2). Also, their paper provides an informative reference for situating much of the other conerning standardized assessments with such complex populations. Despite the small size of their study, Dikli and Bleyle (2014) provide enough evidence to avoid Criterion for the time being because the auto-scoring system simply does not provide the kind of intensive support needed for college success.

The sentence completion activities proposed as an assessment is a compressed version of the larger activity. This will be explained more thoroughly when the related literacy procedures and materials are presented. It is interesting to note that Sullivan and Neilson (ibid) concluded that both the ACCUPLACER and faculty were measuring "a student's cognitive ability" (p. 3). They assert that when students are working at the sentence level, they are asked to "recognize complete sentences" and "distinguish" between different logical sentence structures, dependent, and independent clauses and other grammatical features (ibid, p 4).

As much as I personally think the Sullivan and Neilson (2009) study is worthwhile, terms such as "recognize" and "distinguish" express a lack of depth that an embodied interactive measure of "cognitive ability" can provide. Activities that involve *recognizing* and *distinguishing* express the assessment differences proposed by Cheng. et al. I will return to this point later. The remarks Sullivan and Nielson made, that critical thinking tasks can be embedded into sentence-level exercises, is relevant to moving the larger summary into the smaller sentence-level assessment, which for the proposed assessments in this paper, emphasizes academic vocabulary.

The textbook for vocabulary used in most reading courses was (Nist 2010), which presents some sentence completion tasks as assessments and uses vocabulary from the Academic Word List (AWL). This is what the current sentence completion activity uses and will continue to use as quizzes are designed for different students, disciplines, and levels of English competence. Specifically, "The AWL is a list of 570 word families. An example of a word family is *benefit*, *beneficial*, *beneficiary*, *beneficiaries*, *benefited*, *benefiting*, and *benefits*" (Coxhead, 2011, p 355; see also Selected vocabulary: Academic word list; see also A New Academic Word List).

To begin citing off the various numbers that illustrate the size and capacity of the AWL is a needless understatement; the AWL is an incredible resource, digitally within reach of many populations. Coxhead (ibid) goes into great detail about how the vocabulary lists have evolved to express words in disciplines, such as engineering, medicine, biology, and others. Teachers and students have access to knowing what kind of vocabulary they need to learn to function in formal English language situations in college and beyond. The possibilities of a using a resource like this for learning and assessment are endless. Furthermore, the AWL list can be an important addition to the pool of resources for defining *academic language* (see Baumann & Graves, 2010 for an effective looking proposal on how to arrange and work with academic vocabulary; see also Graves, Baumann, Blachowicz, Manyak, Bates, Cieply, Davis, and von Gunten, 2013 concerning strategies for choosing what vocabulary to teach in K-12 contexts, which has applications for ESL/EFL contexts).

Cheng, Rogers, and Wang (2008) investigated seventy-four university ESL/EFL instructors' assessment practices across three very different contexts: Canada, Hong Kong, and China. Cheng et al. used interview data to gain a wide perspective on the specifics of university ESL/EFL teachers' approaches to assessment. The questions ranged from "planning" the

assessment; the "weight" of the assessments compared to overall grade; "methods," "purpose," and timing (p.11). Cheng et al. found that "a relationship exists between the instructional contexts of an ESL/EFL program and the assessment methods used" (p.24).

To discuss and measure differences in these wide ranging contexts, Cheng et al. use the terms, *selection methods* and *supply methods*. This is a distinction in how learners respond to the assessment: do learners make a choice, as in a matching or multiple choice types of exams, as in the selection method, or do learners construct responses as in oral presentations, journals, or sentence completion items. Relevant to the context and place of the current study in what may be cultural styles of teaching and learning, there were many more instructors in Canadian contexts who did summaries and sentence completion activities than instructors in China and Hong Kong. Cheng et al. suggest in their conclusion that much more research is needed in the area of assessment, which is "a victim of gross neglect" (Stiggens p. 10 as cited in Cheng et al. p. 25).

Overall, the literature on assessment covers a huge range of areas, from self-assessment (Baleghizadeh & Masoun, 2013; Neilson, 2012) to peer assessment (Tsai & Chuang), to standardized assessments (Serravallo, 2014). As I continue to swim through a sea of literature on assessment without many clear answers, I keep returning to the straightforward statement by Sullivan and Neil (2009), which should be seared into the minds of our political ruling classes and their corporate sponsors: "definitive answers about assessment are hard to come by" (p.2). However, if we take the Vygotskian idea that "Any psychological process, whether the development of thought or voluntary behavior, is a process undergoing change right before one's eyes" (Vygotsky, 1978, p. 61) and combine this with the power of digital video cameras and other forms of recording development over time, we can provide our students and the general public with a more authentic, dynamic, embodied perspective on language and literacy learning (see the Journal of Language and Literacy Education, JoLLE@uga, Volume 11 for an issue of rich, informative papers with this theme of embodied approaches to language and literacy).

Digital Video Cameras in Classrooms

As with the other areas of the paper, there is a huge body of literature on digital video cameras in classrooms, but most of the research seems to involve students with editing software or full production projects, which is not the goal at all of the present project, mainly due to time and curricula constraints. Some of the more useful articles relevant for the present project are those that discuss the students in the videos as being in the position to teach others in *reciprocal*

teaching types of situations (Palinscar and Brown, 1984; see also Wertsch, 1998) This includes educational opportunities to use digital video cameras for math word problems, which is an avenue for further research addressed later in the paper. Also, several articles mention metacognition in contexts where digital video cameras are used for instruction. As with the others articles reviewed, those most applicable to the ongoing research were chosen.

One study of relevance, specifically with regards to negotiating meaning and prompting learners to create responses in writing at more advanced levels of academic writing, or to put this into Swain's terms, *pushed output* (see Swain, 2005), is a study from Jernigan (2012). He looked at how students became aware of pragmatic competence through observing video vignettes. One group, the "+ output group" (p. 6), wrote down what was said and read from transcripts and what they remembered from the vignettes. The learners in the +output group were prompted to attend more closely to specific features of the language—for this study, accuracy—and to shape messages to fit the context (i.e. pragmatics). The effects were positive on perceptions of pragmatic features shown in the video vignettes and the ability to express these pragmatic features of language. Jernigan's study, among others, supports the idea of positioning language and learners in an active, integrative manner with video, with an emphasis on working across different media and modes.

Another study that delves into pragmatics is Galante (2014), who takes a project approach to using digital cameras. That is, as with many studies and papers where videos are used as teaching and learning tools, students delve deeply into the actual video recording process (see Mahdi 2014, Majekodunmi & Murnaghan, 2012). One of the many challenges that Galante (2014) faced in Canada, as with any educational situation with multiple languages and cultures, was interweaving culture and language teaching into instruction while increasing cultural sensitivity. Her solution was for students to make videos about what are called *critical incidents* that occurred to them as they were adjusting to life in Canada. Galante (ibid) describes critical incidents as an event that occurred due to a misunderstanding grounded in culture or language. Galante chose critical incidents to prompt students into identifying with cross cultural or language issues, These issues were important enough to students so they would analyze how their beliefs and value systems compared to others in the community (see also Freire, 1970, as cited in Galante). To accomplish these multiple goals, a five step project was piloted and a

fourteen week course was designed. These steps were: 1) "Reflective Discussion;" 2) "Script writing;" 3) "Video recording;" 4) "Editing the video;" 5) "Watching and reflecting" (p. 58-61). As I have been slowly going through the literature on digital video for several years now, work like Galante's represents the ideal for reaching across language, literacy, and cultural domains while promoting critical thinking.

For the current research, while students create a one- to five-minute video summary, response, or outline of short essays, they capture bits and pieces of the central steps Galante mentions, excluding editing (though sometimes students make a second video). Galante's theoretical foundation emphasizes an overall social and cultural wellness approach, moving students into a healthier, less ethnocentric and more tolerant and open view of others. Another major difference between the current research and Galante is that her video-approach consumes an entire fourteen-week course. While collecting the data for the current paper, I decided to have students do two short videos a semester, which involved about two classes per video. With some groups who were prepared with out-of-class steps, I have had fourteen to eighteen students complete the video recording and upload these to the Learning Management System in a single hour and fifteen minute class; other classes…well. So as with much of the research I have reviewed, the time needed to learn editing software and have the computer resources is an prominent issue (Galante, 2014; see also Ranker, 2008)

Ranker and Mills (2014) provide an excellent formal-conversation/discussion about what is going on with digital camera projects in different parts of the world, particularly with those using more *embodied* notions of how language and literacy unfolds in day-to-day life (see JoLLE Volume 11 for related articles on the embodiment of language; see also Tomasello, 2014). Ranker and Mills complement, describe, and review each other's work in a number of areas, providing an excellent list of studies and resources during their conversation (e.g., Cope & Kalantzis, 2000; Mills, 2010; Ranker, 2010). Moreover, Ranker and Mills (2014) mention opening up new *spaces* (i.e., new ways of thinking and physical areas of literacy practice) across different modes, which in turn provided the students with a more embodied experience with language and literacy. Mills discussed collaborating with Luke's (2012) "sensory walks in the neighborhood," with indigenous tribes in Australia (Luke, 2012, as cited in Ranker and Mills, ibid, p. 441). Mills had this to say about the experience:

> I gained a heightened awareness of the sensorial and material dimensions of both Indigenous ways of connecting with the land and through artifacts. But I also observed how documenting sensory experiences using cameras is distinctively an embodied literacy practice. (p. 441)

Ranker and Mills (2014), as with Galante (2014), Ranker, (2008), and many other studies (see Mahdi, 2014 for a wide review of the literature) present circumstances where creating videos is much more of an in-depth time consuming process, and for the current research and related papers (see Unger et al.) the videos are a supplement to the curriculum and take up as little time as possible. Most of the research on digital video seems to be dominated by digital storytelling and very involved projects, though some work, as mentioned previously, positions the students as teacher (Meyer, 2014), which is the prominent characteristic of reciprocal teaching (Palinscar & Brown, 1984). Other work with digital cameras emphasizes *metacognition* (Bene, 2014); that is, the ability to think about one's own thinking (Flavell, 1976, as cited in Bene, ibid). Also, as mentioned earlier, there is a body of research similar to the research discussed by Ranker and Mills (2014), where student-produced videos are used in the composing process across different levels of English language and literacy competence (Pandya, 2012). Much of this digital video camera work seems to belong to what has been labeled as *New Literacies* (Lankshear & Knobel, 2011; see also Luke, 2012).

Generally, at the institutions in which I have worked, colleagues, administrators, and students seem to be skeptical of using video at all, though there seems to be many people writing papers on using video in classrooms. However, as reported in the literature review, most activities use much more time on video-editing. All that said, other variations have been tried, and are continuing to be attempted, particularly when students miss class. One variation is the flipped classroom type of lesson (see Flipped Institute) where videos or other materials provide content instruction out-of-class (e.g., lectures and readings).

For the current research and lessons, students are often prompted to watch their own video outside of class, and then are guided into how to do self-evaluation steps in class. During the writing of the current paper, these past videos have been used as models for students to watch; then students are prompted to compare their own summaries and outlining to students' videos from prior years. Through the current academic year, I am using these videos across

several classes to model the steps for summarizing, responding, and brainstorming and outlining essays. These models are presented in a flipped-class kind of format.

Other variations on this standard activity have been useful when students miss the day we film the video. Several students used their smartphones while at home to film very small visuals on pieces of paper and pointed at the small visual with a pen. One day I tried this with the flip-video cameras in class, but many of the older cameras (Vivitar 865) seemed unable to focus with the close proximity of camera to the sheet of paper. This is an interesting contrast to the normal procedure of using large poster-sized visuals and having participants stand next to the visual and point out items with one hand (see Case Tim password rabbit15, for this variation on the webpage of data and resources that accompany this paper; scroll all the way to the bottom).

With sentence completion activities and all types of other activities, I have always tried to encourage this triadic relationship expressed by Figure Five (discussed extensively later in the paper), which follows along with Tomasello's (2003) ideas about the nature of social cognition. Since about 1995 I have been arranging students in triadic relationships with visuals, well before I had heard of Tomasello, Vygotsky, or much beyond some basic teaching knowledge.

Currently as of the writing of this paper, I will often have dyads or triads of students complete one incomplete sentence with meaning that supports a new vocabulary word in the sentence; then I prompt them to take turns talking about how the second part of the sentence supports meaning, or I have students write a second sentence that supports meaning. Several dozen other activities have evolved this way, with students standing next to visuals explaining grammar relationships or critical thinking. In an idealistic way, I encourage students to look at their sentences as if they were admiring pieces of art in an art gallery. Naturally, I think my prompts for them to look at their writings this way is probably my own fantasy. However, one of the major purposes of the ongoing research is to transform perceptions of language and literacy to a more embodied, semiotic perspective (see also van Lier, 1996; 2004)

On a related note, a co-author on earlier papers let his students use their smart phones rather than the standard cameras, and this has gone well with him. In addition, a colleague in Japan, who also reviewed an earlier paper related to these video activities and has some prior experience with videos, tried this activity with his Japanese students. He reported some success in engaging students and looking at the possibilities of using video in a different way (see Mueller, 2015, Using videos in the classroom: Learning a few new tricks).

The Theoretical Framework as Classroom Practice

The overall theoretical framework and approach to the data has evolved from some well-known Vygotskian sources (Vygotsky, 1978; Luria, 1979), later work from Wertsch, (1998), Robbins (2003), Bakhtin, (1986), and van Lier (1996; 2004). This foundation has been further informed through the years by usage-based, functional approaches to language learning (Tomasello, 2003; 2014). The theoretical framework has also been heavily influenced by social semiotics (Van Leeuwen, 2005) and activity theory (Davydov, 1999). From these varied, yet relatable perspectives, the major assumption about learning and development is that human reaction to stimuli is not direct. Humans use signs, sign systems, and a great many social, cultural, and historical influences to position themselves to specific perceptions. These positions and perceptions are managed and organized through an infinite collection of interwoven literacy, perception, and intention-reading domains. (see Tomasello, 2003 Wartofsky,1979; see also Lakoff, 2002; see also van Leeuwen, p.277).

This rendering of social relationships, our socially-oriented ways of communication and concept formation, are the key to understanding universal patterns of language learning. (Tomasello, 2003; 2014). In one way or another, the creation and profound use of signs is what makes us human (Pierce, 1991; Scribner, 1997a; Tomasello, 1999; Wells, 1999). The process of sign creation and use is an authentic, informative area to begin to investigate the creation and interpretation of meaning in and out of the classroom.

Signs and Signs Systems, Signification, Mediation

Briefly, signification can be understood as defining and assigning meaning to oneself, others, and objects, and through this process, begin to create signs and sign systems (Vygotsky, 1978, p 52; van Leeuwen, 2005, pp. 48-49; van Lier, 2004, p. 57). According to Eco (1976,), a sign is "*everything* that, on the grounds of a previously established social convention, can be taken *as something standing for something else*" p. 16 italics in original, see also Peirce, 1991, p.141). Of course, as demonstrated in this and other related case studies (Unger & Walter, 2010; Liu, Unger, & Scullion, 2014), although the definition and process of signification sounds simple, human interaction is created through an infinite array of substantial human posturing and positioning to each other in any immediate human context (see Harré and van Langenhove, 1999).

Closely related to signification (if not inseparable) is mediation. Signs and sign systems *mediate* all human activity; one of the prime examples is language (Scribner, 1997a; see also Pierce, 1991). However, these *meditational means* can be as simple as knowing the D means drive for an automatic transmission, smartphones mediating time and schedules for a busy teacher rather than a paper calendar and sticky notes everywhere, or as complex as symbols for welders or medical codes for insurance companies. The predominance and profound effects of *mediated activity* on all our lives and histories are often brushed aside when standardized judgments are made about communicative events.

To summarize the approach to signification and mediation adapted for the ongoing research, through the process of signification, humans co-create *meditational means* to monitor and regulate goal-oriented activity in the world. They co-create mediational means with each other and artifacts, with past, present, and future selves, and with immediate and distant sociocultural/historical contexts, (Scribner 1997b; Robbins, 2003; Wertsch, 1998; 2007; see also Tomasello, 1999; van Lier, 2004). This process is not as simple as it can be made to appear in ordered program reviews, quasi-experimental research designs, and detailed yearly assessment outcomes, all of which can be linked to funding (i.e., money and power).

Reference Areas for Multiple Case Comparisons and Gesture

Over the past decade and a half of collecting, transcribing, analyzing, and reviewing video data of student interactions, most often prompted by myself or research associates, along with related student work, three closely interrelated reference areas have become identifiable and useful to guide analysis. As mentioned frequently throughout the manuscript, these reference areas are: Speech, a Visual, and the Act of Pointing. Although these terms are intended to be partially understood through their common meanings, through the presentations of various cases with different theories and contextual circumstances emphasized, these reference areas for analysis and comparison have been gleaned from other language/literacy theorists' work (e.g., Bakhtin, 1981; 1986; Kita, 2003; Robbins, 2003; Tomasello, 1999; 2003; van Lier, 2004; van Leeuwen, 2005; Wertsch, 1998)

For the overall video, document, and developing research with math word problems, Speech is a reference area to include written text and other patterned signs and sign systems (the term "text" becomes interchangeable with Speech during analyses and discussion, depending on the discipline and/or technology). Speech as signs and sign systems become interwoven with oral

speech during different types of communicative events. A Visual is another broad reference area to assess the interactions; visuals can be either explicit or implied. Typical examples include Power Point presentations, handouts, movies, stained glass church windows, mosaics; religious icons, smart boards, whiteboards, and all the other explicit visuals continuously present in all communicative events (gestures often becomes the main visual during interactions, see McCafferty, 2012). Implicit visuals also have infinite interpretations and comprise metaphors and imaginary worlds expressed by storytellers, Hollywood directors, politicians, and all manner of humanity to push and pull each other, lovingly or not, to one interpretation or another, and perhaps to physically act. . . or not. Implicit visuals, often supported by different types and moments of hand and body gestures (spontaneous or planned), and other embodied activity, are also present in all of the data, but further analyses is beyond the scope of this paper (for more precise details, see Unger, 2007; Unger & Walter, 2010).

Finally, the Act of Pointing has been found to be another salient reference area for analysis. Acts of Pointing include the obvious and purposely-chosen pointers with white plastic hands with a pointed index finger on the end of a twenty-four inch aluminum rod. These pointers were used in much later data collection than with Case Mawng (see Figure Four of Case Karen). Although the direct, explicit pointing is an important reference area for analysis, and encouraged in recent iterations of the procedures, Acts of Pointing also include eye-gaze and body position to specific narratives or explanations (Kendon 2004; Kita, 2000; 2003; see also Unger & Walter, 2010).

As students shift to writing with different types of visual screens (e.g., tablets, smartphones), they are prompted to be mindful of fonts, colors, music, and any other means that can be linked to emphasizing one chunk of information over another (e.g., lol). In addition, all the procedures and activities in the data presented with this paper emphasize transition words and phrases (e.g., on the other hand; for example) and words and phrases to introduce quotes (e.g., the author argued; according to the author). Moreover, students are made aware of how the Act of Pointing is related in many subtle ways to expressing the relationships between evidence and propositions. Specifically, as students and other stakeholders physically engage themselves in following the entire process of creating meaning with digital video recordings and other media and modes (e.g., formal summaries, responses, and essays using writing software; poster paper and colored pens), one of the objectives is to increase the awareness of the relationships of

evidence to propositions (i.e., supporting details to main idea statements and to thesis statements). Students are asked specific questions after watching their videos to become more aware of the subtleties between strong and weak evidence (see self-evaluation questions for Case Karen) Through these methods of making human activity with signs and sign systems more explicit, these concepts can support content and language learning across academic disciplines and applied technologies.

The overall framework is respectfully collapsing formal constraints on the definitions of spontaneous and planned gestures (see McNeill, 2012) to inform classroom activity with some of the gesture research. This is important to connect gesture studies to real classroom teaching problems and practical lesson-based responses. For this data segment and the overall study, several gesture categories derived and adapted from Kendon, (2012) McCafferty (2012), and McNeil, 1992; 2005; 2012) are as follows: *deictic gestures* (i.e., The Act of Pointing in the ongoing research): *beats*, which are rhythmic and often occur in moments of word searching, confusion, and emphasis, and; metaphoric types of gestures, which create abstract space and create images. These metaphoric gestures can be interpreted or are intended (or not) to *point* to specific meanings. For example, I might describe an accident I saw, and while talking I might make an *iconic gesture*, which would look and sound like a crash as I clapped my hands together in a metaphorical space in front of my body. This space in front of my body, and perhaps parts of the immediate context that I might point to, would already have been arranged in some general manner as an intersection, and my hands would be following specific imagined trajectories that the cars followed (see also McCafferty, 2012).

For the data segment with Mawng and in the ongoing studies, the area of reference for gestures is the *gesture stroke*, which is the most noticeable part of the gesture (Kendon, 2004). The gesture stroke is also one of several *phrases* in the development of an entire gesture from the moment of hands and/or arms rising and then returning to a resting position (Kendon, ibid, p. 114). For this data segment and the overall study, combinations of deictic gestures, beats, and metaphoric types of gestures, in one way or another, *point* to specific meanings and interpretations. This is displayed in the data from Mawng, though of course, with all the data, the categories of gestures and types of combinations vary with circumstances, topic, purpose, and many factors influencing any communicative event.

A fifteen-second segment of data from Case Mawng will be presented to illustrate the current proposed framework (see the video recording at Data Case Mawng password rabbit16; see also Figure One, Figure Two, and the brief transcript). This proposed framework includes the assessment possibilities and how the terms and concepts can be identified in any communicative and/or teaching situation. Case Mawng will be followed by more current data from Case Karen to provide a contrast to other cases (see Yin, 2009). These data and cases provide the foundation for the sentence completion activities as an assessment protocol. The Case Mawng Data illustrates how signification and mediation become inseparable from cognition, perception, and intentions as Mawng creates specific meaning over a fifteen second period of time (inseparable except as conceptual processes for analysis).

Mawng was enrolled in a graduate MATEFL course at a private college in Southeast Asia and volunteered to be a participant-student in a multi-case study. The study questions focused on how meaning was created from three interrelated sign systems: graphic organizers (e.g., tree diagrams, flow charts, and concept maps), speech, and gesture. For the overall summary from which this data segment was taken, Mawng's task was to summarize a lengthy academic text on a topic in which she was interested and create a graphic organizer for an oral summary/presentation of the text. She chose the history of theatre and drama as her overall theme. At the time of the study, she worked as a teacher of Thai at an international school, and in the data segment she was positioned as a teacher of content to the small audience of her fellow students (see Unger & Walter, 2010 for more specific detail).

The Data from Case Mawng as Theoretical Framework and Method

As mentioned earlier, eight terms and concepts are intended to provide an authentic theoretical framework and methodology to understand reference areas as embodied in participants' short periods of semiotic-historical time. First Case Mawng, followed by Case Karen, will illustrate the terms and concepts as classroom activity. These terms are: *signification*, *mediation*, *semiotic resources*, *Shared Attentional Frames*, and *intention reading*. In addition, the three areas of reference, *Speech*, *a Visual*, and *the Act of Pointing* are tracked across different media and modes (e.g., speech, writing, and video) in the cases in this paper and other published cases (see Appendix A). An effective method for relating these terms to teaching and real-world communication situations is to begin with data from Case Mawng and continue later with data from Case Karen.

Signs, Signification, and Mediation as a function of Mawng's Presentation

Recall that signification can be described as assigning meaning to the world and ourselves; mediation simultaneously develops to monitor, plan, and regulate the world of the mind and the world of activity; signification and mediation are inseparable from the borderless, co-constructed world of the mind, signs, and human activity. As can be seen in the video data from Case Mawng, she creates new meaning for herself and her audience through numerous cycles of signification and mediation with her immediate environment and audience.

For the data segment with Mawng and in the ongoing studies, the gesture stroke is the central reference area in the data. Recall that the gesture stroke is the most noticeable part of the gesture and also one of several *phrases* in the development of an entire gesture from the moment of arm raising to rest (Kendon, 2004). For this data segment from Case Mawng, prominent examples of diectics, beats, metaphorics, and iconics are presented in the data. Mixtures of all these characteristics of each of these types of gestures appear across all the data. However, it is beyond the scope of the current paper to go into more specific detail (see Unger, 2007; Unger & Walter, 2010 for more precise analyses and extensive reviews of the literature).

Returning to Mawng and Figures One and Two, the pen laid on the overhead projector points to the rectangle containing the main theme that Mawng is presenting at that moment: "Electric/round 20th Century". Most noticeable are the words that accompany her gestures in the video, a moment of which is captured in Figure One.

Figure One is a video snapshot of Case Mawng's gesturing while saying "you now boop boop." A pen also points to a specific chunk of language in a rectangle on a tree-

diagram/concept map on the video, displayed in Figure Two (see also the entire video recording and transcript at Data Case Mawng, password rabbit16)

Here is the original transcript without complete gesture descriptions from Unger & Walter (2010):

The Basic Transcription of the Fifteen Second Segment

1: Alright and then in twentieth century there's more like development

2. they have electric city

3. to help, you know Boop Boop, you know, help to highlight the story

Figure one happens at 13.26 of the entire 22 second video with a substantial blank start section. Figure one is occurring at approximately 6.36 seconds into the video and around the meaning expressed in lines 3 and 4.

4. to make it much more like

5. Nathanee: lights—

6. Mawng: exciting uh-huh. And the last one. . .

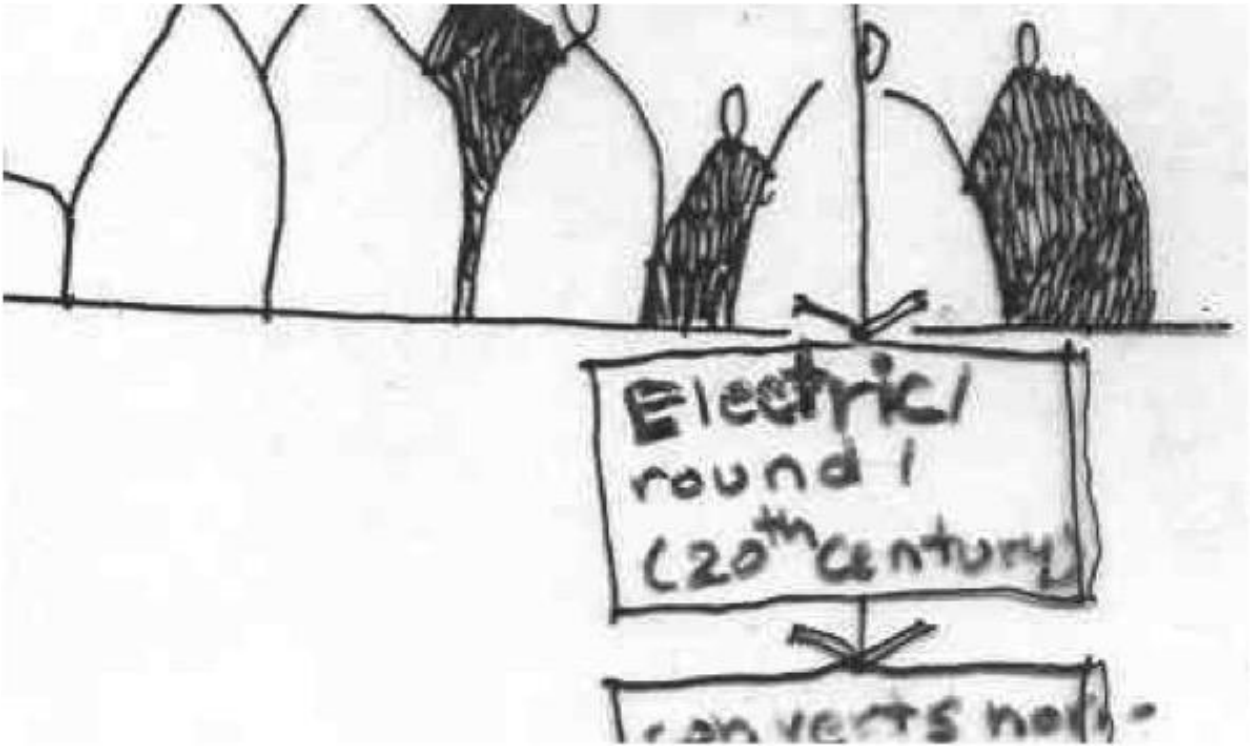

Figure Two: is the rectangle and chunks of text for which Mawng placed the pen to point to the box. (Data Case Mawng)

Several important characteristics of teaching situations or any communicative event are illustrated in this short fifteen-second segment from Case Mawng. The process of signification and mediation is illustrated by Mawng not remembering the word "lights" as she is presenting the influence of electricity on modern drama. While trying to recall the word lights she is opening and closing her hands, which during the 90s in Thailand was a common signal from children usually riding in the back of canvas-covered pickups, laughing and enjoying the morning.

I would be on my motorcycle on my way to teach, and children riding to school would laugh and open and close their hands to let me know I should turn off my motorcycle headlight, which I had a habit of leaving in the on position from coming home after teaching the night before. I saw this closing and opening of the hands happening quite often in other situations over several years teaching in Thailand. Mawng was from Thailand, as was Nathanee, who responds with the missing word "lights," following the mixture of iconic, beats, and a metaphor from Mawng. Through the process of signification, the opening and closing of the hands matches the Thai words for open and close, which is the way a Thai speaker might say "close the light" rather than "turn off the light" (something my wife, who is a Thai, reminds me to do frequently).

The hands, opening and closing the way they did, became a sign to mediate meaning in a speaker-audience context. This is similar to what often happens as teachers or any of us might do if we cannot think of a word. We begin to wave our hands rhythmically around in the air, searching for a word (see McCafferty, 2012; McNeill, 2005), the word or phrase lost in that indescribable place where momentarily forgotten words and phrases reside.

The local history of the sign as an embodied action with the hands opening and closing, created an expectation of a response. This is typical in the data presented in this paper and others (see Unger, 2007; Unger & Walter, 2010). Short histories of signification and mediation, as short as the fifteen-second segment with Case Mawng, are example of participants' integrating the meaning-potential of the local environment to try and make their intentions clear (Tomasello, 2003; van Lier, 2004). In this moment of data, the sociocultural/history of the interconnected signs, media, and modes, illustrated by Figure One and Two and the video, are acting as a

spontaneously and competently created system to mediate meaning. This relates to the idea that the development of a sign system and the creation of meaning can be observed, opening possibilities of assessment over short periods of time (see *microgenesis* in Wells, 1999; Wertsch, 1985, p. 55). Specifically, this development is expressed in the actions and words occurring around the iconic closing and opening of the hands and the oral support of "boop boop," along with the correct response from Nathanee, "lights." Of course, the history of the iconic linked to social activity outside Mawng's immediate presentation may or may not be as important part as I am proposing here. Nonetheless, at the time of the data collection, the iconic opening and closing of the hands was the prevalent meditational means to inform someone that their car or motorcycle lights were on during daylight hours in the surrounding community. This brings us to the next three terms that lead to a non-reductive assessment framework.

Semiotic Resources, Joint Attentional Frames, and Intention-Reading

Semiotic resources (van Leeuwen, 2005) is a term for the possible and actualized potential of meaning and activity through the use of different signs and sign systems we create and use (ibid, p.4). For example, one prominent semiotic resource was the iconic gesture of the opening and closing of the hands. This resource had the potential to express turning a light off in a local, visceral sense. Simultaneously, the gesture occurred with the sound, and was used with the concept map projected on the screen. Another more complex semiotic resource was expressed in Figure Two, by the arrangement of nouns in the triangle, "Electric /round/ (20th century)." The gesture and the rectangle, along with the overall tree diagram/concept map, became semiotic resources essential to the creation of intended meanings. Mawng's iconic gesture and the response from Nathanee with "lights" is a prominent series of communicative moments that express very natural kinds of triadic arrangements of humans to each other and semiotic resources. This triadic arrangment has important implications for understanding the language/literacy learning that can be observed in the data as well as daily life.

According to Tomasello (2003) ". . . joint attentional frames are defined intentionally, that is, they gain their identity and coherence from the child's and the adult's understandings of 'what we are doing' in terms of the goal-directed activities in which we are engaged" (p. 22). To illustrate the concept and slightly adapt Tomasello's description, suppose an adult walks into a room holding a familiar jar of baby food and asks, "are you hungry?" The adult and baby might

look at the jar at the same time; in this situation, they have set up a triadic type of arrangement of two interlocutors (i.e., participants in communicative situations) using a third entity to share attention. The baby and the adult both know that the activity of eating will occur; the baby reads the adult's intentions. Cognitive and social responses signify a sequence of events that occur with "what we are doing now" (ibid p. 22), which is eating. Suppose the situation changes and the adult holds a diaper in her hand when she comes in the room; the baby and the adult look at the diaper and both know that what *we* are doing now is different; it is time to change the diaper, and this involves all the related actions and objects and language that occur as a part of the activity of changing the diaper (Tomasello, ibid). Intention-reading in these triadic situations are crucial to comprehension.

Joint Attentional Scenes to Shared Attentional Frames

Due to the nature of carefully and respectfully merging Tomasello's (ibid) concepts of Joint Attentional Scenes with other theorists of language learning and semiotics (e.g., van Lier, 1996; 2004; van Leeuwen, 2005; Scribner, 1997d) to adult literacy contexts, the term *Shared Attentional Frames* is used in this and other papers as a classroom adaptation of Tomasello's term Joint Attentional Scenes. The term and concept of Shared Attentional Frames (See Figure Five) indicates a specific model that has evolved from the data and a synthesis of Tomasellos's graphic representation of the "Structure of a linguistic symbol" (Tomasello, ibid, p. 29) and Tomasello's original graphic representation of a Joint Attentional Frame (Tomasello, ibid p. 26). This adaptation, which is represented by Figure Five, and more fully explained as a part of the assessment protocol later in this paper, is intended to create a more *embodied* and authentic representation of how participants, audience, the visual, and other contextual features, are positioned to create moments of profound shared attention. Mawng and Nahtahnee created a *Shared Attentional Frame* using the prominent semiotic resources of an iconic gesture temporally near the sound "boop boop," combined with the pen pointing to the rectangle on the concept map, which also represents her entire talk (see (Data Case Mawng).

To summarize the theoretical framework, specifically as this has been applied to different types of digital data over the past decade (see Unger, Troutman & Hamilton, 2005; see also, Unger & Kingsley, 2006), humans use semiotic resources to create Shared Attentional Frames through the continuous, natural cycle of signification and mediation to complete intentional, goal-oriented activity. This process can be tracked across modes and media by monitoring three

major reference areas: Speech, A Visual, and The Act of Pointing, along with oral and written chunks of text. This process can be assessed through an emphasis on inventorying the development of semiotic resources across modes and media. These semiotic resources express participant-intentions as these intentions move through a conceptual, temporary third space of meaning. This process is illustrated in Figure Five, a working model of Shared Attentional Frames. The major concepts and terms, which along with Figure Five and the developing directions, self-assessments, and rubrics, comprise a documentary history of the entire assessment and classroom-based research up to this paper. Although this might seem unrealistic to some, the theoretical assessment and representation of embodied activity with signs expressed by Figure Five are meant to be accessible to all stakeholders For example, teachers, students, administrators, and parents; the general public and politicians who can think critically or who have the desire to think critically; that is, note the relationships between evidence and propositions. To summarize and keep these terms at the foreground as more data is presented, these terms and concepts are signification, mediation, Shared Attentional Frames, intention-reading and semiotic resources. The reference areas for tracking the development of language across media and modes are Speech, The Visual, the Act of Pointing and chunks of oral and written text. Chunks of oral and written text have the potential to be quantifiable units of analysis, which will be the focus of future research.

The Summarization and Response Activity

Throughout college students are expected to summarize and respond to text across a variety of academic disciplines. As Hackers and Sommers (2011) tell students in their introduction to a chapter on academic writing "...you will analyze and respond to texts, evaluate other people's arguments, and put forth your own ideas" (p. 67). Of course, a major part of this analyzing, responding, and evaluating involves the basic process of understanding the abstract relationships between supporting details and main ideas; in other words, students are continually evaluating evidence and putting forth their own propositions.

For these and many other simple and complex reasons, including the need to prompt students out of their chairs and put them in situations where they have to engage with academic language in a more embodied, authentic, and dynamic manner, I began exploring digital video cameras as a means to transition students from informal, oral speech, to formal written language. Simultaneously, students are working with processes of paraphrasing, using quotes as

documentary evidence, and summarizing. One of the activities I have used over the years is a *summarization of a song* activity.

Case Karen as Directions and Theoretical Framework.

Case Karen's video, all directions, rubrics, a model video, summary, and a response from the song *John Henry, Steel Driving Man* (also presented on this page) are an initial model (though with the caveat that it can be improved). This video is also presented at the bottom of the Shared Attentional Frames and Sentence Completion Activity webpage (password rabbit15), which as mentioned frequently, is the main webpage resource for this paper.

Case Karen is an example of an integrated classroom assessment and teaching activity. The sentence completion activities were developed as a compressed version of the larger summarization and essay writing activities represented by Case Karen and the displays of other cases accessible in online open-source publications (see Unger et al; see Appendix A for all raw data).

All the data from this paper and the raw data from 10 other cases in Appendix A represent different interpretations of the relationships of evidence to propositions, along with the changing nature of the activity according to student needs. The main piece of Case Karen's data used to illustrate the theoretical approach and a window into the reference areas for assessment is when she explains the relationships of supporting details to her main idea statement from her song (presented on this paper's Webpage and later in the manuscript).

For the sentence completion activities, which are presented following Case Karen, the objective is to capture similar moments of critical thinking and language use when the student-participant explains how the second or first part of an incomplete sentence, or a second sentence added to relate to the first sentence completion, supports the meaning of a specific vocabulary word. A recent adaptation since beginning this paper, has been to return to students completing one sentence with a meaningful completion that supports the vocabulary word (see Nist 2015). Of course, both versions are working models. Both versions can be seen on the Shared-Attentional Frames and Sentence Completion Activity webpage (password rabbit15).

The single sentence completions have the potential to be just as robust with regards to assessing intentional meanings as the two-sentence completions and the more time-consuming main idea and supporting detail activities such as the one completed by Case Karen. At this stage, the single-sentence completions seem to be the most suitable for assessment rather than

the double sentence activity. For teaching, I am slowly discovering at which level either strategy works (both the single and double sentence activities resulted from using Nist's 2015 vocabulary text and variations inspired by Langan, 2013).

At this phase of developing the full assessment protocol, I am referring to most of our units of analyses as *reference areas* as the assessment is worked out. Each reference area is a representative of the whole. This is to emphasize the well-known Vygotskian example of investigating water, which is the product of the dynamic interaction hydrogen and oxygen, not separate unrelated parts (Vygotsky, 1979; 2012; Wertsch, 1998). If we divide the water up into individual elements of oxygen and hydrogen, we no longer have water (Vygotsky, 2012).

The sentence completion activity as an assessment protocol is intended to maintain reference areas as representations of the compressed larger activity, though specific units of analyses will be defined as the methodology is further explored. These are the general versions that Case Karen and others follow. These Directions are continually tweaked, and students do variations on their own. In fact, the current emphasis on moving students completely off the video and pointing at information was inspired years ago by comments, actions, and adjustments from a bright, young Navajo man who was in a developmental reading course and was studying welding at a branch campus of a university in the southwestern U.S.

Student Directions for the Summary and Response Video: The Directions as Stimuli

As in the model video, introduce each Supporting Detail and provide an explanation by using the following general language forms. Do not worry about being too formal. Remember that we are actually producing an oral rough draft of a Summary and Response.

1. Read your original Main Idea Statement; then

Introduce your supporting details in sequence by saying the phrases below that are in quotes; the capital letters below highlight the material on your poster paper that you should read:

"The first supporting detail is": READ THE SUPPORTING DETAIL

"This supporting detail supports the main idea because": SAY WHY YOU THINK THIS SUPPORTING DETAIL IS RELATED TO THE MAIN IDEA

2. "The second supporting detail is": READ THE SECOND SUPPORTING DETAIL

"This supporting detail supports the main idea because": SAY WHY YOU THINK THIS SUPPORTING DETAIL IS RELATED TO THE MAIN IDEA

3. "The third supporting detail is": READ THE THIRD SUPPORTING DETAIL

This supporting detail supports the main idea because: SAY WHY YOU THINK THIS SUPPORTING DETAIL IS RELATED TO THE MAIN IDEA

4. Read your response statements; try to keep this only one or two statements (remember you want to write about a four to seven sentence response on the final).

5. Choose the most appropriate supporting detail that you think supports your response: SAY WHY YOU THINK THIS SUPPORTING DETAIL IS RELATED TO YOUR RESPONSE

6. Conclude by saying anything you want, though if you cannot think of something to say, just say something similar to "And that concludes my Main Idea and Supporting Detail Presentation about" SAY YOUR THEME HERE.

7. After the person concludes, the cameraperson should turn off the camera.

8. After your triad is complete, download the files from your camera to ONE COMPUTER to speed things up. Then each of you takes turns uploading to your Dropboxes or transferring to flash drives.

Case Karen's Visual and Video as a Response to Stimuli Case Karen's Video

If you are able, please watch the fifty-eight second video, Case Karen, password rabbit15, before reading this next section, though, of course, this is up to you. As you watch the video for this first time, try to recognize this presentation as a moment of semiotic history, though this is not history that unfolds over decades or hundreds of years. This is history unfolding over fifty-eight seconds with many influences outside and beyond the recording. The video is not an isolated moment of history at all; it is a snapshot of movement across time, a moment of documented history (Scribner, 1997b). Transcripts appear later in this paper and on the webpage. The purpose of viewing the video now is to have a vision of the overall outcome as specific steps are presented following the video. Moreover, the video is just one mode in this multi-modal activity.

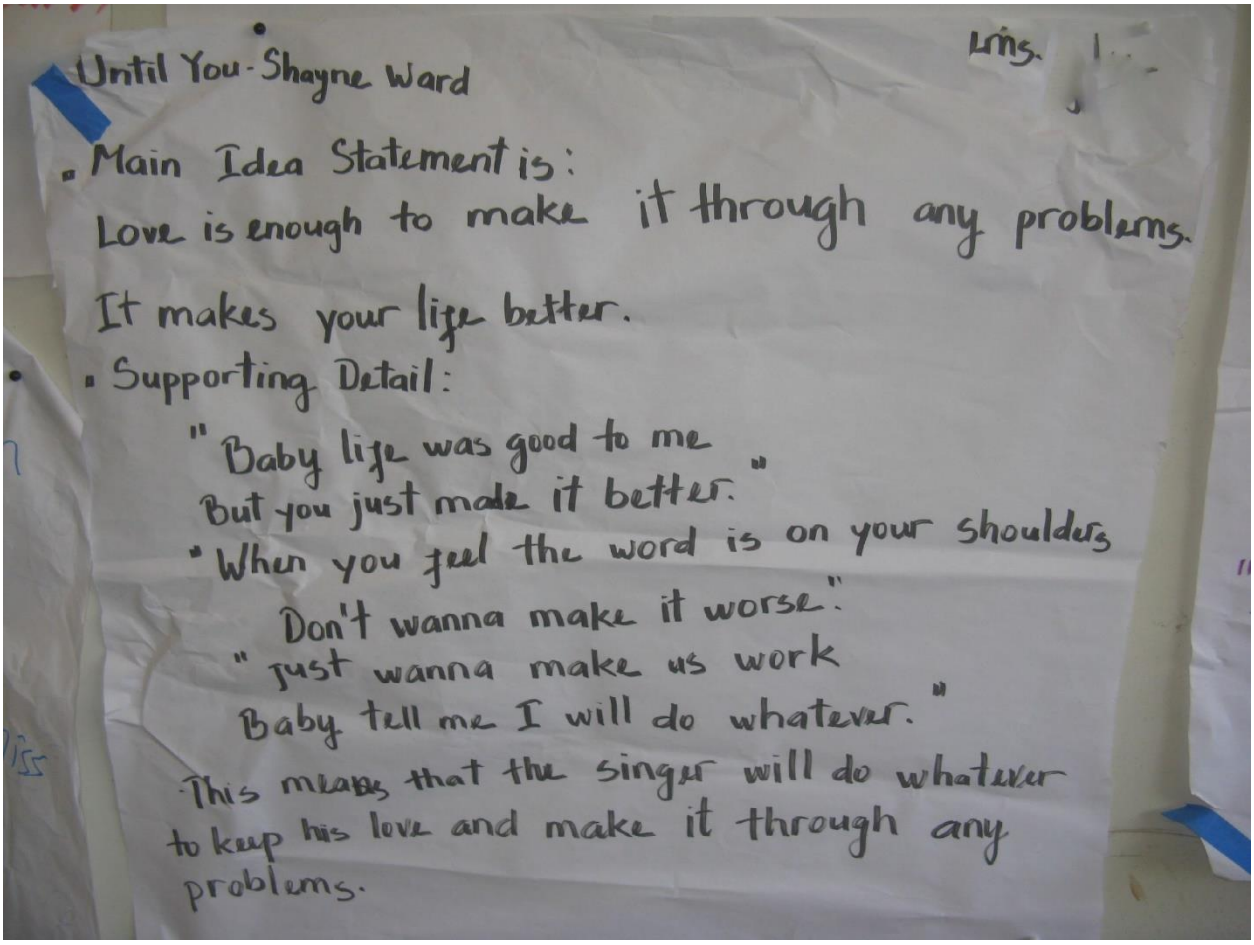

Figure Three: Case Karen's Visual with the main idea statement at the top, the supporting details listed in quotes below, and a final unsolicited comment appearing below the quotes,

Case Karen's overall task was to choose a song, choose three supporting details from the song, create a main idea statement from the song in her own words; then explain the relationship between the supporting details and the main idea statement. This explanation of abstract relationships of supporting details to main ideas, or specific sentence structures to explain meaning, clarifies *author intentions*, which will be discussed later in this paper as a reference area for assessment.

Figure Four is a screen shot of the first few moments of the video immediately following her reading of the main idea statement. She is in the process of explaining to the audience why she chose the quotes that she did. This frozen moment of interaction is a rich example of how the cycle of signification and mediation create a Shared Attentional Frame with the three identified reference areas. Recall that these are Speech; The Visual, including specific *chunks* (three- to

nine-word related clusters), and the overall arrangement of text on the visual, and; the *Act of Pointing*, enhanced for the past year with twenty-four inch pointers with a plastic white hand in the typical design of a pointed finger.

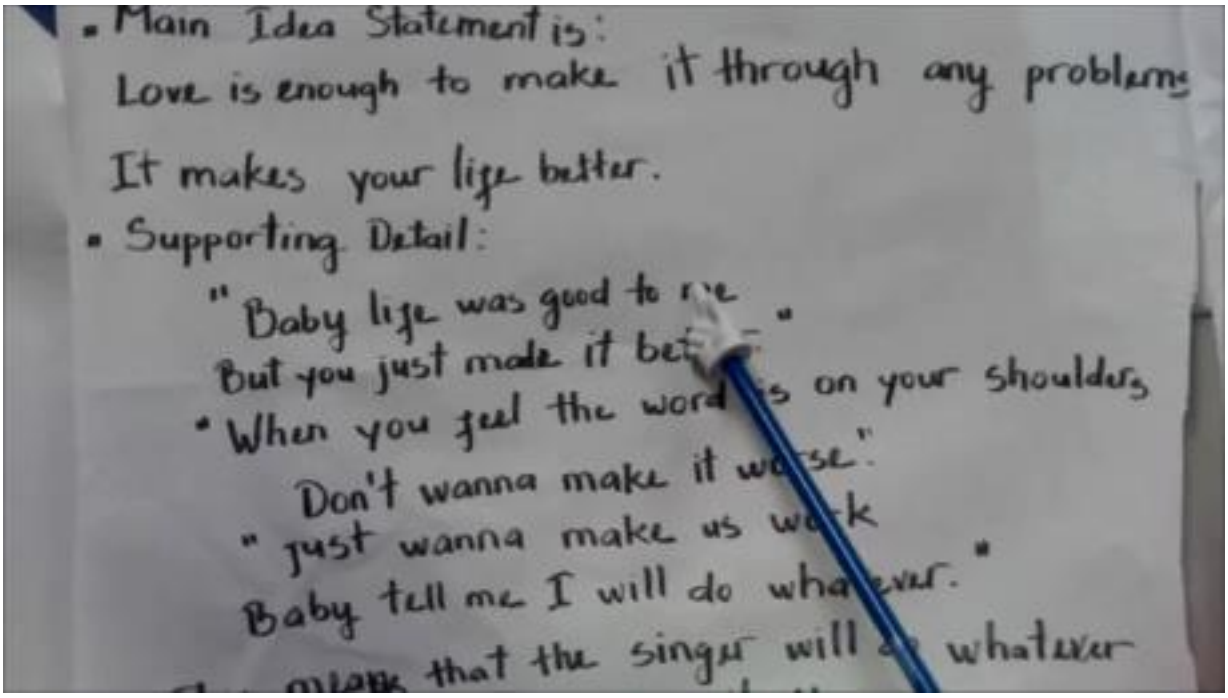

Figure Four: Karen pointing at her first supporting detail and explaining how it it related to the main idea

For the moment of data represented by Figure Two and for clarity, in more commonly understood behavioral psychological terms, suppose the directions are thought of as the stimulus, the desired responses to the stimulus are the students' personal views of the reading and a summary. For this adjustment of the main summarizing activity, the reading is a song. Suppose we view the desired outcome from the stimuli as the assigned object of activity that Karen is prompted to pursue. So for this situation viewed in behavioral terms, the stimulus is the directions and the desired outcome is a summary and response written in academic English. In each moment of this object-oriented activity, Karen creates and uses signs and sign systems as semiotic resources to mediate her cognition and communication. Now that the raw video and a segment of outcome has been presented, back to the overall activity that was adjusted for this specific group of students, who were Karen's classmates.

The Entire Set of Activities that Occurred Before and After the Video

Step One of the early activities was for students to choose songs and create one explicit and one implicit question about this song (I have tried this before and during the current semester on different students, but working with different media and content). I do not think this step went well with this group; specifically, the students' abilities to distinguish between implicit and explicit information was a problem (this was a beginning level EAP developmental reading course). However, this could be the way I presented the material to them and/or a result of general English language comprehension, or an infinite number of other variables, but they were using dictionaries, saw numerous examples, had myself and a tutor helping them as needed, and generally had constant and accessible guidance on any misunderstandings of the directions or literacy terms (e.g. main ideas and supporting details). I also provided my State provided cell phone number for just these reasons, mainly to deal with the very real excuse, in many cases of students with very weak literacy and schooling backgrounds, of not understanding the assignment at home alone; students can just text me, and many do.

For this version of the song activity, students were asked to create an implicit and explicit question. They were introduced to these concepts through the use of these online resource examples of questions: Literal and Inferential Questions for the Two Hani/Akha Stories, along with other online and textbook examples from variety of sources. Students were also provided with a video example of a story and summary: Two Akha Brothers Catch a Turtle. In addition, students were introduced to this page of explicit and implicit types of questions from the folklore of the Hani and Akha indigenous tribes of northern Thailand and southern Yunnan, People's Republic of China (see Implicit and Explicit Questions scroll down to number seven and eight of the examples).

Of course, these examples are attempts at manipulating outcome; however, we (myself and the institution-supplied tutor who is also co-author and collaborator on a number of papers) wholeheartedly encouraged variation so students had plenty of time to play with language (see Li, 2012, for a definition of language play based on Vygotsky's work in this area with children, Vygotsky 1986; note specifically Li (ibid) p. 143.) These ideas from Li and others have applications with adult learners, although adult learners are doing imaginary play with more complex signs systems in academic and technical disciplines (see also Vasudevan, 2015, and Talor & Trumpower, 2004, for more on language play).

Karen's Song and initial response to the questions were written and uploaded to the Learning Management System on a Word Doc, as were all written assignments with all students. Each step is listed below with Karen's response supplied below the step. My comments to her are in italics; at other points in the manuscript, Karen's comments are in italics (although this sounds confusing, distinctions are clear on the actual documents and transcriptions).

Due to copyright restrictions, all lyrics cannot be displayed here, but can be accessed at this link that Karen supplied: *Until You, sung by Shayne Wade*. Lyrics also appeared on numerous drafts so the student-participant and the instructor (me, in this example) could have a common reference point for assessment.

Case Karen's Responses

The song that I like: UNTIL YOU, singer: Shayne Ward

The explicit question created by Case Karen: "*Who is the person that the singer is talking about?"*

The implicit question created by Case Karen: "*Why does the singer feel like nobody ever knew him until his lover knew him?"*

My comment on her draft: *the explicit question needs to be redone; do you agree? Do you see why?*

Step Two, which is usually the first step in these summary activities, is to ask and answer well-known basic questions about any reading, movie, lecture, or in many other situations, to grasp the flow of content and intentions. These questions are *What is the topic?* and *What does the author want you to know?*

Karen's Response to Step Two (Karen's responses are in italics)

Until You Song By Shayne

What is the topic?

The topic is about a man who finally knows what love is and that he will do whatever it takes to keep this love because it is very special to him.

What does the author want you to know? How do you know?

The author wants me to that love Is very powerful and that love is enough to make it through any problems. I know this because this part of the song say "When you feel the world is on your shoulders, Don't want to make it worse, Just wanna make us work, Baby Tell me, I'll do

whatever", which means that the singer will do whatever to keep his love and make it through any problems.

Step Three: Creating Supporting Details and a Main Idea Statement on a Word Document and then on Poster Paper. These are displayed by Karen's video and Figures Three and Four. Recall that students are shown the John Henry Video and the Two Akhas Catch a Turtle videos during the course of pre-instruction before making the videos themselves:

> *Creating the Basic Draft of Basic Information on a Word Document, which you will later transfer to your first basic Visual*
>
> *On a word document, which you will use as a draft to put on your initial poster:*
>
> *1. List three "chunks" that you think are important. These chunks should be quoted directly from the reading and can vary in size; up to you. Try to avoid anything longer than a full sentence.*
>
> *2. Below those chunks, write the two guide questions: What is the Topic? What does the Author Want you to know?*
>
> *3. Below those questions, try to create a Main Idea Statement or Two; no more than two. Follow this Main Idea Sentence with one Supporting Quote that is introduced by a transition word, quote word, or any other configuration that works for you. Upload to the appropriate drop box (this is where assignments are digitally submitted for this particular LMS system).*

Please note that the three steps above, as mentioned earlier, prompt the students to work in a more inductive fashion rather than in deductive fashion. In other words, instead of answering the two questions and then supplying chunks; the students for this activity supplied chunks they thought were important; then wrote the answers to the questions; then created the main idea statement, more or less on the basis of the chunks. It is beyond the scope of the current study to determine direct effects between the inductive and deductive adaptations, though these questions will certainly be pursued as time and resources become available.

Step Four Students are asked to evaluate their videos, as did Case Karen: These are the questions as they were written during this version of the procedure. which as mentioned often in all the cases published, changes as we analyze more data. Here again, Karen's responses are in italics:

1. Pick one moment in the video where you think you "highlighted" or emphasized one specific piece of information or another, one word over another, something over everything else.

The moment in the video where I think I highlighted one specific piece of information or another is in the main idea statement: "It makes your life better." This means: love makes your life better.

2. Do you think your Main Idea Statement was effective? If so, what, specifically, was effective about it, if not, what would you do differently to make it more effective?

Yes, I do. The main idea statement is: "love is enough to make it through any problems. It makes your life better." That means love is very powerful, and that is what the author wants me to know.

3. Do you think your Main Idea Statement was effective? If so, what, specifically, was effective about it, if not, what would you do differently to make it more effective?

Yes, I do. The main idea statement is: "love is enough to make it through any problems. It makes your life better." That means love is very powerful, and that is what the author wants me to know.

4. Which words did you use to direct your audience to different parts of the information on your visual aid? Were there any? Pick one moment that you used your hand to point at your visual aid while speaking. Briefly describe that moment; then answer the question below about the transition word and the pointing:

The words which I used to direct my audience to different parts of the information on my visual aid are: "This means". I think these words are not needful. And this moment just explained more beside the main idea statement.

5. Was there a transition word accompanying this pointing gesture? What transition word would have been a good substitute for the moment you pointed at your visual?

Yes, there was. It is "Supporting Details". It connected the main idea statement to the sentences discussed about the main idea.

6. Will you change your Main Idea Statement or Response Statement when you write up the next draft of your explanatory paragraph? What will you change? If not, why is it so perfect that you wouldn't change it? :)

Yes, I will. I will write the main idea statement clearlier. I will talk more about the love power.

7. Could each of your important Supporting Details be clearly related to your Main Idea?

Yes, they could. But I didn't point clearly at the first supporting detail to the main idea statement.

8. If there were anything you could change about this entire video assignment, what would you change?

I *would change the way I talked and pointed. I would talk more about the love power and point on each supporting detail sentence to each mean in the main idea statement.*

Step Five: Writing the Summary. For Case Karen, as mentioned earlier, we were working with shifting the student-participants' thinking more to an inductive rather than deductive manner, but the entire semester's data has yet to be analyzed for trends.

A Common Step to all Summaries and Responses: Three Supporting Details in quotes and taken directly from the text. Case Karen had these bulleted and divided differently, which can be seen on the webpage of raw data:

"Baby life was good to me, but you just made it better."

"When you feel the world is on your shoulders Don't wanna make it worse."

"Just wanna make us work Baby tell me I will do whatever."

A Partial Transcript of Case Karen's Video

This transcript covers the beginning of the fifty-eight seconds of Karen's presentation. The Act of Pointing has been interestingly effected by the height of the participant and how high she taped her Visual to the wall. The transcription protocol is fairly simple with the Speech divided into *chunks* (usually three to nine word clusters of related text). These clusters of words are grouped together through a combination of salient pauses in spoken speech, the Act of Pointing, and chunks of text written and read word-for-word on the video. For the transcript, oral speech is in regular font, a period signifies an approximate one-second count, and any descriptions of the Act of Pointing and additional information are written below in italics. Moreover, recall that this transcript can be easily followed along by simply watching the video at Video of Case Karen, password rabbit15.

And my song is Until you. Er . the singer is Shayne Ward and

The pointer moves from the area underneath "Until" and pauses during the "Er" as Karen pauses for the moment before running the pointer smoothly underneath "the singer is Shayne Ward"; her pointer continues into the whitespace beyond and bounces while she says "and" before moving to her next chunk.

The Main idea statement is

The pointer moves from left to right; smoothly under "idea statement is," and then shifts to the next line on the visual

Love is enough to make it through any problems

The pointer starts to follow the line of text below and to the right of "is"

makes your life better . and my

The pointer follows along until an approximate one-second pause after "better;" then holds under and leaves the Visual at "my" to begin the next line

supporting detail is uh

The pointer follows along underneath the supporting detail, and bounces momentarily to the right on "uh" before moving down to the lyrics

"Baby Life was good to me"

The pointer follows along under this line smoothly, reaches the end and moves down to the next line

"But you just make it better"

As with the lyrics in the line before the pointer moved smoothly underneath the phrase until it stops and rests on better; as Karen begins her explanation of the relationship between the supporting detail and main idea

It show uh uh

the pointer stays on the word "better" on the Visual until she moves back up to the Main idea and begins to read the main idea statement again.

Love is enough to make it through any problems

Karen reads directly from the poster, her pointer starts at "Love," flowing smoothly underneath this line and the next

And it makes your life better

As with the line before, Karen simply reads the line with the pointer flowing smoothly underneath the sentence

In beginning the Video presentation, Case Karen does not go through much of an oral explanation of why she later chooses, *"Baby life was good to me, but you just made it better"* as the most important supporting detail in the answers to the self-evaluation questions and in the summary. Karen is doing too much reading directly from the text and not enough of her own speech throughout the entire process. So for her, in contrast to other cases, she does not express much explanation, except in the final remark on the video when she reads directly from the visual (see Figure One and the Video). However across a variety of steps in the entire process, this quote, *Baby life was good to me but you just made it better,* intentionally chosen as the most important quote, along with some related quotes and statements, becomes a salient theme for Karen's interpretation. A related question to assess, which will not be covered in this paper, is how much of this intention was in the original text. These two themes, *Baby life was good to me"* along with "*This means that the singer will do whatever to keep his love and make it through any problems,"* dominated the final summary and responses Karen created (see Transcript Case Karen). This final statement can be found in her initial response to the second of the two guide questions: What does the author want you to know? She carries this theme *intentionally* through every step as she develops the final summary.

Case Karen's interpretations unfold across several steps of the process, not mainly on the video. Most other participants did not simply read the text, though this happens from time-to-time (see Unger et al for idealized oucomes; see also the links to raw data in Appendix A). She is a contrasting case to the idealized outcome for the video, but other steps in the process compensated. Despite the limitation of her video explanation, she does clearly align and demonstrate awareness of the strength of supporting details to main ideas. Another salient feature of Karen's summary is the way she mixes together two different phrases to introduce a quote in writing: "According to the author, he says at one part of the song that…" This is one of the typical examples of minor kinds of errors students make as they are challenged by introducing quotes and relating these to the main idea.

Karen's Summary (in italics):

The man said that his life was good but his lover made it better. This is because Love is powerful and strong enough to go through any problems. When people are in love, they always feel life is beautiful at that moment no matter what happens in the future. According to the author, he says at one part of the song that "Baby life was good to me, but you just made it

better." He wants his lover to know that when she feels tired from her life, just tell him and he will do whatever to make it better and not worse. He believes his love for her is strong enough to go through any problems and that he will do whatever it takes to make everything better.

The strongest supporting details: "Baby life was good to me, but you just made it better."

The following is one of many variations from the continually adjusted procedures. This particular step was added to give students more opportunity to practice specific transition words and phrases used to introduce quotes.

Case Karen's Sample Summary, emphasizing words that point to evidence.

The author says that his life is good but when his lover stands by him, he feel the life is better. That is the power of love, when people are in love they always feel the life is so beautiful. The author said "Baby life was good to me, but you just made it better." Then the author tell his lover that when she feel tired from life, just don't make it worse and tell him. The author told his lover that "when you feel the world is on your shoulders, don't wanna make it worse." Because of love he will do whatever to make everything better, love is strong enough to through any problems. "Just wanna make us work, baby tell me I will do whatever."

Back to the Theoretical Framework and a Model of Embodied Communication

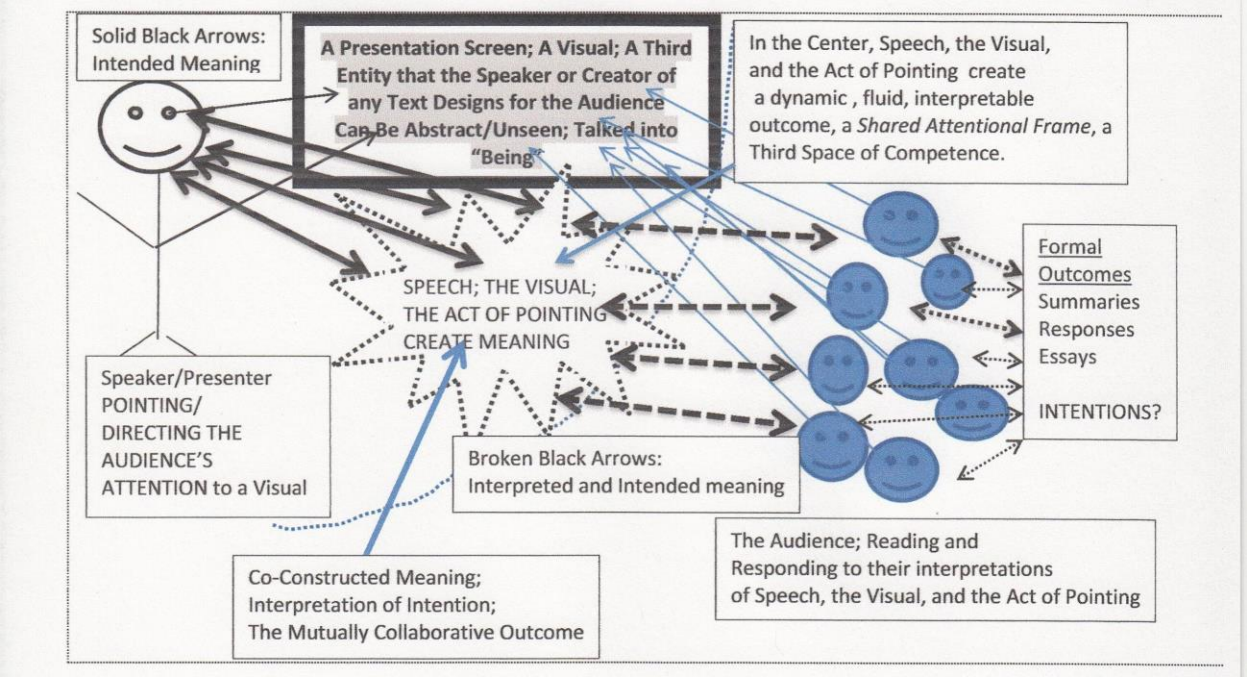

Figure Five: A Model of a Shared Attentional Frame

Thus far recall that several different concepts and key terms have been supplied during the description of Case Karen's activities. These are: signification, mediation, the concepts of Shared Attentional Frames, intention-reading, and semiotic resources. Also, three reference areas for assessment have been: Speech, The Visual, and the Act of Pointing, along with an evolving unit of analysis of a chunk. The chunk, as a unit of analysis, is inseparable from the Visual and the Act of pointing, as oxygen and hydrogen are inseparable from what can be observed as water. However, I strongly believe the chunks can be more refined as markers of intentionality from the beginning to the end of the writing process, specifically in response to any type of reading or a variety of other prompts such as film, music, math word-problems, and word problems from a variety of disciplines.

This model of a Shared Attentional Frame is the basis for analyzing Case Karen's work, as well as assessing responses created from the sentence completion activities. I want to emphasize that this is a *working model* as adjustments are made to align with different content areas and course objectives. This model and the nine terms from the theoretical framework are intended to be flexible and adaptable.

Following along with Figure Five, from left to right, Case Karen is the speaker. She is pointing to specific parts of the Visual while speaking to the audience. This is displayed by the stick figure in Figure Five, who is pointing at the Visual and speaking to the audience. Case Karen is using a variety of semiotic resources to express specific *intentions* that are her interpretations of the *author intention*s to an audience. The audience for this case is the camera and the other students filming her or waiting for their turn to present. Lately I have been using four cameras in four corners of the room with groups of three or four students per group; sometimes only one group goes at a time, so the audience grows, besides those who are working on their own Visuals.

In Figure Five, the overall hypothetical clarity of author intentions is expressed by the thickness of the black double lines with arrows on the end, some with dotted lines; some thinner or thicker. The Blue Arrows coming from the smiley-faced audience indicate their attention to the visual, which is simultaneous with their attention to the chunks of speech and where Karen is physically and metaphorically pointing. All this comes together in a kind of socially-constructed third space (i.e., the center with the purposely unstable looking jagged star-like figure with permeable borders).

One specific moment of data in Case Karen's video, along with the subsequent use of the chunks from the visual and video in her written summary and response, collectively represents larger writing assignments, such as summaries and responses, essays, and all types of presentations. The rubric for the sentence completion activity was developed out of the rubric for Case Karen and other participants who have done videos over the past two years. As with all else here, please keep in mind that the rubric is a working model and will be condensed as more data is collected and analyzed. For this first couple of years, particularly since these activities are new to students and they are not done across all courses, I have been mainly providing comments while being very gentle on actual points for the video. On the other hand, the summaries and responses were graded by a rubric that was used across all of courses and for the final exit exam.

The Sentence Completion Task

Recall that the sentence completion activity, which has the tentative title Formal Academic Language Assessment (FALA), is an avenue to compress the complexities of Case Mawng, Case Karen, and other cases into a more manageable assessment. As mentioned earlier, another sentence completion activity has recently been adapted from a two sentence to one sentence outcome (see this paper's Webpage). The purpose is to assess and teach multiple language skills across several media and modes without too much time or complexity. In other words, the goal is to create an assessment that is workable and acceptable as a complement to standardized measures. The overall purpose is to gain a more authentic sense and measure of the dynamic and fluid nature of English competence, along with assessing critical thinking.

As the sentence completion activities are presented, recall how the model of a *Shared Attentional Frame* depicts the activities of Speech, a Visual, and the Act of Pointing, and how much effort goes into expressing *intentions*. This process, specifically the triadic nature of expressing and reading intentions, along with the importance of pointing, may be the key to understanding language acquisition (Tomaselllo, 2003), though these larger questions are beyond the scope of the present paper.

The Two Models of the Sentence Completion Activities

For the Two Sentence Model:

Please click on the link to go to the webpage at Shared Attentional Scenes and Sentence Completion Activities (password rabbit15); then scroll down the page and watch as much of the video as you think is necessary. The video really drags on a bit long and needs work (the man speaking sounds close to death). Following the Two-Sentence Model is the shorter and more concise Single-Sentence Model, though I am sure I will simplify these more as time permits. Direction documents are underneath each Sentence Completion Model.

Two Working Models of the Directions

Formal Academic Language Assessment: Two Sentence Model

Directions:

For this activity, you will first watch these directions, practice a few sentence completions on scratch paper; then open up the Assessment File on the Testing Computer, turn on the Screen Capture Software, and follow the Five Assessment Steps.

Before you turn on the Screen Capture Software, practice these first steps on ANY PAPER

After you open your FALA File, please do the following steps with the Screen Capture Software Recording on, including the headpiece with microphone. The Screen Capture Recorded Response is part of the Assessment. If you do not turn on and record the following steps, the Assessment is not complete and you will be asked to repeat or skip the Assessment entirely and be placed ONLY by other limited assessment options.

Here are the Five Steps of your Assessment; after you open your FALA File and saved it to the desktop, turn on the Screen Capture Software, and complete the five steps as listed below. Open your FALA File, turn on the Screen Capture Software, and begin.

1. You will need to complete an incomplete sentence. This incomplete sentence has a **bolded** vocabulary word in the sentence.

2. After you complete the first sentence, you will need to write a second sentence **that supports and/or explains the meaning of the bolded word.**

3. **Though not required**, we encourage you to move the cursor over words that emphasize the parts of the sentence you are talking about. **This act of pointing emphasizes information for an audience.**

***4. THE MOST IMPORTANT STEP: Explain to the audience why you chose to put the content in your second sentence. In other words, how do the additional words you wrote support the meaning of the vocabulary word.**

5. Finally, as an assessment of your casual ***explicit*** **grammatical knowledge, please TALK ABOUT one or two pieces of grammatical information about either the first or second sentence** you wrote, such as if you used a clause; what kind of clause did you use? Can you tell us whether you wrote a simple, complex, or complex-plus sentence? Can you explain any punctuation? Say anything you can think of that is related to some grammatical feature of your sentence.

***PLEASE NOTE THAT IF YOU FIND AN ERROR DURING THIS PROCESS, PLEASE REVISE; LEAVE THE SCREEN CAPTURE SOFTWARE ON**

Here are two examples:

1. To **appease** Frank's anger_____
To **appease** Frank's anger, the teacher gave Frank the opportunity to do an extra credit assignment for a better grade. The teacher hoped this opportunity would soothe Frank.

2. The violence of the storm's **assault** on the town was displayed by_____
The violence of the storm's **assault** on the town was displayed by the overturned cars and smashed store windows. The storm's huge thunderheads appeared to charge over the town from the southeast.

The Ten Incomplete Sentences start on the bottom of this page; YOU ONLY NEED TO CHOOSE ONE. After you have practiced on the hard copy that you have, **TURN ON THE SCREEN CAPTURE SOFTWARE** AND **do all work on THIS Assessment document THAT YOU WILL OPEN UP AND SAVE TO THE DESKTOP.** Save this document with the first letter of your first name followed by your full last name. For example, if your name is John Doe, than you would save your file as **JDoe. Please leave the hard copy example with any notes on it for the examiner; do not take it with you from the testing area.**

Remember, your task is **to complete a sentence; then **write an additional sentence that supports the prior sentence**. Then, turn on the screen capture software and **explain why you wrote the second sentence as you did**, and **mention some grammatical knowledge** about the **first and/or second sentence**.

Here's one last practice incomplete sentence showing the four steps you need to perform with the screen capture software on (this was completed in the recorded example that you watched):

*Frank was completely **irate** about **his cell phone bill.** His blood pressure was way up and he could hear his voice becoming louder.*

NOW CHOOSE **ONE** INCOMPLETE SENTENCE FROM THE FOLLOWING TEN; USE AS MUCH ROOM AS YOU LIKE ON THIS DOCUMENT, WHICH WILL NOW BECOME YOUR RECORDED ASSESSMENT DOCUMENT. **PLEASE REVISE ERRORS ANYTIME DURING THE ENTIRE PROCESS**

1. A typical student's budget is **consumed** by

2. The internet is a great **medium** for

3. The company increased **revenue** by

4. A polite **euphemism** for a bathroom is

5. The lake was **tainted** when

6. I had a **unique**

7. One **syndrome** that frightens me is

8. Frank wanted to **affect** the color of his front lawn so he

9. Frank **designed** a

10. Frank was a scientist who **researched** the

Formal Academic Language Assessment: One Sentence Model

Directions:

For this activity, you will first watch these directions, **with headphones on if you are in a public place.** You can practice sentence completions with any of the ten sentences listed below the directions here; then open up the Assessment File on the Testing Computer, turn on the Screen Capture Software, and follow the Four Assessment Steps listed below. **After you have watched the demonstration video and before you turn on the Screen Capture Software,** practice a few sentence completions on scratch paper from any of the Ten below.

Please try to practice the Four Assessment Steps as many times as you need to. You can use one of the same sentences you practiced with as your assessment sentence completion.

After you have practiced, pick one of the ten choices from the list below and turn on the screen capture software to capture your four steps. Remember that you can use one of the sentences with which you practiced. REMEMBER TO PLUG IN YOUR MICROPHONE AND TO TURN ON THE SCREEN CAPTURE SOFTWARE BEFORE YOUR ASSESSMENT SENTENCE.

1. You will need to complete an incomplete sentence. This incomplete sentence has a **bolded** vocabulary word. **You need to try to complete the sentence in a way that supports and/or explains the meaning of the bolded word (see the two examples below).**

2. **Though not required**, we encourage you to move the cursor, as in the parts of the recorded example and directions over words that emphasize the parts of the sentence you are talking about; **this act of pointing emphasizes information for an audience.**

***3. THE MOST IMPORTANT STEP: Explain to the audience why you chose to complete the sentence the way you did to support the meaning of the vocabulary word.**

4. Finally, as an assessment of your **grammatical knowledge, please TALK ABOUT one or two pieces of grammatical information about the sentence you wrote** such as naming the subject of the sentence, the object or complement. Voice, was the voice first, second, or third person; was the sentence active or passive voice. Say anything you can think of that is related to some grammatical feature of your sentence (though please don't say too much; just one or two examples is sufficient).

***PLEASE NOTE THAT IF YOU FIND AN ERROR DURING THIS PROCESS, PLEASE REVISE; LEAVE THE SCREEN CAPTURE SOFTWARE ON**

Here are two examples and complete sentences:

Here is the incomplete sentence:

1. To **appease** Frank's anger _____

To **appease** Frank's anger the teacher allowed him to text and use Facebook for ten minutes.

Here is another incomplete sentence

2. The violence of the storm's **assault** on the town was displayed by_____

The violence of the storm's **assault** on the town was displayed by the broken windows and downed tree limbs.

The Ten Questions start on the bottom of this page; YOU ONLY NEED TO CHOOSE ONE. After you have practiced all you need to, **TURN ON THE SCREEN CAPTURE SOFTWARE** AND **do all work on THIS Assessment document THAT YOU WILL OPEN UP AND SAVE TO THE DESKTOP.** Save this document with the first letter of your first name followed by your full last name. For example, if your name is John Doe, than you would save your file as **JDoe. Please note that on the video that the speaker said only the first name. As stated above, save with the first letter of your first name followed by your last name.**

PLEASE REVISE ERRORS AND TALK ABOUT THE ERRORS ANYTIME DURING THE ENTIRE PROCESS; THIS WILL HELP ILLUSTRATE YOUR CRITICAL THINKING AND ABILITY TO SELF-CORRECT

1. A typical student's budget is **consumed** by

2. The internet is a great **medium** for

3. The company increased **revenue** by

4. A polite **euphemism** for a bathroom is

5. The lake was **tainted** when

6. I had a **unique**

7. One **syndrome** that frightens me is

8. Frank wanted to **affect** the color of his front lawn so he

9. Frank **designed** a

10. Frank was a scientist who **researched** the

The descriptors that appear below are a working model of a rubric that was first created for the two-sentence model. The working model is an Excel document that can be downloaded on this paper's webpage. This working model needs to be condensed and adjusted for the Single Sentence Model and the Two-Sentence Model as well. The purpose of this working model is to provide numerous descriptors, questions, and comments to condense into a more succinct rubric.

10 Categories-Each Category is rated 1 to 5, 50 points Total

Voice Projection-Could the voice be heard loud and clear?

Pace-Speed of Presentation-Was the presentation too fast or slow?

Specific Sentence Grammar-Sentences are worth one point each, with grammatical and semantic errors causing point loss as appropriate. The total scores are multiplied by 2.5 (this maintains the 1 point grading scheme linked to other graded assignments across several courses and contexts for several years). A fairly consistent point system has been established to mark off grammar points if a grammatical error interferes with intentional meaning and overall communication. Sentences that do not express the vocabulary word in a contextual, supportive, and communicative fashion are marked 0. Assessment points are normally assigned as follows: Punctuation =.10; Verb Tense, Word Choice, Verb Form, Missing word, Unnecessary Word Inserted=.25 Word Order=.25 to .50 depending on severity; Comma Splice, Fragments, Run On=.25 Any of these categories can be raised or lowered depending on how strongly the rater feels that the writer's intentions become unclear. NONE OF THESE NUMBERS OR CATEGORIES ARE PERMANENT; PLEASE ADAPT FOR LOCAL NEEDS

Explicit Grammatical Knowledge: Was the participant able to state any explicit grammatical knowledge? Was this knowledge relatively well known or easily knowable, as in pointing out a part of speech? Or was it more complex such as the proper usage of an adjective clause, or a subjunctive adverb. Recall that they are asked for two "pieces of information." Each piece is worth **2.5 points**. Although all of these judgements are essentially subjective, I think it is important to use this as a triangulation point to assess how students articulate any grammatical knowledge. Student's examples of grammar provides insight into their general grammatical knowledge. The more this assessment is used, the numbers should ideally become more consistent, and a baseline could be established.

Content Information-Was the first sentence completed adequately (if only a single completion, this completion of the one sentence is the assessment). Was the completed content for the sentence contextually correct? Was it grammatically correct enough to be communicative? **If the variation of a one sentence evaluation is used, were the words in either the subject or predicate group of the sentence strongly supporting the meaning of the vocabulary words?** With the original two-sentence proposal, were the words or phrases used in the second sentence **inadequate, adequate, or more than adequate** in supporting the meaning of the vocabulary word in the first sentence? Were the words synonymous, and antonym, an example, or express a general sense of meaning of the vocabulary word? Did both sentences provide an ideal or weak context? Were **the speaker's directed intentions, expressed through the completion of one sentence and/or second sentence strong enough to support the meaning of the word? In other words, were the intentionally used words and phrases that complete the sentence clearly supporting the meaning of the vocabulary word?**
Language -overall Grammar-Connecting Words-Transitions-Phrases-Clauses: Did the speaker smoothly connect phrases, clauses, and put prepositions in the right place; use transitions to point the audience to meaning?

Overall Pronunciation-Vowels-Consonants-Endings of Words: Fully pronounced sounds?-How did the words sound? Were all parts of the words clear? Could word endings be heard? How much of the entire presentation could be understood?

Rhythm-Syllable Stress-Varied Intonation Was the rhythm natural or too stiff? Too unvaried and boring? Too much influenced by a language other than English? T**oo influenced means if the Rhythm and Syllable Stress from the Speaker's first language strongly interferes with the communication of meaning.** Did the stress influence comprehension negatively? Did the rhythm interfere with stress? Upward tone on questions? Downward tone on statements?

Effective Pointing of the Visual-Did the speaker point in a collaborative, dynamic manner? If they chose the option of not using the mouse for pointing, please make a judgment about the participant's *pointing* in any manner, such as the use of words, phrases, and tone of voice to support the abstract relationships he/she was intending to convey about why the second sentence supported the first, or a completed sentence if the single sentence completion is assessed.

Ongoing, Open-Ended Results/Discussion:

A wide range of possibilities for effectively using digital video cameras and other types of digital recording devices are available to pursue a more authentic, responsive, and embodied perspective rather than standardized tests or digital software for automated scoring systems. Returning back to some of the prior research, the power of more digital interaction with teachers, students, and language are now available, but with an ever-the-more complex and inauthentic, inaccurate view of what students are actually doing with language (Serravallo, 2014; Dikli & Bleyle, 2014).

Recall that Sullivan and Neil (2009) used the terms "recognize" and "distinguish" (p. 4) to describe some of the critical thinking characteristics that the Accuplacer measures. Recall that Cheng et al. (2008) used the terms "selection methods" and "supply methods" to distinguish between two very different assessments that translate into two very different arrangements of learners to language. Selection methods are assessments for which students "recognize" and "distinguish," whereas supply methods of assessment prompt students to create language, such as with summaries and sentence completion activities (Cheng, et al). This is a big difference in assessment. There are consequences in obscuring what students can actually do with language in real-life situations with selection methods such as multiple choice or matching questions (see also Rupp & Choi, 2006).

Recall that the research questions were as follows:

1) What does the evaluation of evidence to propositions look like in a summarization activity?

2) How can the evaluation of evidence to propositions from the summarization activity be incorporated into an assessment tool?

To answer the first and second question, it is useful to recall Case Karen's work with text across modes and media to fine tune her central message that "Love is powerful" through revisions that she made. On Karen's visual, shown in Figures Three and Four, Karen states that *"Love enough to make it through any problems. It makes your life better."* Karen revises this on the written summary to *"The man said that his life was good but his lover made it better. This is because Love is powerful and strong enough to go through any problems."* Throughout the process, Case Karen accurately identifies the author's intention and at each step. She effectively combines chunks of language with the implicit strength of the supporting details and main idea to state the author's central intention as "Love is powerful."

Although it is difficult to prove that the digital video activity, specifically, was the cause of her improvement, the data does suggest that Case Karen is making changes and revisions as a consequence of writing and talking about her ideas across different media and modes. She does not directly articulate these relationships in Speech on the video; however, she does express and articulate this relationship in writing on the visual and in writing on the word-processed summary. Case Karen's awareness and moving toward revision is also expressed in her answers to the self-evaluation question. The data suggests that she demonstrates multiple moments of revision through the entire process, a strong awareness of author-intentions, and a clear sense of the strongest supporting detail to support her interpretations. These same kinds of increased participants' awareness of process and self-correction is displayed in the discourse across all the raw data presented by Appendix A. Participants consistently display an awareness of process, self-correcting, and carrying author intentions through the entire process from the original prompt to the summary, response, or essay outcomes.

With regards to the second question and the way the evaluation of evidence to propositions from the summarization activity is incorporated into the sentence completion activity, when the prospective student-participants complete the sentence and write another sentence, or complete a single sentence, they are providing supporting detail and vocabulary in context. This is what I have observed in classes over the course of severals

semester with using more and more sentence completion activities, though this data, without any video recordings, has not been formally analyzed yet. However, much of students' classwork and sentence-level revisions has inspired the proposed sentence-level assessments.

Either version of the proposed sentence-completion activities is intended to prompt students to articulate the relationship between their first sentence and second, or the completed part of the sentence to the incomplete sentence in the single-sentence version. Specifically in terms of how context is created in either version, the second sentence or completed sentence supports the meaning of the bolded vocabulary word. Overall, these activities do certainly present a challenge to students. However, despite the challenges sentence completion activities might pose, I am not the only one pursuing sentence completion activities for assessments, for teaching critical thinking, or for other purposes (Montrelongo & Hernandez, 2007; Helman, Calhoon, & Kern, 2015; see also Kujala & Nurkka, (2012); Picano, Roland, & Rollins 2002).

The overall sentence completion activities presented in the current paper has retained the central concepts of embodied activity with language across different media and modes as with the more complex main idea and thesis writing activities presented across the data in Appendix A. Through this assessment protocol, it is hoped that the emphasis on *expressing and reading intentions* can provide a reliable, valid complement to the standardized systems in place.

Avenues for Further Research

Of course one of the major avenues for further research is to begin collecting non-native speakers and native speaker samples of these two types of sentence completion activities. An additional avenue of research is to move the procedure into another discipline; this is what myself and colleagues are attempting as of the writing of this paper with math word problems.

This raw math word-problem data and various directions and rubrics are on the following pages and provide a glimpse of moving across academic borders as part of the research process. In the future, I am hoping to create and gather the same type of data across a variety of gateway courses (i.e., core university courses such as psychology, history, music appreciation).

Twenty-Four Initial Cases of Math Data

During the write up and revisions of this paper, and as part of pursing the approach across disciplines, I have so far collected twenty- cases of math word problem data in collaboration with a member of the math faculty. He has been supplying me with math questions and helping me review basic math (a humbling experience, indeed). All these data remain archived for now, with three cases working through the same word problem posted at http://transitional-literacy.org/?page_id=10403 password rabbitmath.

These three cases of math data and visuals are available for readers who have the time and interest to review this specific avenue for further research. With the assistance of colleagues, I am trying to implement the same overall framework and procedures in math classes, though the directions have been modified to emphasize process. However, the data collection and analyses still revolves around signification, mediation, Shared Attentional Frames, intention-reading, and semiotic resources. For these math data, the same reference areas and units of analysis are used; recall that these are Speech, the Visual, the Act of Pointing, and chunks of spoken and written text. Moreover, I am trying to capture multiple cases answering the same word problem questions (three participants per question). As with the ongoing research, I am trying to gain insight into how participants develop more awareness of the intentions of authors; in these data, word problems and how participants translated written English into equations, thus moving from one semiotic system to another. Although the analyses of the math data is just beginning, I am attempting to track participants' interpretations of author intentions as some become confused during the problem-solving process, disrupting both process and outcome in a very different manner than with writing sentences

Thus far, with the videos of answers to math word problems, as with the videos of summaries, responses, and essays, *we* (i.e., any other scholars or students willing to collaborate) have some rich data. The data provides a puzzle to analyze and to improve students' abilities to comprehend text, follow directions, and work with evidence and proposition relationships displayed across different media and modes.

From the webpage links for the Math Data, the participants can be seen developing different combinations of Speech, a Visual, and Acts of Pointing in attempts to reach the correct math outcomes, though much analyses is needed to say more at this

point. Included on these webpages are working drafts of directions and other related documents.

The basic procedure and call for participants:

http://transitional-literacy.org/?page_id=10325 password rabbit15

Question three of the word problem data:

Three participants working each working separately on one specific question.

http://transitional-literacy.org/?page_id=10403 password rabbitmath

These math word problem videos, along with further investigations and adaptations of the sentence completion activities, are two current avenues of research. As with any research on human activity with signs, many other paths of discovery can be taken with this theoretical framework and video data, including quasi-experimental designs as another triangulation point. As implied or stated throughout the manuscript, the overall objective is to bring much of the mystery of activity with signs into a more public domain of understanding, with more authentic, transparent, and accessible reference areas. This wide ranging and transparent approach can collectively be used as a reference point to discuss the developmental changes in literacy occurring at hyper-digitized speed. The overall vision is for all stakeholders to be able to sit down and understand how to better assess and understand human activity with signs and sign systems. Hopefully, this framework and data can further inform teacher-researchers about the process of teaching, learning, and assessing outcomes as a contrasting reference to the predominance of standardized exams and selection over supply activities; in other words, writing and talking about language and meaning rather than choosing a multiple choice item, matching one thing with another, or filling in a blank.

Perhaps these naturally created triadic-like arrangements with signs and sign-systems that dominate human life express universal ways humans construct grammar (Tomasello, 1999; 2003). For me, after twenty-five years of teaching and many years analyzing videos of student-participants doing work with language, grammar does not seem to be something universally innate, nor does an assessment system have to assume a standardized, statistically measurable universality of the human mind. Grammar, learning, and development are embodied activities in a social world of sentient beings who engage in profound interaction with signs (i.e., language) (see Tomasello, 2003;

2014; Talmy, 2014; see also Langacker, 2008). We are all so deeply connected, yet wedded, weathered, and shredded to competing political dreams

Limitations

As with all research, there are many limitations. However, this research, as lengthy and tedious as this may seem, is also very much intended to involve the reader and other researchers more intimately through a transparent, open approach. Moreover, this is interpretive, descriptive research, now moving more toward tentative explanations with the model of Shared Attentional Frames. The findings for this study have many limitations; however, the possibilities are limitless.

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Appendix A

Fall 2013: Digital Video Cameras for Main Ideas and Supporting Details: The Process and Potential. Password rabbit57

Fall 2013: Digital Video Cameras for Brainstorming and Outlining: The process and potential. Password rabbit58

Fall 2014: Social Justice through Literacy: Integrating Digital Video Cameras in Reading Summaries and Responses. Password rabbit14

Winter 2015: Competency as Semiotic Design: Attempting to Cross Academic Borders with Digital Video Cameras. Password rabbit15

Fall 2015: Creating Joint Attentional Frames and Pointing to Evidence in the Reading and Writing Process. Password rabbit14