Language Competency as Semiotic Design: Attempting to Cross Academic Borders with Digital Video Cameras

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Abstract

This theory into practice paper reports on an ongoing action-research project investigating the integration of digital video cameras into pre-college literacy courses. The theoretical framework, the procedures, and the potential for a process-based assessment approach for language and literacy instruction are explored through a detailed presentation of digital video recordings of three adult participants as descriptive cases of the procedures and outcomes in English for Academic Purposes reading and writing courses. Cases are presented with links to short two- to three-minute video presentations and initial pre-writing and final reading and writing outcomes (e.g., summaries, responses, and a five-paragraph essay). Rubrics, directions, transcripts, photos of visuals, and digital video recordings are all accessible on a webpage linked to the paper. Results of this descriptive, action-research study include a model of an idealized Joint Attentional Frame and productive avenues for building a valid and reliable process-based assessment to run parallel with commonly accepted standardized assessments. Moreover, the entire project is intended to be the beginning of a common assessment framework that can reach across the borders of academic disciplines for prompting students to use academic English and procedures to evaluate the relationships between evidence and propositions.

Introduction

People must reach a level of competency in order to perform a task effectively. We like to think that doctors, dentists, lawyers, pilots, teachers, police officers, plumbers, car mechanics, and others are able to do their jobs at high levels of competency. Students are also asked to demonstrate competency in certain areas as a component of national and international standards established by experts. One area of particular importance in education is communication skills; all students in the United States, native English speakers or not, must demonstrate competency in speaking, reading, and writing English in order to progress through the education process.

For a variety of reasons, standardized statistical measures are the worldwide protocol for deciding if learners of English and other disciplines are deemed competent to study at a predetermined level of reading or writing; these tests may place beginning college students in remedial-level courses that do not offer credit toward degrees. In many situations, the same standardized exams are used to exit students from the remedial courses. Through this system, a level of competence is determined for the individual student and the score is compared to whatever population is used to normalize the standard. Students meeting the competence level move on; students who do not must retake the non-credit-bearing remedial course. Relying on scores from a standardized English test to assess learners' literacy is often unstable (Abedi & Gándara, 2006). This system is here to stay and has an established, useful, though limited role in assessing real-world English language ability and related literacy abilities. These limitations are especially evident with regards to assessing critical thinking literacy tasks such as evaluating evidence to prove or disprove propositions, to connect supporting details to main ideas, and to present the abstract relationships between supporting details and thesis statements. For approaching such a wide array of activity with signs, and to maintain an open-ended evolving perspective on critical literacy assessment and language competency, our approach has been informed by the work on *syllogisms* and other related writings in Scribner (1997a, 1997b, and 1997c,) and Luria (1979). With the resources offered by 21st century technologies, we argue in this and other related papers, (Unger & Scullion, 2013, Unger & Liu, 2013; Liu, Unger, & Scullion, 2014) the digital video cameras and model presented here provide a practical, accessible, and flexible extension of many the foundational ideas from Vygotsky (1978; 1996) and other tangential scholars (Bakhtin, 1981; 1986; van Lier, 2004; Wertsch,1998) The data,

theoretical framework, and the associated lesson plans, directions, and digital video activities presented here are intended as an action-based instructional assessment system; that is, the set of procedures and identifiable areas of reference are synthesized as flexible units of analyses, which are intended to be adjusted across a variety of language/literacy learning contexts and content areas. This paper presents an overview of this formative assessment system and data examples of what this system might look like for reading and writing activity with adults in an English for Academic Purposes (EAP) program.

The Research Questions for Developing a Process-Based Formative Assessment System

The overall research questions are shaped from an ongoing action-oriented study to develop a process-based assessment system to serve alongside standardized measurement systems. Several features of this study are unique, including the sharing of raw data to allow as much transparency and flexibility in interpretations and applications of results as possible. Most important, this is a descriptive case study laying out some basic classroom procedures that the lead author and colleagues are developing into an ongoing formative assessment framework intended to provide a dynamic feedback loop to inform instructional decisions.

The research questions driving this particular paper are based on a series of case studies we are using to build the framework and assessment system. For this paper, the emphasis is on articulating a more accurate description of a Joint Attentional Frame for adults, and to emphasize features of the data that have potential for assessment. The research questions for this study are:

1. How do participants combine different concrete and abstract resources and ideas (e.g., their bodies, objects in the immediate environment, language, visuals, and directions for formal academic goals) to create oral and written summaries?
2. Is there evidence of student development of explicit awareness of abstract ideas, such as the relationship of supporting details to main ideas and thesis statements in the video data?
3. What kind of model can be developed to illustrate the complex nature of language and literacy learning to inform a wide range of stakeholders, including the surrounding community, administrators, students, teachers, and researchers?

The formative assessment system taking shape as a result of this and other papers is based on the idea of competence as design (see Kress, 2003). According to Kress (ibid), "The world of communication is now constituted in ways that make it imperative to highlight the concept of design, rather than concepts such as acquisition, or competence, or critique" (p.36). These ideas from Kress and a number of other theorists (Robbins, 2003; Tomasello, 2003; van Leeuwen, 2004; Wertsch, 1998) have formed this set of procedures and several segments of data and cases from an ongoing action-oriented research project (see Unger & Scullion, 2013, Unger & Liu, 2013; Liu, Unger, & Scullion, 2014). The entire project entails researching how integrating digital video cameras into basic reading and writing activity transforms the students' work with language into more standard levels of competence from non-standard English language and schooling foundations.

One of the main objectives of the research is to document different ways adult students in English for Academic Purposes (EAP) courses combine and transform three main features of communicative events --Speech, a Visual, and the Act of Pointing -- into final written outcomes of summaries, responses, and five-paragraph essays. In other words, we are emphasizing the function of design as process, with Speech, a Visual, and the Act of Pointing as features that can be assessed by all stakeholders, Speech, Visuals, and Acts of Pointing can be viewed across contexts and content areas, and these reference areas can be actualized as units of analysis to capture process features of learning rather than only outcome, which is the usual focus of standardized assessment.

We will first introduce the foundational concepts of learning and development that have informed and inspired this particular formative approach to assessment. These foundational concepts are intended to be understood by all stakeholders (i.e. students, teachers, administrators, and the general public), despite the complexity of language learning, literacy, the human mind, and the walls of expertise that keep the public uninformed. By walls of expertise, we are referring to the well-known dominance of standardized testing companies such as Pearson Education and McGraw Hill in the States (see http://www.pbs.org/wgbh/pages/frontline/shows/schools/testing/companies.html), and TOEFL and IELTS and similar examining systems throughout the world. These gatekeepers of expertise dominate understandings of language and learning as discrete skills that can be quantitatively measured. Moreover, institutions of higher education maintain a structure of distinct disciplines, all competing for a limited amount of

funding and have well-known tendencies to operate in isolated disciplines (Thesen and Cooper, 2014). Measures of quantitative gain that is counted as a measure of learning operate at a level far removed from what students and their parents, and many teachers, can grasp as the activity of creating and using signs, which we are presenting as a basic function of human existence that can be unpacked in an accessible manner.

From a methodological perspective, which will become quite clear through the presentation of the data, we are purposely leaning our methodology and positions as researcher/teachers to "interpretation and empathy" rather than "prediction and control" (Harré & Gillet, 1994 p. 21). Involving participants and recognizing our own roles as participant observers is an inherent part of the overall action-oriented methodology (Stringer, 2014); the methodology, as these methods are informed by our broad-based Vygotskian, and semiotic-oriented theoretical framework, is intended to be an active part of the teaching, and, as much as can be feasibly accomplished, the methodology is a part of all phases of instruction, simultaneously serving as an assessment, teaching, and research tool. However, the emphasis on the methodology as an active teaching, learning, and research tool, revolves around the flexibility of the methods and theory, which will become clearer as we proceed from theory to practice to data.

Theoretical Framework

Signs, Signification, Mediation, and Semiotic Resources

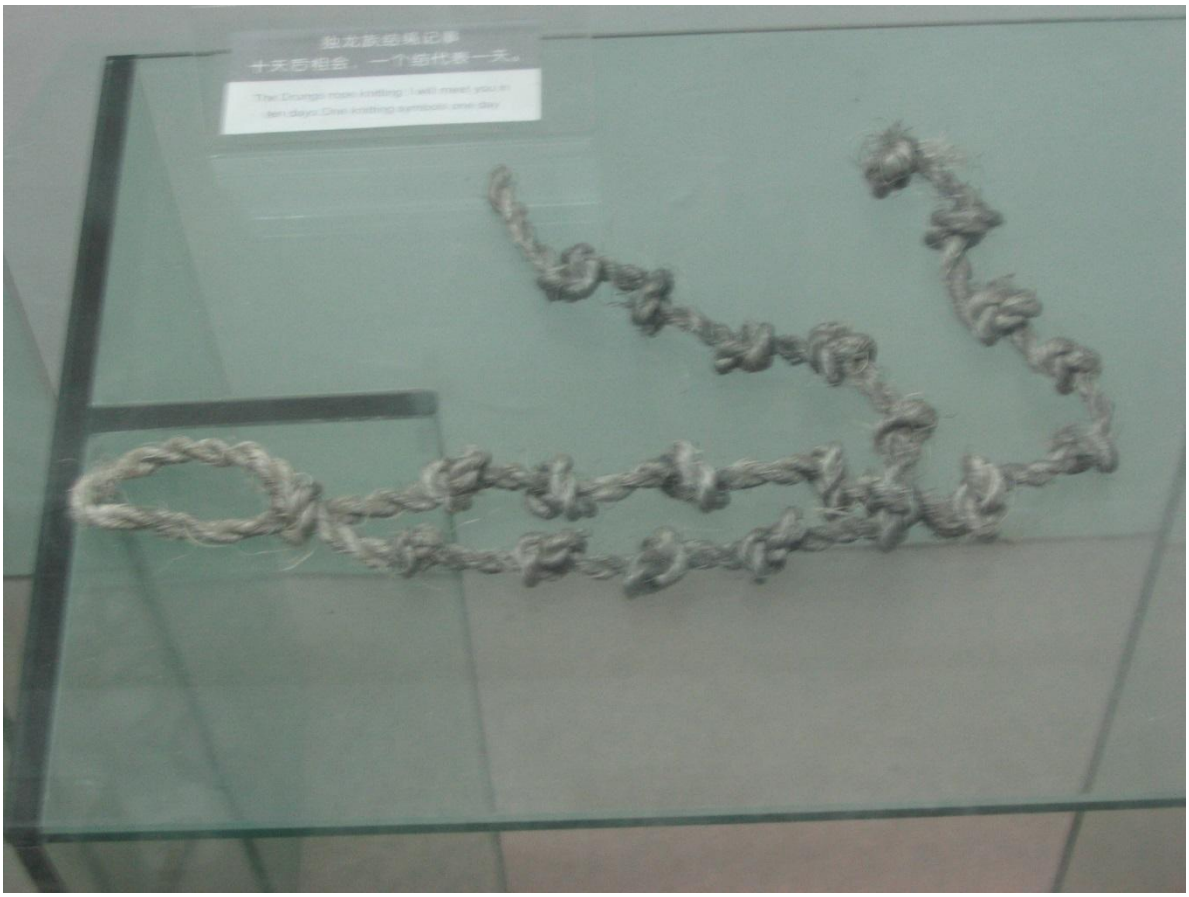
Some basic ideas on language, literacy, and learning and development are emphasized in this paper and, as in other case studies we have worked on (e.g., Unger & Scullion, 2013); overall, this paper makes some basic assumptions on learning and development that align with what is broadly known as a sociocultural approach to education (Kozulin, 1998; 2003). This broad approach includes the idea that humans use tools, language is a tool, and language is a system of signs used in specific intentional manners that depend on the surroundings (i.e., the context) to complete goal-oriented activities (see also Davydov, 1999; Robbins, 2003; van Lier, 2004; Wertsch, 1998).

One of the most prominent ideas about human learning and development is that our lives are filled with moments of signification and mediation, from our first baby moments of reaching for a bottle and having that reach interpreted by a more capable other as a pointing gesture (to

paraphrase a well-known Vygotskian, 1978, concept) to learning algebraic formulas, chemistry tables, traffic signals, or any of the other seemingly mundane to complex signs humans use to function in the world; human existence revolves around our creation and use of signs to plan, organize, and regulate our interactions with ourselves, with each other, and with the world (Kramsch, 2000; Wertsch, 1998; 2007; Robbins, 2003). Although we take the cycle of signification and mediation for granted, this cycle of signification and mediation is a central part of any language (i.e., sign system) and any language/literacy learning context. Most important, and which cannot be emphasized enough, stakeholders can begin to make comparisons of the literacy events that occur as a part of their daily lives and see these events in the classroom

An old and still common example of the transformative nature of signification and mediation and how these work together is tying a knot to remember something (see Vygotsky, 1978). The knot signifies an event, and in a very fundamental way, transforms activity with the self and world. Photos One and Two, which were taken at the Yunnan Nationalities Museum in Kunming, PRC, and Photo Three, taken as part of a long term study of signification and mediation in the Grand Theft Auto series for the Play Station Two (see Unger, Troutman, & Hamilton, 2005; Unger & Kingsley 2007), illustrate how this idea of assigning meaning to individual objects begins simply across different cultures and contexts, and develops into more complex sign systems with layers of meaning and intention.

Picture One shows ten knots tied into a circular section of rope signifying a specific number of days before an arrival; each knot represents one day. Photo Two shows the backs of two leaves together creating a basic, but clearly understood, “Do not disturb” sign. Photo Three is a copy of a Power Point slide of an old Play Station Two controller illustrating a sequence of signs that are part of cheat codes for an old Grand Theft Auto, Vice City game (see Unger, Troutman and Hamilton, 2005). Each of these photos directly illustrate how language, thinking, and human *agency*, the collective ability of an individual to have and/or use the means to achieve goals, becomes inseparable from signification and mediation, and is also an outcome of the design, specifically in the way signs can be positioned to express intentions.



Picture One: 10 Knots in a circle, signifying arrival in 10 days. One knot equals one day

Picture One takes the most basic example from Vygotsky, the idea of tying a knot to remember or plan something, and illustrates how this principle of sign creation and use quickly expands into a mediational means for social activity. The small information card next to the rope has a translation in English that states, "The Drungs rope knotting I will meet you in 10 days. One knotting symbol one day." This is an example of how signs developed from a knot used by one individual (i.e. "self") to remember something that may or may not be directly related to an intention with an "other" to a sign with specific intent *for* an "other."

This collection of signs seems similar to how a collection of separate word-meanings develop into groups called phrases or clauses; perhaps this ring of knots can be thought of as a prepositional phrase, "in ten days," which appears as part of a sentence with the subject "arrival times," expressed by the entire set of knots on the rope. The 10 knots are distinguished and separated with a kind of syntax signified by the arrangement of knots in a circle. The knots now mediate a more complex activity packed with intentionality toward other minds; the knots as

"sign" become a resource for communication. By following the conventions from *Social Semiotics* laid out by van Leeuwen (2005), we can call the knot a *semiotic resource*, which is never isolated from its sociocultural history and embodied life. Signs and sign systems become inseparable from the human condition; we perceive and think through the signs and sign systems we create and use (Pierce, 1991; Kozulin, 1998; Wertsch, 1998).

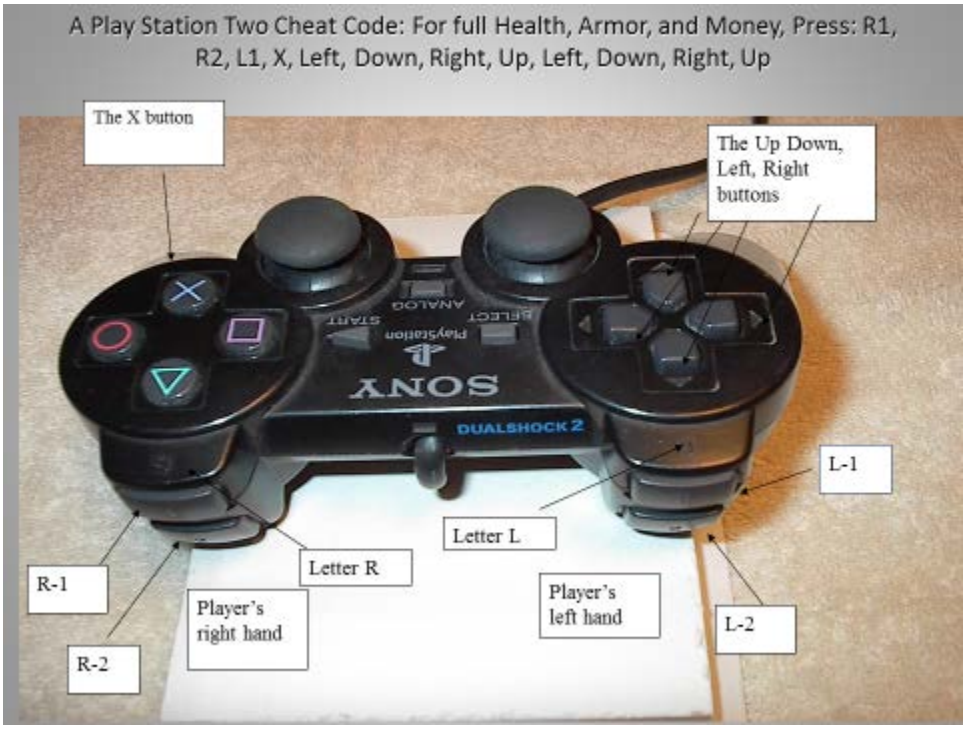
A quotation from Bakhtin (1981) describing the lived, embodied experiences that words carry is an effective analogy to apply to the actual and theoretical potential of semiotic resources (see also van Leeuwen, 2005, p. 4): "Each word smells of the context and contexts in which it has lived its socially-charged life; all words and forms are populated by intentions" (Bakhtin, 1981, p. 293). As signs are transformed into semiotic resources, they carry the potential meanings from the life of the sign, which is continually transformed as signs become semiotic resources mediating

Human activity; intentions are a crucial part of this entire process of signification and mediation (see Tomasello, 1999; 2003).

For the creation of the message in Picture Two, the intentions are more explicit, at least according to the museum card. This is another example of the way signs gain complexity as they are transformed into semiotic resources. The translation states: "Putting the backs of two leaves together means that I do not want to see you and go away from me please." This semiotic resource mediates the intention and emotion of a modern "Do not disturb" sign on a hotel room door by expressing embodied metaphoric qualities, as with people turning their backs on one another.

Picture Two: The backs of two leaves are placed together expressing explicit intentions

Photo Three is an example of a sequence of well-known cheat codes collected as part of a series of papers investigating signification, mediation, and the creation of semiotic resources with the PS2 and the Grand Theft Auto series of video games from around 2002 to 2005 (Unger & Kingsley, 2007; Unger & Kingsley, 2006; Unger, Troutman, & Hamilton, 2005).



Picture Three: Play Station Two with the Cheat Codes for a specific advantage for the main character

Recall that we began with the idea of tying a knot as a way to remember (Vygotsky, 1978) and then moved to counting days (Photo One). From there, we progressed to a more complex message of intentions (Photo Two), and now in Photo Three, we have a relatively complex series of buttons to press to provide the main character in the game with superhuman characteristics so that he cannot be defeated.

Several of the 30 participants in the overall research on signification and mediation in Grand Theft Auto could not name the complex cheat codes if they did not hold the PS2 controller in their hands. The cheat codes became semiotic resources that mediated plans,

choices, and success in the game (in this example, both the cheat codes and the controller are semiotic resources of different levels of abstraction and complexity). With regards to the inseparable nature of signification, mediation, and activity, the knowledge of the cheat codes separated those who were successful from those who were not. Despite the blatant corruption of using the codes (several players prided themselves on never using cheat codes), those who knew cheat codes or the simple function of pressing the X button to make the character jump faster (away from threats or toward goals) perceived choices through this sign system (see also Wartofsky, 1977). Players could not function successfully without thorough knowledge of the semiotic resources to succeed; moreover, this knowledge was gained through social interaction and experience with the game, and depended on access to knowledge about the game (online resources; maps that came with the game; discussions with friends).

Although many players reported some type of explicit social interaction linked to playing the Grand Theft Auto Games, the main point of these three papers was to explore the process of signification and mediation as these processes were related to perception, intentionality, and activity. The definitions of signification and mediation in these earlier Grand Theft Auto studies emphasized the dialogic nature of the self and community as proposed by Bakhtin (1981; 1986) along with ideas on the social nature of the self and other as outlined by *positioning theory* (Harre and van Langenhove, 1999) and the inseparable nature of perception and activity as outlined by Wartofsky (1977) (see also Wertsch, 1998; Wells, 1999). With these theorists providing a foundation, the players in and out of the game were understood as assigning meaning based more on their social positionings with self and others in and out of the game as reading and writing with signs than individual activity of gaming. It is beyond the scope of this paper to go into tremendous detail as to how this works out, as lengthy as this explanation already is, but the point of citing these earlier studies is to emphasize how the social nature of signification and mediation was established by earlier research and close discourse analyses.

Most important, with regards to how human cognition and literacy are always linked to a present or imaginary other, perception, and intentionality (Bahtin, 1981; 1986; Wartofsky, 1977), the Grand Theft Auto papers and data presented by the current language and literacy studies with digital video cameras, support the idea that human agency with signs is more of a social than individual activity (see also Wertsch, Tulviste, and Hagstrom, 1993) ; that is, although the game is performed individually, from a Baktinian perspective on the social construction of the self and

other, we are trying to balance our perspectives on sign systems (language and literacy activity) as occurring across several experiential domains, through which signification evolves as an ever-increasing complex array of positionings and socially-established intentionalities and perceptions with signs (Unger & Kingsley, 2007; Unger & Kingsley, 2006; Unger, Troutman, and Hamilton, 2005). And as argued by Wartofsky (1977) and Tomasello (1999; 2003), from different yet complementary perspectives, intentionality and intention-reading of self and other becomes a crucial part of any activity with signs. An avenue for assessment and research to capture this complexity of sign creation and use as dialogic positionings of *self to other to signs* is provided by relatively recent research on the social nature of cognition from Michael Tomasello (2003).

Joint Attentional Frames, Intention-Reading, and the Act of Pointing

Tomasello's concept of *Joint Attentional Frames* (Tomasello, 2003) has provided an idealized basic arrangement of students, language, and video cameras to prompt students to focus on specific features of the interaction to improve overall literacy outcomes. Tomasello (ibid) provides two illustrative examples of how Joint Attentional Frames consist of three major features: one or more participants, a third entity, and some kind of pointing to the third entity.

The first example of a Joint Attentional Frame is that of an adult interacting with a baby. Suppose the adult comes into the room holding a diaper; the adult looks at the diaper and the baby looks at the diaper, and the baby learns and knows that the sequence of events that will follow is *changing the diaper*. Through the gaze at the third entity, the baby reads the adult's intentions, and this reading of intentions is through signs. The baby reads the diaper as a sign and the adult facilitates this reading of intentions through a mutually contrived prompting of shared attention on the third entity, the diaper (Tomasello, ibid; see also Tomasello, 2001). The concept of reading intentions and expressing intentions, which is emphasized in the data with adult learners in this paper, is an important feature of the overall interactions.

To distinguish how this intention-reading and Joint Attentional Frame is different with adults, Tomasello (2003) described a traveler unable to speak Hungarian at a train station in Hungary. Suppose the traveler stands next to the ticket booth and is able to point to departure names, or a clock or to money in her hand as she asks questions pertaining to her travels. She is understood while pointing at objects in the immediate environment better than if she began asking about specific train information far away from any concrete third entity to create a frame

of reference. This is the same basic triadic arrangement of adult and child, albeit with major differences due to the myriad of transformations in this intention-reading process due to human development and context. For the classroom activities presented here, and for the overall theoretical framework, the Act of Pointing is a crucial feature of Joint Attentional Frames.

The Act of Pointing

Across the field of gesture studies, deictic gestures are a category that includes pointing gestures. Although the use of pointing gestures for these procedures has been informed by McCafferty (2002) and McNeill (2005; 2012), the current iteration of the procedures embraces ideas from Kendon (2004) to avoid some of the finer distinctions that McNeill draws on the relationship of intentionality to his refined categories of gestures (see McNeill, 2012). Consequently, Kendon's (ibid) definition of pointing is more appropriate for classroom applications, specifically because he emphasizes what participants in the interaction perceive as relevant, which aligns well with Tomasello's (2003) emphasis on shared attentions. According to Kendon (ibid):

> Pointing gestures are regarded as indicating an object or a location that is discovered by projecting a straight line from the furthest point of the body part that has been extended outward into the space that extends beyond the speaker. This space may be treated in more than one way. It may be treated as the physical space that the participants share, in which case the object of the point is an actual object or location that exist somewhere in the real world…On the other hand, the space into which the speaker points may be structured by the speaker's own actions.(p. 200).

Kendon's definition is consistent with using the *Act of Pointing* as a reference area for assessment related to design. Moreover, the Act of Pointing is presented to students as an important part of the writing process for them to track their transformations from concrete acts of pointing in oral summaries and essay outlines to recognizing how transition words and phrases *point* to specific interpretations.

In this study, students are encouraged to show only the hand and a pointer in the camera frame, which, by design, limits observable gestures. Given these parameters, however, another important gesture that is prevalent across all the data is the *beat*. Beats are gestures that go up and down or side to side in a rhythmic fashion (McNeil, 2012); beats have been found to be associated with searching for the right word (see McCafferty, 2002).

A Model of a Joint Attentional Frame

As human life unfolds through interaction with signs and activity, the creation of this kind of triadic arrangement, with the process of signification and mediation driven by sociocultural/historical influences packed with intentionality, obviously becomes more complex due to the layers upon layers of internalized interpretations and systems of signs. Moreover, intended meanings and interpreted meanings often transform the entire process. Digital video cameras and other 21st Century technologies offer an opportunity to closely investigate the development of communicative events that are modeled on this triadic to understand the path from interaction with text to formal academic presentations, summaries, and essays. For the digital activities and the path to assessment, an idealized Joint Attentional Frame with adults in the classroom might look something like Figure One (adapted from Tomasello, 2003).

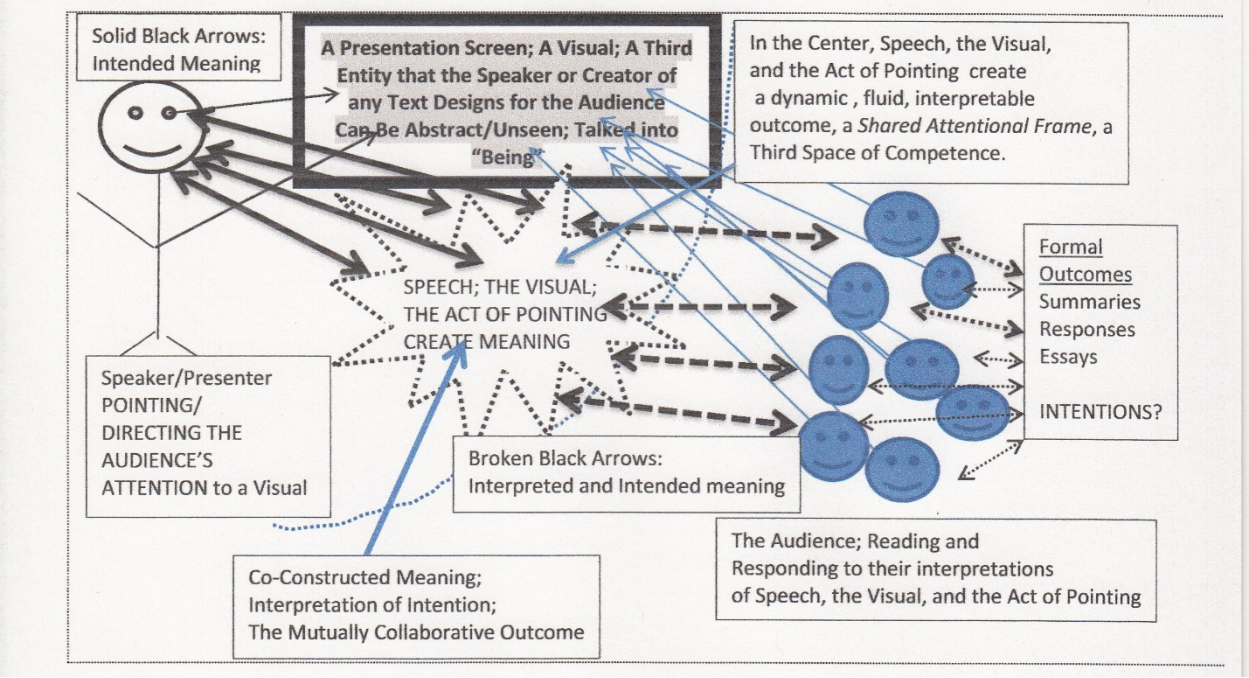


Figure One: An Evolving Model of a Joint Attentional Frame in the Adult Literacy Classroom for learners of academic English to provide areas of assessment for the concept of Competence as Design. Adapted from Tomasello (2003)

The Model of a Joint Attentional Frame; Speech, Visual, and the Act of Pointing as Areas for Design

As a summary to the overall theoretical framework and identifying areas for analyzing prominent features of design, the model in Figure One is a working draft, with obvious limitations in expressing the dynamic and abstract nature of sign, mind, and activity in a two-dimensional fashion, with arrows that could be interpreted as a conduit type of communication model, which is a limitation of a two-dimensional model. From the theoretical model here, learning and communication are never simply input-output two-dimensional phenomena. Despite the limitations, this model is intended as a broad guide to creating idealized Joint Attentional Frames and understanding how Joint Attentional Frames are enacted by the participants in the study, including how the outcomes (formal summaries and a five-paragraph essay) can be traced back to the original digital video presentation. In other words, the entire theoretical framework and model emphasizes process features of sign development and use over time, during which the participant moves from the position of speaker to audience to producer of a final summary, response, or essay. The entire process from beginning to end for three cases is available on the webpage (see http://transitional-literacy.org/?page_id=9969 password: rabbit14).

Recall that Tomasello's (2003) concept of Joint Attentional Frames describes an adult and child both looking toward a third entity; with the adult in the train station in Hungary, the adult had to point or refer to concrete items. The most important part of these kinds of profound intention-reading events is that one speaker intends to simultaneously affect the attention and intentions of an *other* and shows an awareness of the *others* perspective and intentions. According to Tomasello (ibid) "Communicative intentions are a special type of intention in which an individual intends something not just toward the inert object, but toward the intentions states of someone else" (pp. 22-23).

With regards to moving students from a wide array of literacy foundations, often inadequate for college level reading or writing, making inferences from different types of texts involves expressing and understanding the intentional states of the authors and creators of any media. Moreover, reading intentions becomes an inseparable part of this entire process. These cognitive-sign relationships are crucial for understand the fluidity of literacy with adult multilingual learners, how they express and comprehend the intended meaning of text, and how they express intended meanings from their own texts. These abstract yet fundamental process-

based and fluid cognitive-sign relationships are what we need to assess, alongside different types of more concrete grammatical features of academic texts (e.g., verb tense; subj-verb agreement).

Speech, the Visual, and the Act of Pointing

Returning to the model in Figure One, which also represents a basic structure of presenting information for the digital video cameras, three major features of the interaction are emphasized for students as they enact differing degrees of design: Speech, the Visual, and the Act of Pointing; all contribute to meaning as represented by the digital video recording. This meaning is then transformed into formal academic English. Moreover, these three terms are more broadly defined for students as they proceed across different media to read and write summaries, responses, and perform research for five-paragraph essays.

For the overall ongoing research, these three reference areas are defined as follows: Speech on the digital video recordings is comprised of oral speech; the Visual, as represented in Figure One, can be any type of visual in front of an audience, including a *metaphoric space* created with the hands (e.g., holding the hands apart in front of one's body while describing an event; see McNeill, 2012). For the digital video recordings made by the participants, the visual is normally a large poster paper, approximately three feet wide and four feet long, on which the students arrange chunks of language (as mentioned, three- to nine-word related clusters of words) (see Figures Two, Three, and Four); then students position themselves to the side and use a pointer or their hand to point at the visual. Students often make innovative changes in the procedures, and are encouraged to do so.

The oral speech in the video recordings is a combination of word-for-word readings of chunks of text represented on the visual, mixed with planned and spontaneous explanations that are prompted by the guidelines (go to http://transitional-literacy.org/?page_id=9969 password rabbit14; guidelines are also presented in a separate Procedures Section) . Also, a major requirement for this activity is for students to explain the abstract relationships of supporting details to responses, main idea statements, and thesis statements. In other words, they are asked to explain the strength of support, answering the following questions: specifically, why or how is this supporting detail related to the main idea or thesis statement? Additionally, when students move to other media and modes, such as web pages, they are prompted to note how Speech, a Visual, and the Act of Pointing unfold differently in each mode. Most important, when students

move to the writing stages, they are prompted to be conscious of how speech is now in a formal dialect of written academic English; acts of pointing are now expressed through transition words and phrases (e.g., on the other hand; for example; as a result of), which are linked to different types of rhetorical patterns (e.g., compare and contrast; cause and effect) across the academic disciplines and applied technologies.

One of the main objectives with the visual is for students to work with quoted text and their own statements to present explanations of how supporting details relate to main ideas and thesis statements. The visual becomes a major tool for themselves and the audience; in this case, the audience consists of the student operating the video camera, the instructor, and any other students in the area who might be waiting for their turn.

The Act of Pointing is a feature of the presentations that the students are encouraged to use to direct the audience to specific parts of their visuals, and the Act of Pointing is emphasized in the directions, during the process, and, in recent iterations of the activity, the Act of Pointing in the videos is enacted by 24-inch metal pointers with a rubber hand in the iconic shape of a closed hand with the index finger extended.

Figure One represents how Speech, the Visual, and the Act of Pointing create a third space of collaborative thought, marked by the star shaped cluster at the center of the Joint Attentional Frame. The major emphasis here is on how meaning does not reside in any individual mind during communicative events, but exists as a combined, momentarily-synthesized meaning representative of how the speaker puts together Speech, the Visual, and the Act of Pointing. The thick solid black arrows leading from the speaker to the center, as stated on the diagram, represents the speaker's intentions, which are expressed by a combination of the information the speaker points to on the visual and in oral speech. Also in Figure One, note how the intentions expressed by the speaker, marked by the solid arrows, are marked by dashed arrows to signify interpretations by the audience. In other words, in the evolving interaction an author's intended meaning is transformed. The density and thickness of the arrows indicate how the author's original intentions are transformed as these intentions become a part of summaries, essays, or other types of text, often across different media and modes.

An author or speaker's intentions can differ wildly from audience interpretations; such is the chaotic nature of activity with text. Then as the audience or *author-as-audience* with the digital video cameras, moves to writing a formal English language outcome, the speaker's

intentions continue to be transformed. In further iterations of the representations of intentions, as the students move from Speaker to Audience again, as with the case of summaries and when participants are watching themselves on video, those arrows could very well be drawn solid again, and this area of the concise nature and strength of how the author-intentions of any text (essay, movie, song) is expressed can be a very rich area for assessing the abstract relationships of thought to word to image to meaning and many other features of communicative events that are out of reach of quantitative measures, but certainly must be considered areas of competence.

The repositioning of the speakers to audience when the speakers view their video recordings is specifically relevant to Figure One as a representation of language usage, activity, and critical thinking. Speakers watch their videos and answer several questions that focus attention on the formal academic English on their videos and how they used Speech, the Visual, and the Act of Pointing to express abstract relationships (see the link to download the forms for both oral summaries and responses and essays at http://transitional-literacy.org/?page_id=9969 password rabbit14).

To summarize the overall semiotic approach to bring theory into research, instruction, and assessment, particularly for digital video recordings: learning and development happens "right before one's eyes" (Vygotsky, 1978, p. 61). Moreover, moments of signification and mediation can be tracked over time, with an emphasis on how the semiotic resources of Speech, a Visual, and the Act of Pointing evolve across different media and modes as students proceed from prewriting to final drafts of summaries and responses to readings and in the creation of five-paragraph essays, or many other types of outcomes. Prompting students to arrange themselves in idealized Joint Attentional Frames, along with the theoretical framework, provides an accessible and rich frame of reference for a more dynamic and authentic understanding of competence.

Background Literature

A broad array of literature is represented by the wide ranging nature of the language and literacy problems that are confronted any time the human mind and activity with signs are investigated. Prominent in the literature on digital literacy is how digital video cameras and the internet offer a dynamic space for reading and writing to take place (Blake, 2011; Royce 2002; Thorne, 2008). The dynamics of literacy instruction at the pre-college course level with adults is

a rich, complex area for exploring language/literacy learning (Relles & Teirney 2013), and as those of us involved in teaching basic reading and writing skills to make students college-ready have found, the types of literacy abilities to communicate across different devices and situations is fluid, constantly changing. Much of current literature on digital resources refers to literacy in the 21st century as *Digital Literacies* and *New Literacies*, and at this point in time, integrating digital resources into instruction is a wide open and lively field (Lankshear & Noble, 2011; Spalter & van Dam, 2008;Tierney, 2008).

Digital video cameras offer an option to work across several modes (e.g., oral speech, writing, moving image) with an emphasis on providing learners with plenty of space to playfully experiment with language while learning how to evaluate their own performances (Goulah, 2007; Montgomerie, Little, & Akin-Little, 2014). These types of process-based assessments are becoming more prevalent and seem to be an effective option to pursue in language and literacy learning (Britsch, 2009; Turner & West, 2013). Digital video cameras have been found to offer tremendous potential to unpack specific areas in language and literacy competencies to develop avenues for assessment and improvement (Avery, 2007; see also Li, Cadierno, & Eskildsen, 2014). What is particularly interesting is that many of these studies are oriented toward variations of digital storytelling (Mahdi, 2014; Maier, 2007; Ranker, 2008) in which students are positioned as teachers, similar to the activity of *reciprocal teaching* (Palinscar & Brown, 1984; Gruenbaum, 2012; see also Wertsch, 1998).

Pandya (2013) reported positive links between digital video composition, literacy and English language learners. She also considered the complexity of assessing language learners' literacy development in multimodal composing. Her paper raised the question of how we could achieve literacy development by increasing multimodal composition. Avery (2007) reported on the use of digital video cameras as a form of writing in an advanced composition course. One of the early assignments in the course was to ask students to make three-minute long video presentations defining the term *literacy*. Other kinds of assignments that she reported included prompting students take a stand in an argument and then represent a topic about which they knew little and had to research, and transform the research into a documentary type of film. A final project was a combination of the first two projects into a final video. She reported positive responses from students and instructors, though Avery points out that assessment has been "by

and large, anecdotal" (p. 90). She concludes with a need for more assessment options for digital video assignments.

Majekodunmi and Murhaghan (2012) used video recordings to document students' literacy experiences, specifically targeting students, in their first year as they learned about the library and developed critical thinking skills. The researchers, who were also librarians, found that much of the library media had librarians lecturing students, so these librarians used video cameras to film interviews of cohorts of students during different times of the year and have students recount experiences in using the library. Majekodunmi and Murhaghan (2012) found the students' answers from the semi-structured interview questions went way beyond issues with the library and included many of the well-known issues first-year students struggle with, such as time management, learning skills, writing, and citing sources. The entire process of conducting research and creating instructional videos from student interviews demonstrates the power of digital video cameras as effective teaching and learning tools. Their study provides a model for a reflective process for students and teachers to embrace, in addition to supporting a model of transparency and how a research paper can be used as a guide to conduct research across a variety of educational contexts.

A more in-depth examination that takes a distinctively ethnographic and more semiotic approach to classroom interaction is Leander and Rowe's (2006) *Rhizomatic Analysis*. The term rhizomatic is defined as "...any network of things brought into contact with one another, functioning as an assemblage machine for new concepts, new bodies, new thoughts; the rhizomatic network is a mapping of the forces that move and/or immobilize bodies" (Colman, 2005b, p. 232). "Rhizomes have no hierarchical order" (p. 433).

Leander and Rowe (2006) take a very fine-tuned, detailed approach to their classroom data, identifying semiotic resources and how students point to visuals and different parts of the classroom during performances; however, their overall approach uses a refined extensive glossary that may not be appropriate or appeal to a wide scope of stakeholders due to this specific, idiosyncratic approach. Nonetheless, Leander and Rowe's study supports a wider perspective of literacy and language than many other approaches (see Lanksher & Noble, 2011). Most important for the digital video activities presented in our paper is the embodied approach taken by Leander and Rowe, and their position that literacy education can be an actualization of

the visual, which is a major aim of incorporating digital video cameras into the reading and writing process.

A series of case studies by Miller and her colleagues (Miller, 2007, 2008a, 2008b, 2010a, 2010b; Miller & Borowicz, 2005, 2006, 2007) examined the impact of digital video multimodal composing on language learning and teaching and found evidence of increased transformative learning and student engagement. As with the other research reviewed for this paper, Miller and colleagues proposed a multimodal literacy pedagogy, which emphasizes the role of authentic purposes and social spaces and identities in multimodal composing. The researchers call for more digital video composition in school literacy.

Several scholars with broad sociocultural theory backgrounds (Gutiérrez, 2008; Sindoni, 2014), or with what is called *New Literacies* perspectives (see Lankshear and Knobel, 2011; Teirney, 2008) on literacy and language learning, place some of the same broad principles of Vygotskian related ideas (see *activity theory* in Davydov, 1999; see also Wells, 1999; Wertsch, 1998), such as signification and mediation, at the center of goal directed activity (see also Guerrettaz & Johnston, 2013). Although there are differences in the literature about the semiotic and mediational nature of human activity with signs, there are many avenues for actualizing and studying these ideas; however, what is still lacking is a more broadly applicable approach to assessment of multimodal systems of literacy, a broadly applicable approach that can reach across academic disciplines and borders.

Gutiérrez (2008) stands out with regards to proposing a *third space* for investigating interaction, although her presentation covers a much wider ethnic, linguistic, and sociocultural/historical perspective of the exemplar case than is presented by our digital video camera activities. However, some of the descriptions and goals Gutiérrez mentions align with much of the background theoretical basis and space for language play and learning that is created by the digital video camera activities. Gutiérrez describes a third space as "a transformative space where the potential for an expanded form of learning and the development of new knowledge are heightened" (p. 152). Mediating artifacts play a central role in Gutiérrez's study, and the digital activities in our paper are intended to be a part of this type of "expansive learning" (p. 152) across academic borders:

> By attending to the microgenetic processes of everyday learning across a range of contexts, with one eye focused on the collective and the other on the individual sense-

> making activity, we can note new forms of activity stimulated by unresolved tensions of dilemmas that can lead to rich cycles of learning, what Engestrom, 1987, called expansive learning (p. 152).

Another study that takes a wide view of classroom interaction from an ecological perspective is Guerrettaz and Johnston's (2013); they investigated how specific materials such as textbooks dominate the classroom and curriculum. One of the major proponents of the ecological approach to the classroom was van Lier, 2004, who has heavily influenced the theoretical framework and approach to teaching and research for our work. Using van Lier (ibid) and other sources (e.g., Brofenbrenner, 1976), Guerrattaz and Johnston describe the ecological approach as conceiving of "...educational settings like classrooms as constituting systems akin to biological ecosystems and propose that research focus on the relationships among the various elements present in the classroom environment" (p. 782). Overall, this same kind of perspective dominates our approach to investigating the process of signification and mediation as these unfold in the contrived ecology of the Joint Attentional Frame into which we position students in specific ways to promote learning. Of course, as Guerrettaz and Johnston (ibid) propose, more types of ecological and qualitative approaches to classroom research are needed.

Overall, the literature related to digital video cameras in the classroom is dominated by positioning learners as teachers, as with reciprocal teaching strategies (Fiorentino, 2004; Gregory, Steelman, & Caverly, 2009). Moreover, ethnographic approaches and case study research is demonstrating the need to gain a better approach to assessing the complexities of language education in the 21st century. Overall, the literature related to digital video cameras and multimodality supports a move beyond artificial disciplinary borders and a more semiotic approach that can assess the inherent fluidity of literacy and process alongside accepted standardized approaches that emphasize specific pre-determined outcomes.

Method

Overall, we are adopting several foundational ideas from Vygotsky (1978; 1986; Luria, 1979; see also Wertsch, 1998; 2007) with this quote as a starting point: "any psychological process, whether development or thought or voluntary behavior is a process going right before one's eyes" (p. 61). Moreover, as emphasized throughout the theoretical approach, the method and procedures revolve around making the signification and mediation process transparent, with

the reference areas for analyses (Speech, the Visual, the Acts of Pointing, and chunks of text), as efforts to embrace the analogy that these interactions are dynamic, fluid, and embodied. The reference areas for analyses are intended to embrace the idea that any unit of analysis also be representative of the entire phenomenon (Wertsch, 1998; Luria 1979). This is expressed in the well-known analogy of the difficulties in studying water as separate parts of hydrogen and oxygen.

If hydrogen and oxygen are used as units of analysis, we are isolating parts from the whole for analysis and no longer really studying the fluid and dynamic display of hydrogen and oxygen that creates water. By emphasizing the process of signification and mediation, which are the fluid interpretable bonds tethering our thoughts and words together, accessible reference areas can be outlined to track the fluidity of movement, human dialogic activity with signs (see Bakhtin 1981; 1986). Depending on the needs of a specific educational context and the associated research questions, each or all of these reference areas can be foregrounded as units of analysis.

To provide flexibility for a wide range of theory-into-practice scenarios, we have adapted action research parameters from Stringer (2014) and general case study suggestions from Yin (2009). As mentioned frequently throughout the paper, we are sharing the transcripts and video data, along with specific procedures on how the data was collected, as a function of the day-to-day integration of digital video cameras into reading and writing activities. Recall that this allows readers to follow the development of literacy strategies as they occur "right in front of one's eyes." (Vygotsky, 1978, p. 61). Moreover, with Speech, the Visual, and the Act of Pointing as reference areas, and Chunks of Text as another reference and an emergent unit of analysis, we are enacting interpretation as a transparent collaboration between Teacher/Researcher/ Authors and all Stakeholders.

Procedures: Shaping Participants' Responses

Case Caesar

In this lesson used with Case Caesar, students practice an inductive critical reading strategy to create an oral draft of a summary and response for an editorial they have chosen. Writing a summary and a response to an editorial is a major component of the final exam required to pass the course.

The lesson objectives are:

1. ...to identify pertinent supporting details in an editorial
2. ...to use inductive reasoning to determine the main idea in an editorial
3. ...to compose a reflective personal response to the argument presented in the editorial

The following instructions are given to students prior to making the video:

1. Find an editorial about a topic of interest and read it carefully. As you read, consider the answers to the questions "What is the topic?" and "What does the author want you to know?"
2. Choose three supporting detail quotes from the article that you believe are important.
3. Using these supporting detail quotes and the answers to the questions "What is the topic?" and "What does the author want you to know?" determine the main idea of the editorial. Write a main idea statement.
4. Write a short response to the editorial. Use specific supporting details to explain why you responded as you did.
5. Using poster paper and colored markers, create a visual that presents the main idea, the supporting detail quotes, and your response.

Student directions for making Video One:

Introduce each supporting detail and provide an explanation by using the following general language forms. Do not worry about being too informal. 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 first supporting detail is____. This supporting detail supports the main idea because___."
2. "The second supporting detail is____. This supporting detail supports the main idea because____."
3. "The third supporting detail is____. This supporting detail supports the main idea because____."
4. Read your response statements; try to keep this only one or two statements (remember you want to write about a 4 to 7 sentence response on the final).
5. Choose the most appropriate supporting detail that you think supports your response and say why you think this supporting detail is related to your response.

6. Conclude by saying anything you want, though if you are stuck with something today, say something like: "And that concludes my Main Idea and Supporting Detail Presentation about____."
7. After the person concludes, the cameraperson should turn off the camera.

The lessons described for Case Caesar and for Case Larry require approximately two ninety-minute class periods to complete (this can really vary across different groups). In the first class session, students locate an online editorial, read it, and create their visuals using poster paper and colored markers. In the second class period, students make their videos using digital video cameras; student groups of two to four students take turns presenting and recording each other's presentations. Students who are unfamiliar with using digital video equipment may require additional time.

Case Larry

With Larry's data, his class had previously completed the video assignment described in Case Caesar and were working on making a second oral summary and response video. While the objectives and instructions remained the same, three additional components were added in this second phase.

First, students were asked to design a graphic organizer to use as a visual. They were taught a mini-lesson on types of common graphic organizers and given the following directions in the handout "Using a Graphic Organizer as a Visual; Directions for Video 2": *For this presentation, you will be using a graphic organizer to represent and explain your main idea and response. Graphic organizers are prevalent in textbooks, the internet, and in every field and discipline; how you arrange your text, image, and what you point to in one way or another, crucially affects the meaning you are expressing. I would like you to look at your graphic and be able to tell me how the information is intended to flow; that is, I introduced a term called "reading path," and you are using a graphic organizer to create a path you and the audience are going to follow. Note how a Tree Diagram, a Flow Chart, a Concept Map, and a Matrix prompt the reader and audience to move in one direction or another.*

Second, students were asked to introduce their supporting detail quotes with transition words and phrases such as "According to the author..." or "The author argues…." Using transition words and phrases and introducing direct quotes are a required component of written summaries and responses throughout the course and on the final exam.

Third, students were given specific instruction about pointing to help them understand the purpose and importance of pointing in creating meaning for an audience. These directions were also included on the handout "Using a Graphic Organizer as a Visual: Directions for Video Two:" *You will have pointers; remember, stay out of the frame and do not point at every little thing. Be relaxed, though conscious of your pointing. Your Pointing, along with your Speech, and the Visual are together creating meaning for your audience.*

Case Sally

With Case Sally, the situation is different than Case Caesar and Case Larry. For this pre-college writing class for non-native speakers of English, the exit exam for the course requires students to compose a traditionally-formatted five-paragraph essay. The exam is timed; the prompts are chosen from a State Regents' website. The lesson for Case Sally is a prewriting exercise that encourages students to make a solid connection between supporting details and an explicit thesis statement. An explicit thesis statement is one in which the topics to be discussed in the body paragraphs are listed directly in the thesis statement (Folse, Muchmore-Vokoun, and Vestri-Solomon, 2004). For example, an explicit thesis statement for an essay about the causes of divorce might read: The main causes of divorce in the United States today are financial issues, infidelity, and domestic abuse. The first body paragraph would then explain how financial issues cause divorce, the second how infidelity causes divorce, and the third how domestic abuse causes divorce. In our experience, writing explicit thesis statements provides EAP students with a macro structure to organize their ideas in order to also attend to micro-level grammatical issues. Of course, these procedures can be adjusted for other academic writing situations.

The lesson objectives for Case Sally are:

1. ...to brainstorm supporting ideas on a chosen topic
2. ...to write an explicit thesis statement using the supporting ideas
3. ...to write a "hook" that will catch the reader's attention.
4. ...to explain how the supporting ideas relate to the thesis

Students are given the following instructions prior to making the video:

1. Choose a topic from the GA Regent's topic site.

2. Using the template "Brainstorming and Outlining," brainstorm topic ideas for body paragraphs and supporting details for each topic. This template will lead you through the brainstorming process and will predict what your essay will be about.

3. Using these topics and supporting details, write an explicit thesis statement.

4. Now think of a "hook" to use to catch your reader's attention. (A hook may be a question, a quote, a statistic, a unique scenario, or a unique observation.)

5. Create a poster visual that presents your hook, thesis statement, and 3 supporting reasons. You may design your poster using any graphic organizer format you think will work best.

Students make a video following the "Directions for Inductive Approach to a Thesis-Video" template:

a. Introduce yourself; use a pseudonym (a fake name; mine is rabbit)

b. Read your hook. DO NOT READ YOUR THESIS NOW; READ YOUR THESIS LAST

c. Say: "Today I'm going to present the overall topic of ___.

d. My first body paragraph presents the subtopic of ___.

e. An important supporting detail in this paragraph related to the thesis is ___. It is related to the thesis because___.

f. The second body paragraph presents a subtopic of__.

g. An important supporting detail related to the thesis is__. It is related to the thesis because__.

h. My third body paragraph presents the subtopic of ___. It is related to the thesis because___.

i. The thesis is: READ THE THESIS

(Note: The templates "Student Directions for Making Video 1" (Case Caesar), "Using a Graphic Organizer as a Visual: Directions for Video 2 (Case Larry), "Brainstorming and Outlining" (Case Sally) and "Directions for Inductive Approach to a Thesis-Video" (Case Sally) can be found at http://transitional-literacy.org/?page_id=9969 password rabbit14.)

The pre-writing lesson described for Case Sally also requires approximately two ninety-minute class periods to complete. In the first class session, students choose a topic, brainstorm, and create their visuals using poster paper and colored markers. In the second class period, students make their videos using digital video cameras; student pairs take turns presenting and

recording each other's presentations. The students who participated in this lesson used the information from the prewriting as a basis for drafts of five-paragraph essays written in subsequent class sessions.

As can be seen, although the assignment for Case Sally is slightly different from the ones for Case Caesar and Case Larry, the inductive procedure is similar, as are the overarching goals - to help students understand and communicate the connection among main idea and supporting details in reading and among the thesis statement and supporting details in writing.

Results and Discussion

Due to the fluid nature of the ongoing action research project and the process-based types of questions, the Results and Discussion are presented together. This also allows for more description on how each Case handled the directions differently and how outcomes differed. When we are looking at the results and interpreting what we see, we invite the participants to take advantage of the links to the video data, transcriptions, and other related resources at http://transitional-literacy.org/?page_id=9969 password rabbit14).

As stated throughout the manuscript and as part of the ongoing research, the focus here is on the process features of the interaction, looking back and forth across each step in the overall directions the participants followed through all the steps. Recall that for Case Caesar and Case Larry, the objectives involved developing summaries from editorials, and for Case Sally, the objective was the development of an argumentative essay from a practice essay-prompt generated by the State Board of Regents website.

For the Results and Discussion section, we will present segments of data that best exemplify responses to the research questions, though with the caveat that this is an ongoing study, and the answers are presented as a collaborative, transparent interpretation that involves an accessible representation for all stakeholders. Moreover, because we are sharing the data from which we are making our interpretations, readers can become more active participants in gauging the credibility of our findings, and can therefore use these findings and this paper as a reference to their own educational situation. We will first frame the Results and Discussion from Questions One and Two; Question Three forms a major part of the Conclusion.

Question One and Two:

1. How do participants combine different concrete and abstract resources and ideas (e.g., their bodies, objects in the immediate environment, language, visuals, and directions for formal academic goals) to create oral and written summaries?
2. Is there evidence of student development of explicit awareness of abstract ideas, such as the relationship of supporting details to main ideas and thesis statements in the video data?

For Case Caesar and Case Larry, they were both working to produce formal summaries, one of the overall course objectives. Recall that Case Caesar used the basic main idea and supporting details procedure to create a main idea and present supporting details. Case Larry basically followed the same procedures, but for the second videos across courses, we have shifted to having students use one of several types of graphic organizers, in the process trying to prompt awareness of how different graphic organizers express different types of overall essay styles (e.g., compare and contrast essays and T charts or Venn Diagrams; process essays and Flow Diagrams). For Case Sally, she was using one of the variations of an outlining activity that incorporates digital video cameras (see Unger & Scullion, 2013). As with Larry, Sally was instructed to create a graphic organizer; however, the overall activity is intended to prompt students to work in an inductive fashion, brainstorming supporting details on an outline template, and then moving from the supporting details to creating a thesis and hook by asking the same general guide questions of the brainstormed supporting details (i.e., What is the topic? What does the author want you to know?). We will cover these cases with regards to each research question in the order the data is presented on the webpage at http://transitional-literacy.org/?page_id=9969 (password rabbit14). We begin with Case Caesar.

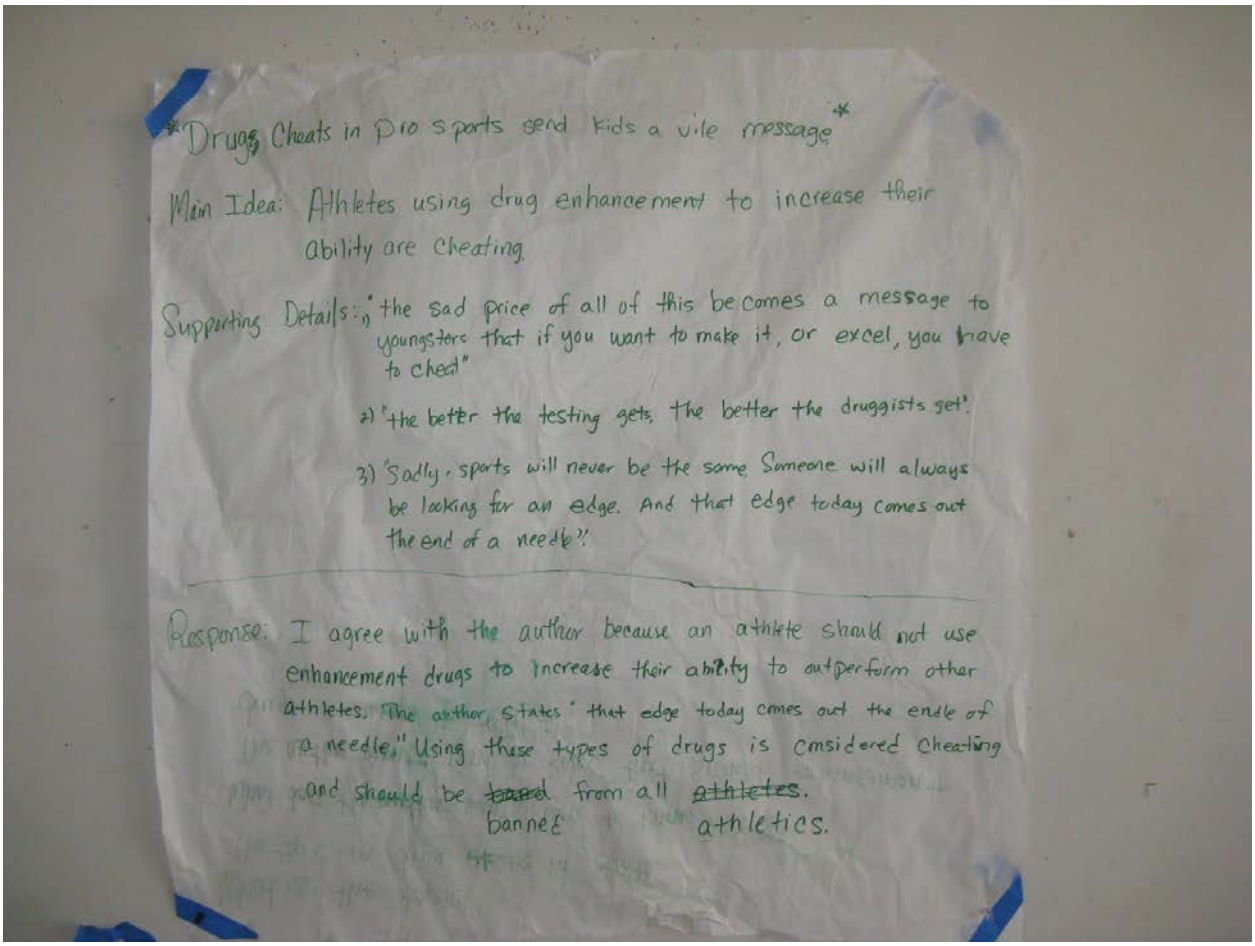


Figure Two: Visual from Case Caesar

Case Caesar chose a New York Times Editorial about the use of enhancement drugs in sports. As mentioned earlier in the procedures, Caesar did some prewriting with the two guide questions: What is the topic? and What does the Author want you to know? From the pre-writing sheet, he created the visual in Figure Two.

Caesar is one of those very motivated students who is serious about his studies, and his writing was above average with regards to high levels of grammatical accuracy and an effective grasp of the abstract critical thinking concepts that the digital video activities were aiming to teach (i.e., he readily understood the aim of establishing a relationship between supporting detail and main idea).

As part of the early steps across courses, students are asked to find and choose editorials from the internet on a topic in which they are interested. Before choosing an editorial, we practice using the two overall guide questions: What is the topic? and What does the Author want you to know? These are introduced using a variety of means, but all students eventually

encounter a broad example of how this works out with a story presented at http://transitional-literacy.org/?page_id=9005. After practicing these topics with the sample paragraph and a variety of paragraphs chosen at random from the reading course textbook, Case Caesar produced almost the same identical information on a word document as he did on his visual, except that he changed the order slightly and added to his response statement. As we will see with the other Cases, this initial step naturally works out differently for everybody.

For the video, one important difference in each of the three Cases is how each participant positioned Speech, the Visual, and the Act of Pointing differently from the given directions. With Caesar, this video was the first of the semester, and we had not yet introduced the 24 inch Pointers as with Case Larry. Also, for the first video with all students, the directions prompt a relatively simple arrangement as illustrated in Figure Two, with a Topic Title at the top of the Visual, the Main Idea Statement next, the Supporting details underneath, and the Response statement at the bottom. In these and other respects, Caesar exemplifies an ideal case; that is, he followed the directions and revised at different steps (without as much revision as many students; he did not need much revision), and he produced a reasonably well-fashioned summary and response. Although he placed more emphasis on quotes than we normally suggest (one quote is a requirement for the final exam Summary and Response), the quotes Caesar chose were particularly powerful. The only less-than-ideal use of each step performed by Caesar was perhaps a lack of more specific detail on the self-evaluation questions. Nonetheless, some of the improvements showed an awareness of the function of transition words and phrases.

As we go through Caesar's data, a number of areas are salient in expressing the potentially positive influences on how he is developing different resources to make meaning. Starting with the prewriting take-home assignment in which students read an editorial and identify supporting details and develop a main idea statement, the differences are minimal between Caesar's draft of information on a Word Document and the material he places on his visual. However, Caesar demonstrates an awareness of developing an idea by changing the order of his materials and extensively revising his response statement as he moved from the initial guide questions to the visual (see Figure Two and the data can be seen in the order it was produced at http://transitional-literacy.org/?page_id=9969 password rabbit14). Through these first two steps of using the Word Document, Caesar also demonstrates that he is able to break down the overall content of the Editorial into topic and author-intention. Most important, as can be seen on the

visual, on the video, and in the draft of his summary and response, Caesar chooses very strong quotes to use, emphasizing the powerful quote and metaphor: "looking for an edge."

One of the major differences between Caesar's video and Larry and Sally's videos is the manner in which he points at the visual, which, overall seemed very striking in the lack of uncoordinated *beats* (recall that beats are a type of gesture that has a rhythmic back and forth and/or up and down movement). Caesar's pointing and speech is smooth and confident; no visible tensions. With Caesar, his hand and index finger are prominent features of his Acts of Pointing that flow smoothly with his speech. One of the noticeable characteristics of Caesar's pointing on the visual was how carefully he followed each word at times while he read, pointing his finger word-for-word with what seems to be more organized intentionality towards specific words and phrases; that is, he continuously has his hand over different chunks of written text that expressed some part of the overall meaning of his oral speech. In other words, there did not seem to be tensions between Speech, the Chunks of Text on the Visual, and the Act of Pointing.

As Caesar's hand pointed, sometimes circling gently over areas of the visual as he went back and forth across different chunks of text, Caesar can be observed weaving together the semantic relationships that he perceives exist between the supporting details and main ideas. For example, in explaining his second supporting detail, his hand waves toward the words "enhancement" and "cheating" to relate these to "the better the testing gets," and he uses a comparative form of strict, "stricter," while waving his hand over this supporting detail. Another example of Caesar's demonstrating this explicit awareness of the multiple meanings carried by text is when he ran his hand under the chunk "for an edge" on the video while saying "All athletes are using drug enhancement to increase their ability." This relationship between pointing over specific chunks of text while making semantically related connections is not accompanied by many kinds of awkward beats, or confused movement of the hands accompanied by unsure moments in speech (i.e., false starts on words; repeated words), which is more prominent (to different degrees) in the data from Larry and Sally.

One of the final stages of the process, which is a step that is missing from Case Larry (he simply did not turn it in), is the set of Self-Evaluation Questions, which we have adjusted, and are still working on to find the best combination of questions; however, one of the main purposes of this step is to raise awareness of ways that readers are *pointed to* different interpretations through subtle differences in what is emphasized. Caesar demonstrates this awareness by

mentioning a list of transition words that could have accompanied an Act of Pointing in his video, but he is not specific about which gesture; some students are more specific and explain more at this step, but for these three Cases, we only have the Self-Evaluation step for Case Caesar and Case Sally. Two other notable comments Caesar made on his Self-Evaluation were noticing that two of his Supporting Details were stronger than a third, and the final comment about what he would do differently is a bit disheartening. Caesar said he would memorize the lines and talk more slowly, both of which are obvious non-issues for his presentation, which as mentioned, was really smooth. But as this was his first semester at college, as with many students, he was still learning how to learn, beyond the myth that learning is the memorization and regurgitation of facts and figures (Pacello, 2014).

For his summary, this was his first draft, containing the types of errors we see often with these students in developmental courses (Dikli & Bleyle, 2014) (e.g., subject-verb agreement; third person singular "s" missing). However, the main words and themes that Caesar has repeated on the final summary and response are prominent through all phases of the activity. For example, the metaphor "looking for an edge" becomes a salient theme. This is a metaphor that is emphasized in his final summary and response, and this "looking for an edge" metaphor is present in every stage of the entire process.

Overall, with Caesar, we can observe a relatively ideal example of following the process, putting together the resources of Speech, the Visual, and the Act of Pointing in a well-designed manner lacking any visible tensions. Most striking about his overall video presentation was the high level of general cohesion and competence in designing and developing a model summary and response.

Case Larry

Overall, Case Larry presents some striking contrasts with Case Caesar, Case Sally, and many of the other participants, because he was one of the early innovators across the courses who held the camera and filmed himself giving the presentation. Consequently, he was positioned in a very different manner than any of the other participants (see Photo Four). His presentation also varied because he presented too much of the original text from the editorial in the prewriting draft, and he skipped the self-evaluation phase. Overall, Larry represents some of the issues we encounter when students stubbornly resist moving from the original text into

creating summarized writing using their own words. However, by the time he reached the final written summary and response as the outcome, he finally transformed all the language he had produced in earlier phases into a mixture of copied text as quoted text and original language of his own.

Case Larry chose an editorial about the controversies surrounding the organization that regulates college basketball and other college sports in the U.S., the NCAA (National Collegiate Athletic Association) (see http://www.nytimes.com/2013/11/13/opinion/fairness-for-college-athletes.html.) As mentioned, Larry demonstrated a willingness to take chances and innovate with the directions and language, which is something we encourage in these courses. For the first step, rather than simply answering the guide questions "What is the topic? and What does the Author want you to know?" by listing supporting details, Larry produced a brief draft of a summary and a response, along with answering the guide questions. However, one major problem that Larry illustrates is the tendency of many students to copy main idea statements directly from the text they are summarizing. The directions for creating the main idea and listing supporting details is intended to prompt the use of quoted text for supporting details and the use of original language for main idea statements. In these first stages, he used copied text for his main idea statement, which can be seen on his visual.

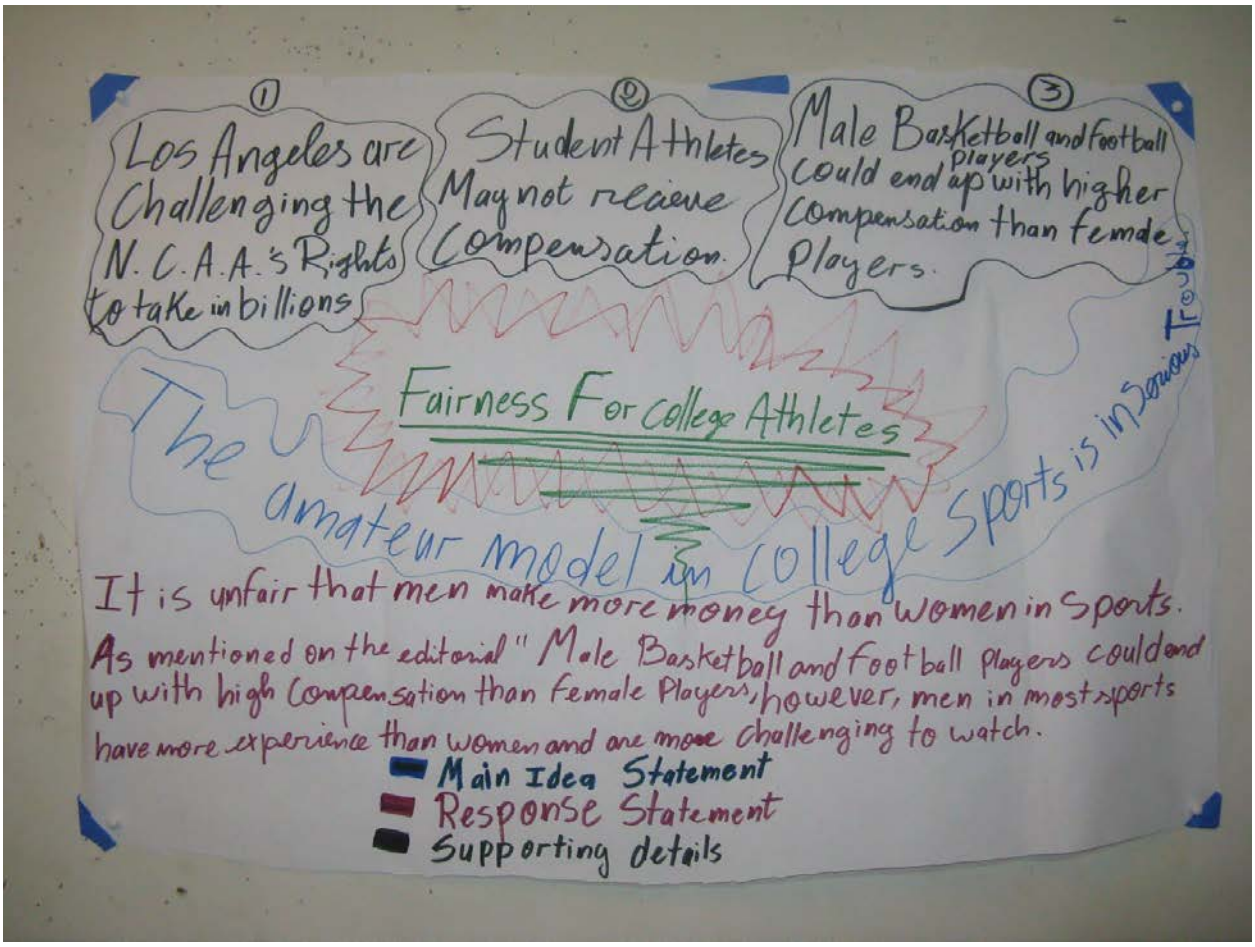


Figure Three: Larry's Graphic Organizer

The first line of the New York Times editorial is exactly the same as that displayed on the graphic organizers. Moreover, the entire graphic organizer is made up of text copied word-for-word from the article, with a mixture of copied text and original text mixed together in the two response statements on the bottom of the graphic organizer. In his response statement on the graphic, Larry states that:

> It is unfair that men make more money than women in sports. As mentioned on the editorial "Male basketball players could end up with high compensation than female players, however, men in most sports have more experience than women and are more challenging to watch.

Several issues are evident in this response section that we have found to be relatively common problems with many incoming students from the States and abroad. They often mix together quoted text and original text, as in the above, and are still learning to use quotation marks. Larry mixes in his personal opinion, which is a requirement of the response; however, the

way he finishes the quote on the graphic organizer and in the short two paragraphs above is misleading because of the lack of a closing quote. However, by the time he reaches the formal response, this becomes as follows:

> College athletes are so desperate to get in a team and associations such as The N.C.A.A. take full advantage of that fact as stated on the article "the N.C.A.A.'s right to take in billions while players get nothing." Money could be a great motivation to athletes. I believe that college players should get at least a minimum pay from the incomes; that way players will strive to get better and work even harder toward their goals. Women also should get paid as much as men because associations and organization still make so much money from their games with all the commercials and tickets.

Before Larry got to this stage in his development of the summary and response, he articulated related ideas on the video and watched the video immediately before and during the writing of this response in class. The improvement in the response is evident.

As mentioned earlier, Larry positions himself differently by standing and holding the camera and 24 inch pointer in his hand as illustrated in Photo Four:

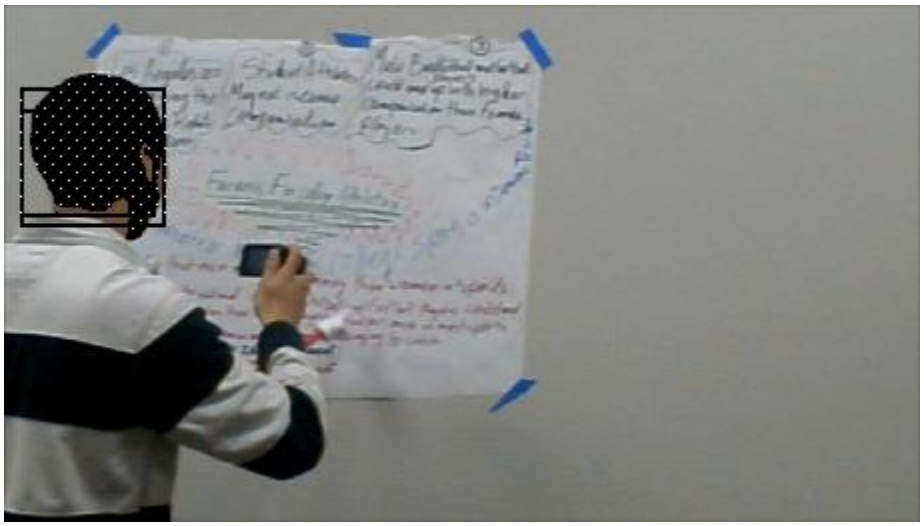


Photo Four: Case Larry with the Camera in his right hand and the pointer in his left

With Case Larry, compared to Case Caesar, Larry's movements with the Act of Pointing were noticeably less paced and not as smooth, with his video dominated by many more beats expressed by the pointer in his hand than Case Caesar. *Tension* (see Wertsch, 1998) is a term that might be useful here is to describe these moments in the data where

Speech, the Visual, and the Act of Pointing may not be particularly smooth. An example of this is expressed by Larry as he is reading his main idea statement, colored in blue on the visual, and curving in an arc from left to right. Larry stumbles a bit in his speech as the camera swings across his main idea statement, and he omits the word "serious" in the final phrase. As he continues to the first supporting detail, the tension decreases as he explains the relationship between the first supporting detail and the main idea, and he begins to become more effective in his pointing with the camera and the pointer simultaneously. Larry also presents strong links between his supporting details and the main ideas, such as with his first supporting detail in which he explains to the audience that the NCAA is making money while the players do not, which leads to his next supporting detail.

When Larry begins on the second supporting detail, he again illustrates his growing competence in putting together Speech, the Visual, and the Act of Pointing. He goes back and forth between the bubbles on the graphic organizer marked one and two, and explains that Bubble Two is redundant. He is demonstrating effective awareness of how different supporting details are similar and different due to the differences in who is making money and who is not, for example, the players versus the NCAA. As can be followed in the transcript and seen in the video, he visibly swirls the pointer over the areas of the graphic organizer that he thinks are relevant, like when Larry says, "here, how much," and circles the pointer over the chunk, "in billions," and then goes over and waves the pointer back and forth over the word "compensation" when he is producing the speech: "and here they don't make money." Also, it is noticeable that he returns to the preposition phrase "in serious trouble," to remind the audience of the major theme, which is located all the way to the right on his graphic (recall that this is copied text; not quoted). Another moment in the data when the pointing is shaped into back and forth beats is when Larry reads his third supporting detail and fails to say the word "players," which is a correction on the visual. The pointer moves back and forth in quick moves as he makes the correction and says, "Players, I'm sorry."

The bubble that expresses the differences between female and male salaries is one of many places where Larry is demonstrating a high level of competence in explaining the relationship of this supporting detail to the main idea; he is also telling the audience that this is a "minor supporting detail," thus demonstrating awareness of the levels of rhetorical

strength. When he finishes this bubble, he again returns his pointer over the prepositional phrase "in serious trouble" on the right edge of the visual and says "it could be a problem for them oof--of not making enough," and makes a sharp twisting motion (i.e., a beat) of emphasis before moving out of the screen as he shifts to reading his response (see the video at approximately 1:50). Larry completes his video by reading his response statement, yet stopping and fumbling when he makes a strange statement that men play more "aggressively" and have more "experience" than women; both of these ideas disappear from his final written response.

As presented earlier, Larry's formal response is quite improved over what he presented on the video, and he chose a strong supporting quote to use from all the quoted material he had on his graphic organizer. He also chose a quote for his final summary that was not mentioned anywhere on his previous work, and the quote was related to the supporting detail concerning women athletes receiving less compensation than men (see http://transitional-literacy.org/?page_id=9969 password rabbit14).

Over the years, moving students who are fresh from school systems in the States and abroad to distinguish between their own and others' words has been a challenge, as demonstrated by Case Larry. He basically has too much original language from the article, but for him, perhaps this was a necessary step to develop his own language for the final written summary, which for this group was an in-class writing activity. Larry innovated with the way he positions himself as camera-person, using the camera to point, in addition to using the 24 inch pointers with a white-closed hand with a pointed index finger. Larry also created a very dynamic visual with different colors and numbers mediating sequence, topic, and purpose. From the data, Larry demonstrates both a high level of competence of design and a high level of ability to evaluate and use strong evidence to support his main idea.

Case Sally: Adjusting the Video Activity for Writing

Case Sally, as mentioned in the Procedure section of the paper, represents a variation of the summary and response activity, with the digital video activity adjusted to a five-paragraph essay outcome from a prompt the student selected from a State website. Sally chose the prompt: "Should sex education be taught in public schools?"

As with the Summary and Response activities, the lesson begins with a prewriting activity to prompt students to brainstorm words and phrases on an outline template (see http://transitional-literacy.org/?page_id=9969 password rabbit14 for the outline-template and a

variety of downloadable documents, which are always up for revisions). Usually we encourage students not to be concerned about the Hook or Thesis statement parts at the top of the outline until they move to writing the essay. As with all the courses at the moment, students in the writing course do two videos, the first one with text arranged similar to the outline, and the second video with the text arranged in a graphic organizer of the students' own design. Sally designed a unique mix of a concept map, a tree diagram, and although she did not number the bubbles as Larry did, she did draw arrows from one to the other demonstrating knowledge of major and minor supporting details, and how information might be sequenced in a flow diagram (see Figure Four).

As with the other Cases, Sally engaged in revision and development of ideas at each step until the final outcome. For Sally's graphic organizer, the overall divisions of the chunks of text reflect the hierarchical structure of the outline, with the three bubbles across the top listing three topic chunks, with more specific supporting details expressed by the bubbles below. However, minor changes did occur in phrasing; for example, Sally adds the noun "knowledge" in front of the verb "provided" on the middle bubble, which represents paragraph two. The order also changes for paragraph two as "helps make parents to make it easier to start talking about" is revised to "makes communication easier." These are just a few examples of how making each step in the writing process more explicit for the students makes them much more aware of the possibilities for revision, which supporting details are more important than others, and how overall design expresses the hierarchy of ideas. All of these important parts of the competence of design are coming together with Case Sally. This revision and expansion of ideas continues when she moves to the video recording.

Sally made her video before we began to use pointers. Because many students such as Sally had difficulty staying out of the camera frame while she used a marker as a pointer, the process was updated so that students now use 24-inch pointers. This has made it easier for the students to remain at a distance from the chunks of text on the Visual and out of the camera frame as they point. As with Larry, Sally exhibits many moments in the data where beats are prominent, with lots of expressive swirling and the highlighting of different areas by pointing. One of the obvious differences at the very beginning was her inability to physically touch different parts of the visual at times because she had been asked to stand out of the camera frame. However, she still produces beats as she waves at different parts, at first not as close to

the visual as Caesar and Larry; however, this changes as the camera person seems to coordinate more with Sally and Sally touches the Visual in different places with the marker, usually on syllables. Also, as with Larry, she innovates by using a sheet of paper that can be seen popping up, held in her right hand 13 seconds into her presentation (see Photo Five).

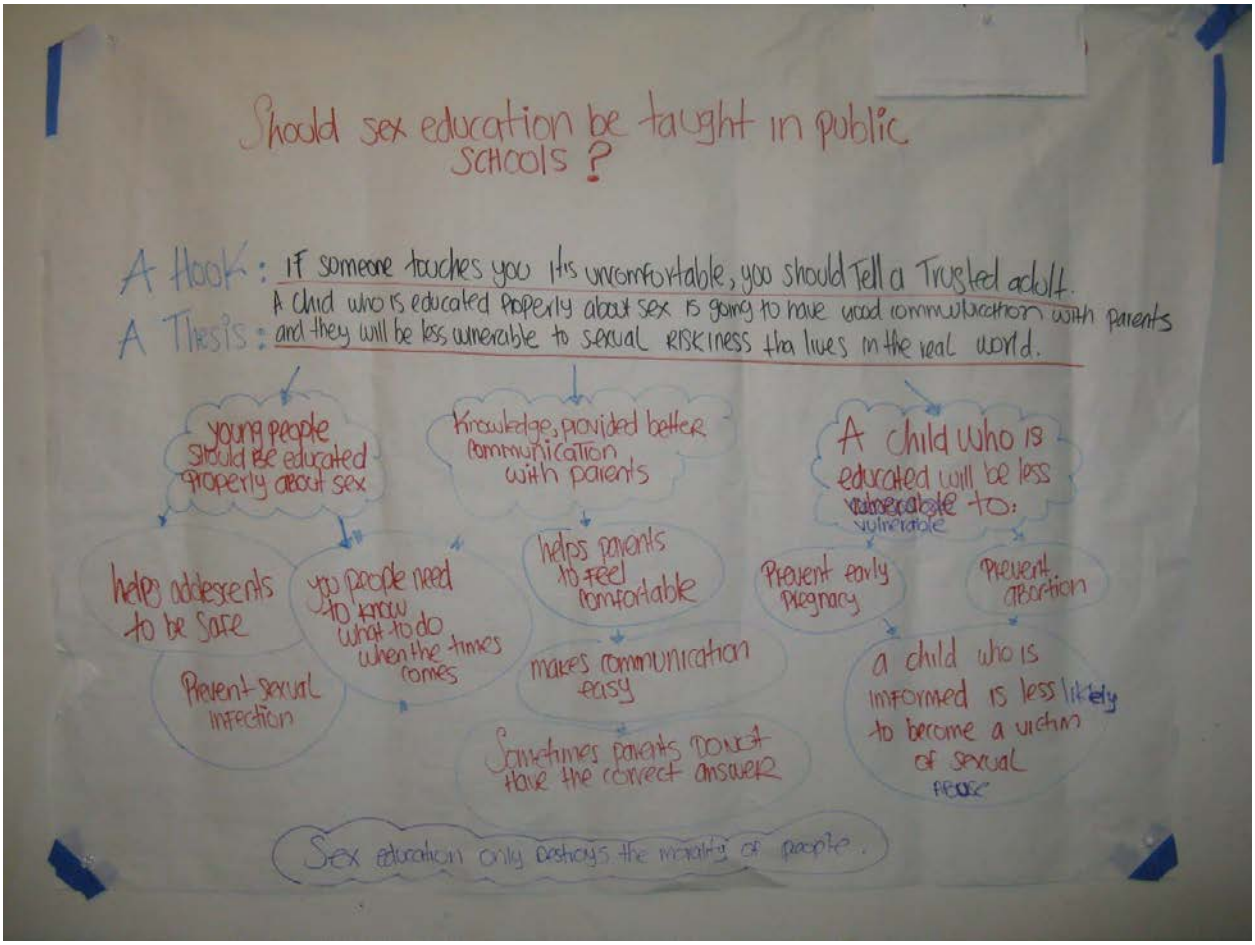


Figure Four: Sally's Graphic Organizer

Even though Sally brings parts of an initial draft of her essay with some scrawled notes as a resource, it does not physically appear in the video after this point. It is difficult to determine how much she refers to this during her presentation because students work in groups of three or four in different parts of the room where they are not monitored closely. When we see them using notes, we discourage this because we want them to be comfortable working with their visuals alone. However, in recent iterations, we have had students use notes, but keep the notes off screen (we have reminded them that this is what announcers do on TV). Also, we have been prompting students to notice the differences in tone and rhythm when they read from notes.

Nonetheless, compared to Caesar and Larry, Sally expresses more beats and more waves of her hands around different areas of the visual.

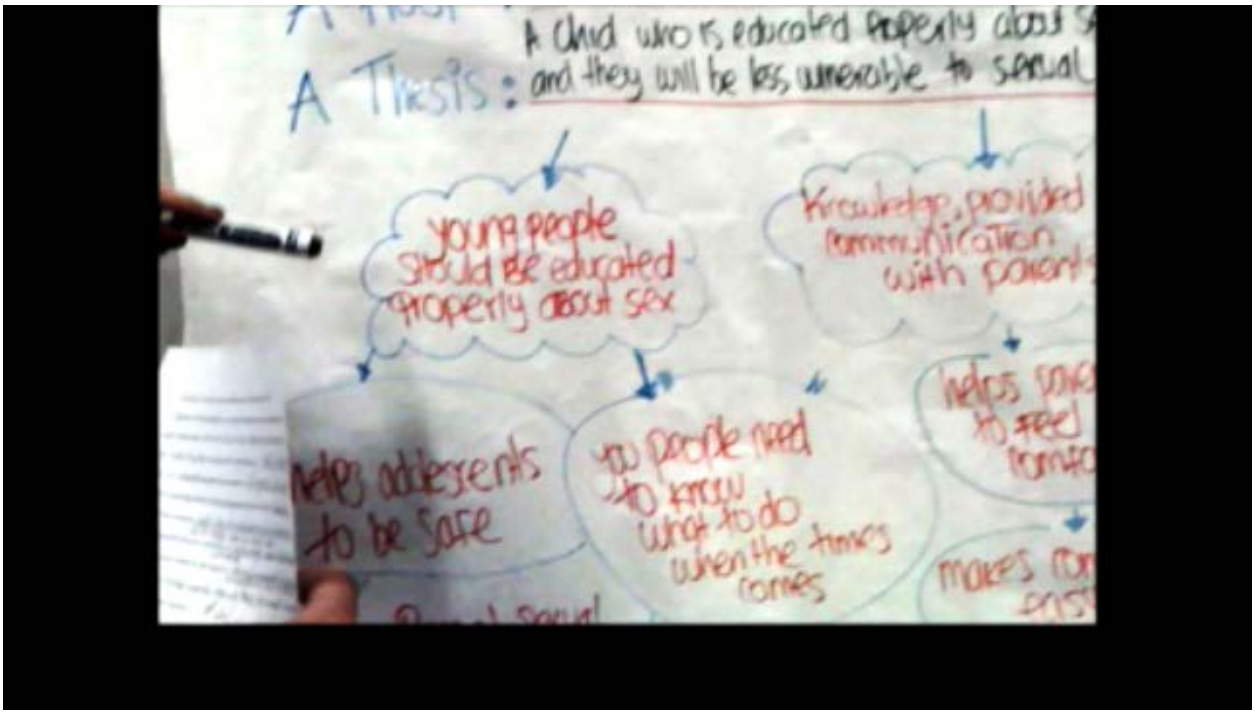


Photo Five: Sally bringing another resource into the camera frame

Several of these beats are prominent. At approximately 38 seconds into the visual, when Sally is trying to find the right words to express the idea that young people should "know what to do when the time comes," her hand flips up holds in the air for a moment, and produced beats in the air as she says: "When they want to have-- to to To have sex." She continues this pattern of lots of expressive pointing while explaining her ideas in the next section. The prominence of beats and expressive pointing is reflected in this section of transcript (recall that the entire transcript is posted on the webpage as well as the video):

> My other supporting detail
>
> *Sally's hand and marker pen move to the next bubble to the right, which has the chunk "Knowledge provided better communication with parents." When she says "My other supporting detail" her marker pen touches the bubble to the left of "communication"*
>
> Is--Is if you have knowledge

On "if" she raises the marker pen; then lowers it, landing right on the page on the word "knowledge"
You're gonna provide better communication
As she says the above phrase, she is circling her pen over the chunk "communication with parents"

With your parents
The pen and hand move out of the frame

Ah
The hand comes back in pointing at the same bubble
That helps parent to feel more comfortable
She touches the bubble next to the chunk "helps" then raises on "to feel" then touches the visual firmly next to the word "comfortable" on the visual as she says "more comfortable"

And makes easy communication
She just briefly points to this phrase in the bubble on the visual

This section of discourse is characteristic of how Case Sally is much more expressive with her pointing and waving her marker as an extension of her index finger over many different chunks on the visual than Caesar and Larry. She offers very solid explanations and expansions of the chunks on the visual into coherent sentences and ideas to include in her final essay later on. Regardless of whether she refers to her notes or not, overall, she demonstrates a high level of competence in evaluating and explaining evidence.

As we move from Sally's video presentation to her Self-Evaluation Document, we see an additional awareness of transitions more than anything else. Besides the extensive listing of transitions, she did not really perceive many flaws in her thesis statement or any other parts of her essay; however, when we move to the draft of her essay, we find many areas where the chunks she had on her original document that carried through on her visual and on her video, appeared again in the final essay. Among those ideas that are expressed in her thesis statement

are the idea of good communication with parents about sex, and that information provided through schools will make young people "less vulnerable." These ideas are present in the thesis statement on the visual, but are presented differently in the essay so that she could respond more directly to the essay prompt of "Should sex education be taught in public schools?" Sally does this with the addition of "It is important to" added to the basic question. The resulting thesis statement on her essay draft is a bit more awkward as a result, but is more directly linked to the prompt: "It is important to talk about sex in public schools because a child who is educated properly about sex is going to have good communication with their parents. They will also be less vulnerable." Overall, Sally exhibits a high level of competence and reduced levels of tension with the formal language structures and putting together strong supporting details with comprehensive main idea statements and strong thesis statements.

Conclusions

Returning to the main purposes of the ongoing research and the three cases presented here, with this paper we have moved closer to a relatively stable set of directions that can be adjusted to fit instructional objectives across a number of content areas and language learning contexts, specifically with regard to summarizing and responding to text, the brainstorming and prewriting stages of the writing process, and understanding the strength of the abstract relationships of supporting details to main ideas and thesis statements. Through these digital video activities, we have provided several accessible reference areas in the data that can be understood to comprise a unit of analysis we are calling a "chunk," which goes beyond the level of "word" suggested by Vygotsky (1978; 1986), and moves more in the direction of utterance and tensions between participants and the semiotic resources (see Bakhtin, 1986; Wertsch, 1998) that they are using to produce "chunks" of language that eventually become formal written outcomes. Moreover, the framework and units of analyses proposed in this paper can be accessed by all stakeholders, who then can adapt the language and literacy activities as desired. For this paper, we conclude with a model, which brings us back to Figure Two, presented earlier, and our third research question:

> 3. What kind of model can be developed to illustrate the complex nature of language and literacy learning to inform a wide range of stakeholders, including the surrounding community, administrators, students, teachers, and researchers?

As a conclusion, and in response to this question, we refer again to Figure Two, copied again here for easier referencing.

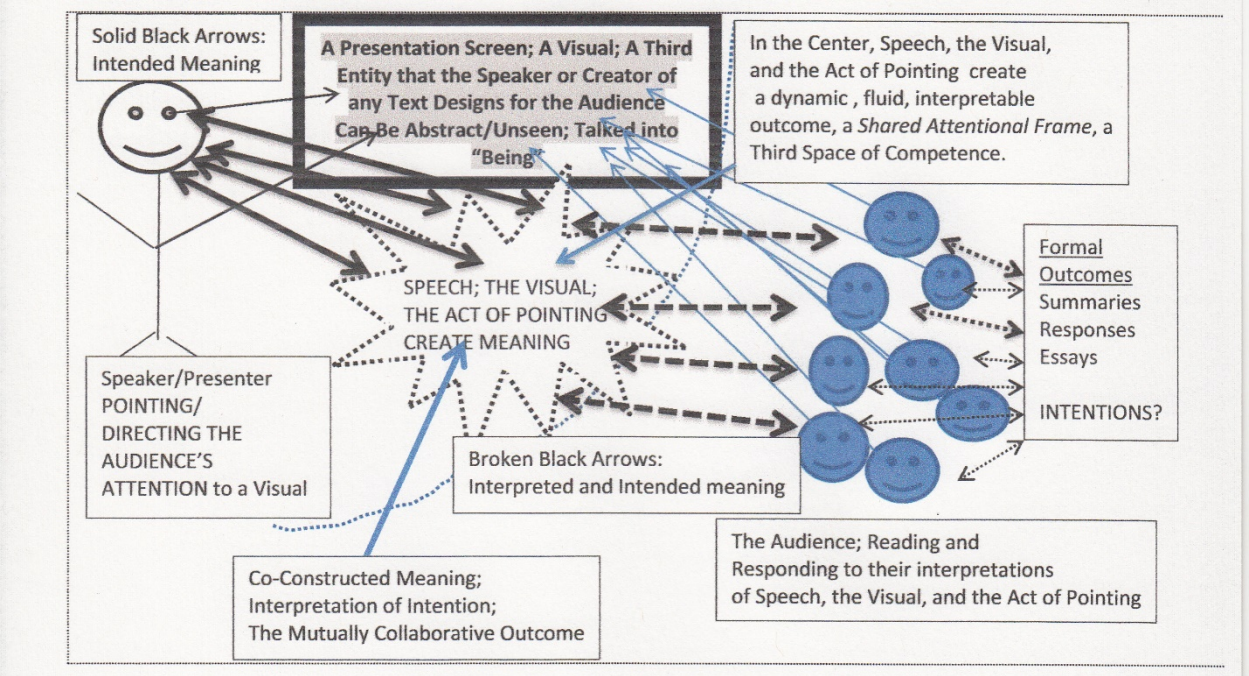


Figure Two: Model of a Joint Attentional Frame:

As we look back over Case Caesar, Larry, and Sally, we can see how different stages in the developmental process leading to the final outcomes involves a continuous process of working out information in an area, a kind of local third space, very different, but echoing some of the characteristics of a third space proposed by Gutiérrez (2008), yet grounded in ideas from Tomasello (2003). A third space of intention-reading is established during these digital video recordings and other similarly arranged interactions. These interactions create an intersubjective area of intention-reading that develops as participants play with language and meaning by putting together Speech, a Visual, and the Act of Pointing, always involving some type of concrete or abstract third entity. Assessment can revolve around understanding how tensions in communication develop with participants during intention-reading events, and how these tensions are resolved. As can be seen "right before one's eyes" (Vygotsky, 1978, p. 61) in the video data, Caesar, Larry, and Sally enacted literacy as design by positioning Speech, the chunks of language on the Visuals, and the Act of Pointing to produce language for an audience that dialogically reads intentions to build that collaborative third space represented by the star in the middle of Figure Two. Participants are repositioned as audience when they focus again on this third space by reviewing their videos and becoming more aware of the tensions that existed in

creating meaning during the interaction; participants are reading their intentions and understanding what comes through from developing ideas to delivering them to others. Finally, each participant worked to resolve these tensions to produce a final outcome. Throughout this process, original themes become intended meaning, intended main ideas and thesis statements, which are refined and expressed in final written outcomes.

As a conclusion to this paper, we are proposing an assessment model of process and design with Figure Two as a beginning. As alluded to earlier, two units of analyses are available that express the Vygotskian (1978) idea that a unit of analysis should not be in isolation, but should encompass and express as much of the whole phenomenon as possible. Paraphrasing ideas from Wretch (1998), we are proposing two related units of analysis represented by Figure Two: 1) "Chunks" of 3 to 9 related words, both formulaic and non-formulaic, and 2) Tensions participants' express among Speech, the Visual, and the Act of Pointing as these are transformed into semiotic resources that express meaning. These tensions are represented by observable levels of fluidity in communication as participants weave together Speech, the Visual, and the Act of Pointing, and how original intentions, such as main ideas and thesis statements, expressed first in prewriting, are interpreted by the audience and carried through in final outcomes. Ultimately, we are assessing the ability of participants to create idealized Joint Attentional Frames. Although much needs to be done with creating rubrics flexible for different contexts, the data, and the model presented here, provide a practical beginning.

Limitations

Several limitations need to be considered for this paper. Most prominent is that the cases have limited generalizability. Objectivity, although promoted, is in reality, impossible; we are presenting our interpretations through a specific theoretical lens. However, we have made efforts to push back against the bias we create as opposed to value-free knowledge by providing full access to the data. We invite readers to become participants in our interpretations and present as clear a path as possible from the beginnings of the data all through Method, Procedures, Results, Discussion, and Conclusion.

Avenues for Further Research

Many avenues for further research are available for this type of comprehensive longitudinal data of student writing and other types of language production over a semester. Developing more corpus approaches to the data offers many opportunities to quantify learning of different grammatical forms and investigate learner trends with language over one or more semesters (see Li, Cadierno, , & Eskildsen, 2014; Park, 2012). Also, ethnographic, action-oriented, semiotic and ecological approaches to classroom research, supported by digital video cameras and other digital resources, offer many different options for unpacking what learners and teachers are actually doing with language and materials in classrooms (see Guerrettaz & Johnston, 2013; see also Leander & Rowe, 2006). Finally, many different options are presented by this paper for using action-based research to track implementation of digital resources and new ways of reading and writing in the 21st Century. Most important, many options exist to break down academic borders and become less isolated from one another and all the stakeholders that we serve.

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