TEACHING VISUAL LITERACY IN THE SECONDARY ENGLISH/LANGUAGE ARTS CLASSROOM: AN EXPLORATION OF TEACHERS' ATTITUDES, UNDERSTANDING AND APPLICATION

by

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B.A., Southwestern College, 1970
M.A., Pittsburg State University, 1973

AN ABSTRACT OF A DISSERTATION

submitted in partial fulfillment of the requirements for the degree

DOCTOR OF PHILOSOPHY

Department of Curriculum and Instruction
College of Education

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Abstract

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Based on the information from the responses to the survey, secondary English/language arts teachers in central Kansas have received little formal training in teaching visual literacy and that their informal training consists mainly of discussions with colleagues and independent study. Because they have received little training, most respondents see teaching visual literacy as secondary to teaching traditional literacy rather than as an integral part of such instruction. The state of Kansas has several standards relating to teaching non-print text. Yet, the emphasis on state and national tests is on print text. As a result, secondary English/language teachers surveyed know little about what it means to teach visual literacy. Training in how to incorporate visual literacy instruction with traditional literacy instruction, how to set outcomes for visual literacy and how to assess those outcomes are necessary if standards related to non-print text are to be addressed in secondary English/language arts classes across the state. While English/language arts pursue training in visual literacy on their own, teachers-preparatory institutions and public

school systems also have a responsibility to see that English/language arts teachers know how to help their students become literate, not only in traditional literacies but also in non-traditional literacies such as visual literacy.

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CHAPTER 1 - Introduction

Baby Boomers entering the teaching profession in the 1970s were part of the last generation to remember a time before television, computers, and the assorted digital media common to households today (Simmons, 2006). When they were born, in the years immediately following World War II, still cameras and radios were the only non-print media available to the general public. Their parents likely purchased the family's first television when they were pre-schoolers. During elementary school, it was considered a treat when they were allowed to watch television in the classroom for special events such as the launch of the first manned space flight or the inauguration of President Kennedy. In high school, they heard about calculators that would replace their slide rules and word processors that would make their Smith Coronas obsolete. But never did they dream that they would one day actually own a personal computer.

When they arrived on college campuses, they were presented with enrollment cards that had been punched and sorted with a device that looked like a knitting needle in preparation for the time when the newly-purchased computer, which filled the basement of the administration building, would categorize and sort information for the registrar's office. In graduate school, microfiche and microfilm were the high-tech devices they used for conducting research. As they entered the teaching profession, the possibilities of computer technology beyond its use in word processing were just beginning to become apparent. The amazed educators of that group of early Boomers, who had known a world before cable and the Internet, first heard, in the late 1960s, the term "visual literacy." By the early 1970s, as it was becoming increasingly clear that the "TV" generation depended more on visual images than reading for information, it also became increasingly clear that teaching traditional literacy alone was not enough (Williams, 1993).

Despite the use of the term "visual literacy," educators were never able to come up with a satisfactory definition, choosing rather to leave the concept in that mystical, mythical realm that encompassed their views of the exciting possibilities of technology.

Their awe was not without basis. Not since the invention of the moveable type printing press have humans seen such an increase in the availability of information, both verbal and visual, as in the last century (Davis, Pollard & Smith, 1999). Now, like the writers of the Renaissance, students in the 21st century step with uncertainty onto a new plain. In this electronic age, when individuals have laser printers, scanners, digital still and motion cameras, access to the Internet, and editing programs that allow them to manipulate both text and image, the ability to create meaning in multiple media becomes commonplace. Just as reading moved from a rarity to customary after the printing press began to provide easily accessible reading material, so too has technology brought the ability to fuse the verbal and the visual into the homes of people throughout the world (McLuhan, 1964). Taking advantage of the possibilities of writing with both text and image, people may soon incorporate imagery as a standard feature. Helping students extend their understanding of the messages behind both the images and the text of documents will be the goal of the teacher of this new type of literacy.

Yet, in the first decade of this new millennium, researchers are still trying to make sense of how visual literacy fits together with the traditional literacies taught in schools for hundreds of years. Even though educators, not part of a generation who had experienced both the before and after of visual technologies, have come into the profession since the 1970s, in the thirty plus years since the term "visual literacy" was first used, it has still not been well defined. Nor has the connection between visual and traditional literacies been adequately studied. The lack of research in visual literacy may result from the nature of vision itself. Because the act of seeing is

an early-developed and natural means of understanding the world, people frequently do not look beyond the surface to understand visual images. Research has indicated that human infants less than six months old can recognize the meaning of facial expressions (Charlesworth & Keutzer in Ekman, 2006). With the innate ability that humans have to interpret visual cues, some may feel that it is unnecessary to help students "read" and present visual information. Yet, the ability that humans are born with to interpret some visual cues does not necessarily reach into the more subtle types of expression that visual images can afford (Braden & Hortin, 1982). Therefore, instructing students how visual images convey information is necessary for those students to develop the critical thinking skills called for in modern society. In addition, understanding the relationship among visual, verbal, and alphabetic language allows students to comprehend and express ideas more fully and makes them more comfortable moving from one form of communication to the other.

In traditional teacher education programs, the discipline specific courses that prospective English/language arts teachers take are generally one course in advanced composition, one in advanced grammar, and the remainder in British, American, and world literature. Since most English/language arts teachers are still instructed in almost exclusively in literature and language, not in how visual information can be incorporated with literature, they do not have the background knowledge to help their students sift through the volumes of visual images that bombard them daily. While English/language arts teachers are familiar with traditional literacy--comprehending and creating alphabetic text--they have less practice with visual literacy--comprehending and creating visual text. As a result, the English/language arts teacher may wish to leave instruction in visual literacy to the visual arts teacher. Yet, the visual arts teacher has little background in literacy, particularly as it pertains to rhetoric—the ways in which a message

is conveyed or created so that it will bring meaning to a particular audience. Therefore, the visual arts teacher may feel inadequate to help students understand how images fit into the paradigm of rhetor, audience and text because most visual arts teachers' training has been largely in aesthetics rather than rhetoric.

Trying to address the problem becomes even more difficult on the secondary level than on the elementary level. Although young children learn innately through visual messages, by the time students are in high school, they have been conditioned to rely more on verbal message, both auditory and alphabetic, rather than on visual message for information (Callan, 1996). In addition, realizing the stake both language arts and visual arts have in visual literacy instruction, an interdisciplinary approach is obviously called for. Yet, the elementary teacher has the advantage of being able to incorporate and integrate visual with verbal and alphabetic literacy instruction that the secondary teachers does not have. Because of the separation of disciplines above the elementary level, however, secondary teachers have fewer opportunities for the collaboration necessary to blend students' understanding of the power of visual images to communicate (Locke, 2007).

In addition, the current method of licensing teachers in specific subject areas on the secondary level is not conducive to encouraging integration of visual, verbal, and alphabetic literacy instruction. The need for change in the structure of secondary classrooms and the current certification system raises the question of what form a classroom should take that teaches not two, but six or eight, language arts. Merely using non-print materials in the classroom is not enough to satisfy proper development in visual literacy. Students must understand the message of visual images and be able to select visual images that communicate their purpose to their selected audience in order to enhance their learning and develop the types of literacy demanded

of people living in the 21st century. In order to teach visual literacy, however, teachers must first understand the meaning of the term.

Overview of the Issue

For the past several decades, visual images have gained in importance so that "[b]y the mid-1980s the notion that images are more potent than words and that, given a lack of congruence between visual and verbal information, the visual will win out had been repeated often enough to become accepted wisdom" (Griffin & Schwartz in Flood, Heath & Lapp, 1997, p. 40). The visual literacy movement, according to Avgerinou & Ericson (1997), has captured educators' interest in recent years because its emphasis on using visuals for communication, thinking, learning and forming creative expression fits well with the most prevalent learning mode of most student in public schools today. Yet, "opposition to the visual media in situations where they form an alternative to writing…[may] be seen as a potential threat to the present dominance of verbal literacy among elite groups" (Kress & van Leeuwen, 1996. p. 16). Especially above the elementary level, some educators see the addition of visuals to learning materials as "dumbing down" academic content. They are not yet willing to recognize the shift that is taking place in what it means to be literate. While being able to sign one's name was once enough for a person to be considered literate, now people must be able to comprehend and create messages in multiple modes in order to function productively in modern society (Vincent, 2000).

The trends in education and research that consider visual approaches to learning have implications in technology and distance learning education as well. Developing educational materials for computers and the Internet are only part of the reason that education has become increasingly interested in the concept of visual literacy. The movement to a more global society has also increased interest in visual literacy because "International trade puts a premium on any

method of communication which can reduce dependence on expensive and sometimes confusing translations of the written word" (Morgan & Welton, 1992, p. 3). Although print media at one time used only traditional literacy, with newspapers and textbooks relying solely on text to convey their messages, now they employ visuals of various kinds to enhance readers' understanding of the text. With today's technology, visual literacy has taken an even more prominent role in communication. The power and immediacy of visual images using modern media and technology became apparent in the Abu Ghraib prison scandal. According to Zarek (2006), it was the visual images taken by the actual participants and sent to media sources within days of the event that led to an outrage not felt in the past when similar situations were reported through text alone. As a result of the availability and rhetorical effectiveness of such visual images, teachers can no longer be content with teaching only traditional literacy. Instructing students on the secondary level in visual literacy has become a vital part of English/language arts instruction because of the increasing power of visual media and technology.

Unfortunately, for some teachers, using technology means they must assume the role of teacher-as-learner. Since some teachers have not been trained nor taken it upon themselves to develop technical skills at a higher level than their students, teachers must sometimes be willing to give up control to allow students to take charge of certain technical aspects of the classroom and to use technology in which the teacher may not have any expertise. Part of the problem in many teachers' reluctance to use technology or to allow their students to use technology is the traditional structure of secondary education in the United States over the past centuries. Allowing students to present information in a form other than a traditional essay format is foreign to and goes against the grain of their understanding of literacy for many secondary English/language arts teachers. Since education in the past has given preference to verbally/ linguistically and

mathematically/ logically talented people, most teachers are not as strong in the other six intelligences—bodily/kinesthetic, musical, spatial, interpersonal, intrapersonal, and natural (pertaining to nature)—described by Gardner (1983) as the students that they serve. Learning to accept their weaknesses may be difficult for those who have been considered academically gifted all of their lives because of their ability to handle alphabetic text. Despite the difficulty some may have in incorporating non-verbal teaching methods, English language arts teachers have much to gain by including other forms of communication in their classrooms and even more to lose if they fail to do so.

Modern society, with its increased reliance on literacy enhanced by technology no longer gives English/ language arts teachers the luxury of teaching only reading and writing. As was true of the Renaissance man (or woman), English/language arts teachers in the Information Age must have an understanding of a wide range of concepts and issues. The role of the English/ language arts teacher may now be more closely related to the mission of the liberal arts than to the strict mission of teaching traditional literacy. To enhance the learning of the greatest number of students, English/language arts teachers must include instruction in visual literacy in part because of the large numbers of individuals who show a preference for visual modes of learning. While most teachers recognize the visual orientation of many of their students and, thus, accept the need for instruction using visual modes of learning, many do not fully understand the theoretical basis of critical thinking using visual modes of learning.

Growing out of visual literacy theorists' use of metaphors related to verbal learning to describe visual learning, the National Council of Teachers of English (NCTE) and the International Reading Association (IRA) recognized in 1996 the need for English/language arts teachers to teach not two or four areas of literacy, but six, three receptive and three expressive.

The chart below illustrates those areas of instruction in English/language arts determined by NCTE and IRA (2007).

Figure 1:1 English/Language Arts Areas of Instruction

	Aural/Oral	**Alphabetic**	**Visual**
Receptive	Listening	Reading	Viewing
Expressive	Speaking	Writing	Presenting Visual Information

Like receptive alphabetic literacy (reading), receptive visual literacy (viewing) requires comprehension. Receptive alphabetic literacy uses the comprehending process, by which the reader decodes the symbols used in written language to make sense of the words, phrases, sentences, and ideas by relating the information to previous knowledge and building on existing schema. Similarly, understanding a visual image requires the viewer to decode the strokes, pixels, dots, and lines that make up the image to make sense of the objects in the image and their relationship to each other (Messaris, 1994). In expressive alphabetic literacy (writing), the writer uses the composing process to select the proper words, sentence structure, and arrangement to convey ideas or persuade an audience. Likewise, in expressive visual literacy, the one creating the image must choose the proper medium, color, line, and arrangement to convey ideas and influence the audience to the creator's point of view (Mitchell, 1994).

Students who are not strong alphabetic learners (reading and writing) can compensate for deficiencies in those areas by increasing their abilities in their areas of strength. Since an estimated 65% of the adult population in the United States are visual learners (Davis, Nur & Ruru, 1994), instruction in visual literacy would address the strengths of the greatest number of people. In addition to speaking to the preferred learning mode of the greatest number of people, instruction in visual literacy also has the advantage of being strongly related to aural and

alphabetic literacy. Both receptive aural literacy, being able to interpret what another is saying, and receptive alphabetic literacy, being able to interpret what one reads, have similarities to receptive visual literacy. Like the other two types of receptive literacy mentioned, receptive visual literacy consists of several components.

The first component, visual thinking, involves the ability to visualize, conceptualize, and use visual analogies. A better understanding of the analogous use of images can, of course, enhance the metaphoric use of language. Visual thinking helps visual learners to identify and solve problems. In mathematics, when the instructor advises students to draw a picture or diagram in order to better understand a word problem, the teacher is asking students to draw on their visual thinking abilities to interpret verbally, logically expressed concepts. Reading and writing instructors can also use students' visual thinking skills in the planning step of the writing process and the pre-reading stage of the comprehension process by using graphic organizers. Teachers who encourage the second component of visual literacy, visual learning, use visuals methods to help students grasp complex concepts. The final component of visual literacy, visual communication, looks at how visual images can be used to convey ideas. Visual communication has been connected with semiotics, the study of how signs and symbols possess the characteristics of language.

Because designing visual images and considering how document design affects the message of the text are element of expressive visual literacy, in order to design visual images, students must understand the basic elements and principles of visual design. They must be able to "read" and "write" using visual language. By gaining understanding of the elements of visual language, students can apply the concepts and theories to other types of communication as well. The idea of perspective in art can be used to help students identify the need for focus and

emphasis in their writing. Understanding the importance of placement of objects in the visual product can also transfer to organization of the written product. Color, texture, style, and point of view can also be used to illustrate parallel ideas in writing. Once students understand the elements of visual images, they can begin to see how similar elements appear in writing as well. This understanding can lead them to look for those elements in their reading and to attempt to reproduce them in their writing. When visual literacy and its relationship to aural and alphabetic literacy have been established, students are then able to tackle concepts behind aural, alphabetic, and visual rhetoric.

Visual rhetoric looks at the meaning of visual images and the power of visual media to influence beliefs, values, and behavior. By recognizing this power, students can begin to interpret and analyze visual communication (Kostelnick & Hassett, 2003). As students begin to recognize the nuances of meaning behind the written word, they come to understand the influence of visual images on beliefs and behaviors, allowing them to use images in a more powerful way as they produce visuals (Stroupe, 2000). Learning to produce effective visual images can enhance students' use of multi-media approaches, such as newsletters, reports, brochures, forms, and flyers. Becoming comfortable with multi-media applications of technology can also give students access to use of visual and traditional rhetoric in creating presentations, websites, and video production. The necessity of blending the visual and verbal is also apparent in more traditional displays such as posters, bulletin boards, and three-dimensional displays.

Statement of the Problem

While much of what we learn about our world comes through visual means, in education people still give precedence to verbal communication. Rather than visual images, English/

language arts teachers generally use verbal means to analyze, judge, and communicate. In fact, visual thinking and learning are often translated into verbal language in order to convey ideas to others in an understandable way because most people have received little instruction in decoding visual language. While pre-school and elementary-age children are encouraged to draw, soon after starting formal education, students find visual activities replaced by word and number exercises, which are highly ordered and conventionalized forms of expression compared to visual expression (Kress & van Leeuwen, 1996).

Yet, the absence of a single visual language may assist in the discovery process when students are encouraged to use visual means of thinking and expressing themselves. While images in the mind are difficult to externalize, this difficulty may allow students to be more creative in their expression (Tucker, 1995). Words and numbers are rigid and specific, but creative individuals can convey their inner visual concepts in diverse ways. Although no one would suggest that educators should ignore aural and alphabetic literacy, visual literacy may be taking on more importance as students gain access to media that allow those without innate artistic abilities to create visual images. Despite these possibilities, English/language arts teachers are reticent to instruct their students in the non-verbal skills in which they themselves have little training (Childers & Lowry, 2000). “A narrowly specialized training in particular academic disciplines must be regarded as, at best, a necessary but never sufficient cultural orientation for teachers working in schools …” (Richards in Buckingham, 1998, p. 137).

Although research has been done on educators’ use of teaching methods that address multiple intelligences, including visual/spatial intelligence, and on attitudes toward and use of media and information literacy, no studies have been done specifically on the attitudes of secondary English/language arts teachers toward being expected to instruct their students in

visual literacy, using visual learning modes. As mentioned previously, NCTE and IRA (1996) have recognized the need to teach visual literacy in the English/language arts classroom. In addition many states, including Kansas, have included visual literacy in their English/language arts standards and their standards for licensure in English/language arts. Despite the emphasis by national organizations and state agencies, most English/language arts teachers receive little or no training in how to teach visual literacy, with teacher training programs concentrating mainly on developing writing skills and studying literature (Childers, Hobson, & Mullin, 1998).

Purpose of the Study

Because researchers need to understand teachers' attitudes about their being expected to instruct their students in visual literacy before examining the effects of visual literacy instruction on students' skills in reading and writing, the researcher surveyed English/language arts teachers in central Kansas at the secondary-level about their attitudes toward professional and governmental mandates to teach visual literacy. In addition, the researcher asked those teachers about their knowledge of visual literacy and willingness to use visual instruction methods in their teaching and to instruct their students in how to view and present information visually. The purpose of the study was, then, to look at instruction in visual literacy in the English/language arts classrooms in central Kansas and how the state and professional standards regarding visual literacy are interpreted and used by practitioners. The study had the following goals:

1. to clarify Kansas secondary English/language arts teachers' attitudes toward teaching visual literacy,
2. to explore their understanding of the subject,
3. to determine their use of visual media,
4. to evaluate their training and preparation to teach visual literacy, and

5. to look at the types of instruction in visual literacy that students receive.

Definition of Terms

With these goals in mind, the first problem that the researcher faced was the multiplicity of definitions of "visual literacy." A definition of visual literacy was first offered by John Debes (1969), one of the most important figures in the history of the International Visual Literacy Association. Debes defined visual literacy as:

> …a group of vision-competencies a human being can develop by seeing and at the same time having and integrating other sensory experiences. The development of these competencies is fundamental to normal human learning. When developed, they enable a visually literate person to discriminate and interpret the visible actions, objects, symbols, natural or man-made, that he encounters in his environment. Through the creative use of these competencies, he is able to communicate with others. Through the appreciative use of these competencies, he is able to comprehend and enjoy the masterworks of visual communication. (27)

In an effort to simplify that definition and put it in more operable terms, the researcher reviewed a number of the accepted definitions. For the purpose of this study, the researcher has determined that the term "visual literacy" will be defined as "understanding and using visual images to think, learn and communicate." While media and information literacy are related to visual literacy, both media and information literacy can involve verbal and multiple literacies as well as strictly visual literacy. The following terms will also be used in this discuss in the predefined ways outlined below.

1. Alphabetic Literacy: the ability to understand communication using a written alphabet (read) and create expression using a written alphabet (write).

2. Aural Literacy: the ability to understand spoken language and create spoken expression.
3. Depiction: visual image that attempts to recreate a recognizable figure or scene.
4. Document Design: the way in which an author brings together text, depictions, icons, and typography to instruct, inform, or persuade an audience.
5. English/language arts: the discipline which provides instruction in the use of the English language, particularly reading and writing, but which may also extend to information presented orally or visually
6. Icon: stylized image that represents an idea or object
7. Information Literacy: The ability to access, evaluate, organize and present facts.
8. Instruction: the methods that teachers use to help their students develop various literacies and skills necessary to function in twenty-first century society
9. Media Literacy: the ability to understand and use many methods of communication including listening and speaking in various settings, reading and writing various types of text, viewing and creating various types of visuals, or using a combination of aural, visual, and alphabetic means to communicate.
10. Multiple Literacies: tools for reading the world; bodies of knowledge, skills, and social practices with which individuals understand, interpret, and use the symbol systems of culture (Kellner, 2002).
11. Secondary Classroom: an educational area for students assigned to grades 9-12 or freshmen, sophomores, juniors, and seniors in high school
12. Semiotics: The study of ways in which people express, represent, and communicate concepts.
13. Symbol: a depiction or icon also representing an abstract concept.

14. Training: preparation of teachers and prospective teachers
15. Typography: visual appearance of the letters of text.
16. Verbal Literacy: having both alphabetic and aural literacy; being able to listen, speak, read, and write.
17. Visual Instruction: using images to convey information to students.
18. Visual Literacy: the ability to understand and use visual images to think, learn and communicate.
    a. Visual Thinking: the ability to turn information into images to help understand, remember, and communicate the information (Wileman, 1993).
    b. Visual Learning: using graphics and other visual media to connect, group, organize, and understand information more clearly.
    c. Visual Communications: conveying thoughts and ideas by using visual media.
19. Visual Media: a form of communication, which conveys its message through images that are intended to be viewed. Visual media can be either two-dimensional stills (photographs and pictures), three-dimensional stills (architecture and some statuary), two-dimensional motion (film or video), or three-dimensional motion (some statuary and holographs).
20. Visual Rhetoric: the ability to appropriately analyze, critically evaluate, and effectively create messages within a visual format.

Significance of the Study

Since professional bodies such as the National Council for Accreditation of Teachers Education (NCATE), NCTE and IRA, as well as political bodies such as the Kansas State Department of Education, have identified the need to teach visual literacy in the

English/language arts classroom (NCTE, 1996; KSDE, 2000; KSDE, 2003), this study of how Kansas secondary English language/arts teachers view, understand, and apply visual literacy concepts in the classroom will help to determine needs in teacher training. By assessing Kansas secondary English/ language arts teachers' knowledge and use of visual literacy concepts in the classroom, deficiencies in the curricula of teacher education institutions in Kansas can be evaluated. By assessing their attitudes toward being expected to teacher visual literacy, the study hopes provides a better understanding of how Kansas secondary English/ language teachers view their roles as those being responsible for teaching life-long skills in literacy: visual, aural, and alphabetic.

Limitation of the Study

The methodology of this study contributes to its limitations. The relatively small population of secondary English/language arts teachers in the area (76) and the even smaller sample size (39) limit the generalization of the results of the research. Because the study was completed exclusively in public high schools in central Kansas, the results may not be consistent with finding for private schools or for public schools in the remainder of the state. The agricultural basis of the economy of central Kansas makes for a culture different from some other parts of the state. Although many Kansas farming communities have large numbers of students in lower socio-economic categories, rural poverty differs markedly in nature from urban poverty, mainly because of the ability of the rural poor to grow their own food supply. While the gender ratio of students and teachers in high schools in central Kansas is comparable to the gender ratio of the remainder of the state, racial and ethnic minorities among both teachers and students are under-represented in the three-county area as is true for most other counties in the state. Kansas has significantly fewer minority groups, fewer non-native English speakers and a

smaller proportion of disabled individuals than the national average (U.S. Census, 2000). Consequently, while the study is representative of the state, results may not generalize beyond the central plains area. In addition, because of the population from which the sample was taken, the results of the study may not generalize to teachers who are members of racial minority groups or who live in urban areas of the state and region.

Organization of Study

Chapter 1 is an introduction to the overall issues including a statement of the problem, the purpose of the study, the significance of the study, definition of terms, and organization of the study.

Chapter 2 provides a review of the literature that establishes a theoretical framework for the study. Areas of importance include but are not limited to:

- Alphabetic Literacy
- Aural Literacy
- Media Literacy
- Multiple Literacies
- Visual Literacy

Chapter 3 includes research questions and a discussion of the methodology of the research design, site selection, subject selection, data collection, and data analysis.

Chapter 4 includes a description of the actual findings as revealed through various means of data collection. Characteristics of participants are included, as well as survey results distributed in several formats. A summary of the issues identified are also included.

Chapter 5 includes an overall analysis of the data, seeking to identify the training educators have received in visual literacy, the source of that training, and how gender, race,

experience, location, education, and other related factor influence teachers' attitudes, understanding, and use of visual literacy in the secondary English/language arts classroom. Chapter 5 also provides a summary of the data based on the research questions, implications for teaching, effective instruction, teacher training, and recommendations for further study.

CHAPTER 2 - Review of Perspectives of Literacy

Definitions of Literacy

Even though education and literacy have generally been connected with written language in Western civilization, the view of what it means to be literate has changed through the years. Before the Renaissance and well into the twentieth century in some places, people who could write and recognize their names were considered literate. Only males who were part of the clergy or part of the ruling class received enough education to allow them to decode, understand, and create complete texts (Leu & Kinzer, 2000). During the Renaissance, following the invention of the printing press, more middle class men received instruction in reading and writing. With the coming of the enlightenment, women in the middle and upper classes also began learning to read and write in larger numbers. When the United States was settled, the founding fathers felt that an educated citizenry was necessary for the proper conduct of a democracy (Murray, 2000).

Thus, by the end of the nineteenth century in America, free, public education allowed virtually all citizens (white males) who wanted to read and write to do so, at least on a functional level. As was true in earlier periods, literacy was tied mainly to decoding written text. Reading texts aloud and reciting chosen passages were a significant part of public education into the first part of the twentieth century. With an emphasis on "sounding out" words, teachers stressed the ability to relate the written word to spoken language as much as the ability to interpret the text. While teaching comprehension received a certain level of attention, writing text that expressed, informed, or persuaded was not a significant part of the curriculum. In fact, penmanship and spelling had almost equal status with expression of ideas (Gordon & Gordon, 2003). While

composition and rhetoric were part of the secondary and post-secondary curriculum, neither received much attention in the elementary schools, where, until after World War I, many individuals ended their education (Gordon & Gordon, 2003). As the United States moved from a largely agrarian society to an industrialized country, because of the need for workers who could read, schools continued to place emphasis on literacy, but generally only as the ability to decode and understand text.

After World War II, the need for literacy education beyond being able to decode and understand written text became apparent. With the increasing importance of electronic technologies such as radio, television, and eventually the Internet, educators came to realize that instruction based solely on language was inadequate for providing students with the skills necessary for them to function in society. A student who could not understand the conventions of images used on television, in the cinema, and on the Internet was placed at a serious disadvantage (Fulton, 1997). Even in more conventional print media, logos, icons, graphs, charts, maps, and pictures all provided a way of knowing different from the more cumbersome language-based communication that had been the mainstay of education until the twentieth century (Moriarty, 1994). Although other literacies were hinted at as early as the 1950s, when television began to enter the living rooms of American homes, most literacies have never been satisfactorily defined. By the 1990s, people began to talk about multiple literacies and, by the turn of the millennium, attempted to provide a way to define the essentials of literacy (Rafferty, 1999).

The shift from the preeminence of language-based education in defining literacy was not, however, an overnight event. Looking at textbooks used in public schools over the past century clearly shows how communicating with means other than words has slipped into print text

(LaSpina, 1998). Just as moveable type printing presses brought alphabetic literacy to the masses, offset and later digital printing introduced visual literacy to the general public. From the McGuffy reader, with its almost exclusive use of text, to modern readers, with their ample illustrations and graphics, the changes in textbooks make it clear that language-based education no longer holds the exclusive position that it once did (Skaggs, 1981). These new, non-verbal texts have made defining literacy difficult. Even if educations were able to come up with a definition of what constitutes literacy that would be generally accepted, most English/language arts teachers do not have training in how to instruct students in literacies that are not language-based (Tuggle, Sneed, & Wulfmeyer, 2000).

Even though English/language arts training is often limited to language-based texts, by the 1980s it was clear to most people that in popular culture if the message of verbal and visual communication did not match, the visual would predominate (Griffin & Schwartz in Flood, Heath & Lapp, 1997). This growth in the importance of visual media, beginning in the late nineteenth century and continuing to the present, has, particularly among young people, come at the expense of the written word (Schirato & Yell 1996). Yet, even though students today may read less and be less literate aurally than past generations, they are not necessarily more visually literate than their ancestors who had less experience in visual communication than contemporary students for whom television, video games, and computers are a way of life (Flood & Lapp, 1997). Exposure does not constitute understanding.

Therefore, it may be the very young people exposed to visual messages the most that need instruction in interpreting those messages the most as well. Visual images now have significant control over how people in Western civilization interpret their world (Schirato & Yell, 1996; Jenks, 1995), with the new technologies giving more significance to communication

using other than verbal means (Morgan & Welton, 1992). "Increasingly, an argument can be mounted that a literate person in contemporary western cultures is, first and foremost, someone who is able to recognize, read, analyze and deploy a variety of visual genres and mediums" (Schirato & Yell, 1996, p. 209). Although students today tend to be more visual learners than in previous generation because their world is rich in visual stimuli (Owston 1997), the book is likely to remain important in education and knowledge acquisition for years to come (Krausz, 2001).

Mark Making and Literacy

While the literacy tied to the alphabet has reigned supreme for nearly all of the history of Western civilization and is likely to remain so for several years to come, the basic definition of literacy as being able to read and write does not necessary limit the concept to reading and writing alphabetic text. Defining literacy requires looking at the characteristics of various forms of communication and what they have in common. Of the less transitory forms of communication used by modern man, most have one characteristic in common. They involve making marks. Various methods of communicating with marks seem to be common to most humans. In fact, it appears that humans are, by nature, mark makers (Sheridan, 1997). Children, as soon as they are able to hold a stick, pencil, or crayon, begin to scribble. As children become more adept at handling the "writing" instrument, the marks they make begin to become differentiated. Adults, of course, make alphabet marks, but they also make numerical marks, musical marks, and image-related marks.

Mark making, then, seems to be an attempt by humans to create permanent communications. Just as King (2000) remarked that writing is telepathy, communicating across time and space, so too are mathematical notes, musical notes, and visual images.

Communicating with others and self-expression are the goals of most of the types of mark making that human use, whether verbal, visual, musical, or logical. According to Sheridan (1997), humans are the only creatures who use systems of marks to express meaning. Sheridan (1997) believes that mark-making is, in fact, an instinctual means of expression for human. Moreover, she gives equal weight to each system of mark making because "[n]o single system for representing thought is powerful enough to explain all of our thoughts…Emotion and information require a range of marks" (Sheridan, 1997, p. 1). These multiple systems of mark-making and the increase in technologies that provide new forms of mark-making that have given rise to the current interest in multiple literacies.

Multiple Literacies

Defining literacy as being able to read and write expressive marks reveals the breadth of what teachers are expected to teach in the name of literacy. English/language arts teachers are, of course, among the ones generally held responsible for literacy instruction. According to NCTE/IRA standards and many state standards, English/language arts teachers are expected to instruct their students in listening, speaking, reading, writing, viewing, and using visual expression. Therefore, English/language arts must now consider how they will use these newly defined literacies to enhance their students' academic skills (DePorter, 1992). Before they can instruct their students in these other literacies, however, they must first be able to define the concepts involved and understand how they fit in with the traditional approaches used in English/language arts classrooms.

The idea of teaching literacy beyond traditional alphabet-based literacy may be especially difficult for some English/language arts teachers because people who choose to go into English/language arts education are often people who are more skilled in traditional literacy than

their peers (Spender, 1995). In fact, teachers in general have stronger preferences for language learning than the average population. In a survey of 2,000 educators, Teele (2001) found that 17 percent of teachers were strong linguistic learners while only10 percent were strong visual/spatial learners. Yet, in a survey of those teachers' students, Teele (2001) discovered that the greatest number of students were strong visual/spatial learner with only a small percentage being strong linguistic learners. Noting the difference between the teachers' strengths and their students' strengths, Teele (2001) concluded that educators must come up with ways to connect with the students in their classes by using strategies that employ more than just linguistic-based material. Realizing that being able to read and write alone no longer makes one literate, educational researchers in the twenty-first century are using terms such as "aural literacy," "visual literacy," "media literacy," "information literacy," and "technical literacy" to describe the types of instruction that go beyond traditional instruction (Rafferty, 1999).

How these literacies interact has not been studied thoroughly, but that verbal literacy and visual literacy influence each other seems clear from studies of elementary school students in which those who used both words and visuals to create narratives improved their writing skills significantly (Milliard & Marsh, 2001). Looking at elementary students' work with visual information, Moline (1995), concluded that children have a natural affinity for information with high visual appeal. A combined visual-verbal approach in teaching composition is, however, rarely used with older students, whose writing is generally expository or persuasive rather than narrative, despite the fact that, according to Hocks, "Students need to learn the 'distanced' process of how to critique the saturated visual and technological landscape that surrounds them as something structured and written in a set of deliberate rhetorical moves" (Hocks, 2003, p. 645). Therefore, few studies have posed the question of how visual literacy and verbal literacy

interact. As a result of teachers' failure to make connections between visual and verbal literacy, older students who are highly visual often have difficultly following traditional approaches to writing expository and persuasive essays. Yet, "visualizers," when allowed to follow non-traditional approaches to the writing process, can produce essays that are often superior to those of "verbalizers" (Tucker, 1995). While current studies hold out hope that teaching concepts common to aural, alphabetic, and visual representations may improve the communication skills of students, the confusion of ever-changing technologies and the discipline-specific nature of most secondary classrooms pose problems.

Definitions of Visual Literacy

While most English/language arts teachers understand how to use and teach alphabetic and even aural literacy, they may not be so adept at using and teaching visual literacy. Since it was first used in the 1970s, the term "visual literacy" has been given many definitions by many disciplines. One early description of visual literacy was "the active reconstruction of past visual experience with incoming visual messages to obtain meaning" (Sinatra, 1986, p. 5). A more general definition given over a decade later was "the ability to 'read,' interpret, and understand information presented in pictorial or graphic images" (Wileman, 1993, p. 114). Another similar definition of visual literacy referred to it as "the learned ability to interpret visual messages accurately and to create such messages" (Heinich, Molenda, Russell, & Smaldino, 1999, p. 64). In all of these definitions, visual literacy can generally be thought of as paralleling verbal literacy, both aural and alphabet based (Kiefer, 1994). Tying the concept of visual literacy back to the general definition of literacy, visual literacy may be thought of as any creation of visual images intended to communicate across time and space.

Because the term "visual literacy" has different meanings to different people, it has been unclear where and how this new literacy should be taught. Is visual literacy a visual arts issue as the first part of the name might imply? Perhaps the computer teacher would be best suited to address a problem related to emerging technologies? If visual literacy is truly a literacy, shouldn't the English/language arts teachers be responsible? Discussion continues with no resolution, no definition of visual literacy, and no disciple responsible for teaching it. While many people accept the need for instruction using non-verbal modes of learning, many do not fully understand nor appreciate critical thinking using non-verbal modes of learning. Even though many educators clearly see the desirability of teaching visual literacy, difficulties have arisen in both English/language arts and other disciplines because of a lack of understanding. Each of the disciplines that uses the term "visual literacy" holds a slightly different perspective of the term and regards somewhat different issues as more important. Computer technology, media studies, communications, the visual arts, and language arts all recognize up to forty different terms related to various types of literacy, with three broad categories standing out—verbal literacy, visual literacy, and media literacy (Rafferty, 1999). Obviously the differences among disciplines in their understanding of literacy have created confusion.

Yet, the confusion does not stop with the various disciplines that use the term "visual literacy." Within the English/language arts discipline itself, many educators hold different views of what visual literacy is. In fact, some even argue that literacy and rhetoric cannot appropriately be used in connection with visual images (Blair, 1996; Fleming, 1996). In addition to the problem of not having a common definition, teaching visual literacy may be difficult for some English/language teachers because of their perception that some of their students have superior knowledge of the media and technology associated with visual literacy (Loveless, 2000).

However, as students become less accustomed to using written language to transmit thought, they may also become less aware of how the images that they generally rely on to gain knowledge impact their understanding and beliefs (Flood, Heath, & Lapp, 1997).

Theorists have attempted to create models for better understanding the concept of visual literacy. Some of the first models used the idea of language as a metaphor for visual literacy. Early in the discussion of the importance of visual images, Ruesch & Kees (1956) identified three types of non-verbal language—pictorial, action, and object. Even as visuals were becoming more prevalent in society, the interest in what constitutes visual literacy seemed to wane until the late 1980s. Braden & Hortin (1982) teamed to map the domains of visual literacy. Using a Venn diagram, they illustrated the overlap of visual literacy with vision and linguistics. Both perception and understanding of structure and meaning were required for a person to be visually literate according to Braden & Hortin (1982). As part of the Delphi study, Clark-Baca & Beauchamp (1990) reported nearly two hundred statements attempting to define visual literacy. From her study, Clark-Baca later joined with Braden (1991) in developing a cluster map to illustrate the components of visual literacy. At the center of the map was "purpose," suggesting classical composition and rhetoric influences. Surrounding "purpose" were six areas making up visual literacy—communication, learning, thinking, constructing meaning, creative expression, and aesthetic enjoyment. Clark-Baca & Braden (1991) recognized, however, that the growing volume of information about visual literacy was not contributing to a consensus among the experts as to what actually constituted visual literacy.

Interest in describing and defining visual literacy continued throughout the 1990s. Various disciplines took various perspectives. Coming from an educational media point of view, Moore & Dwyer (1994) edited a group of essays on visual literacy in their book, *Visual Literacy*.

In the same year, Messaris (1994), considering visual literacy from a psychological, perceptual construct, concluded that visual literacy was a natural phenomenon, one that, with few exceptions, could not be taught or learned. Also in 1994, Seels (in Moore & Dwyer), coming from an educational point of view, subdivided visual literacy into visual thinking, visual learning, and visual communication. However, she did place visual communication at the top of her "Visual Literacy Cube," with visual thinking and visual learning to the sides, emphasizing the important of the visual as language. In the following year, Watkins (in Moriarity, 1995), from a mass communications perspective, outlined six domains of visual literacy—aesthetic, functional, historical, symbolic, perceptual, and cultural. Also that year, from an English/language arts and creative writing view, Bell (in Moriarity, 1995) categorized visual literacy as relying on visual acuity, cultural understanding, imagination, and technology.

By the turn of the 21st century, in seeking a definition of "visual literacy," Kovalik & King (2004) used the broad term "visual literacy" in much the same way that Seels (in Moore & Dwyer, 1994) did ten years earlier. They saw visual literacy as encompassing three other concepts--visual thinking, visual learning, and visual communication. A further subdivision of visual communication, visual rhetoric, views visual images as persuasive tools. Because the terms "visual literacy" and "visual rhetoric" use the words "literacy" and "rhetoric," which traditionally are associated with English/language arts, many states have included standards, in the English/language arts curriculum, related to visual literacy. "Visual literacy" and "visual rhetoric" do, in fact, parallel traditional, language-based literacy and rhetoric, both aural and alphabetic (Kiefer, 1994). Yet, the relationship of visual literacy to the traditional literacies historically taught in English/language arts classrooms is not well established. Nonetheless, visual literacy is clearly literacy in the same sense as traditional literacy. Yet, visual literacy has

never been emphasized as strongly in formal education as traditional literacy, particularly at the secondary level. This fact can be illustrated by the textbooks used at the secondary level.

Although elementary-school texts are richly illustrated, as students progress into secondary school, visual images become fewer, with a greater proportion of materials being alphabetic text (Kress & van Leeuwen, 1996). In the English/language arts discipline, opposition to the concept of visual literacy does not necessarily represent a bias against visual media in general but a preference for verbal media in situations where visual images and writing vie for importance. To many educators, in such circumstances, visual images pose a potential threat to verbal literacy, indicating a decline of culture and learning (Kress & van Leeuwen, 1996). The goal of advocates of visual literacy instruction is to persuade traditional forces that both verbal and visual literacy have a place in contemporary society as means to instruct and develop understanding.

Recognizing the importance of visual literacy is not a new phenomenon. British scholars, decades ago, were calling attention to visual literacy and its impact on education. They had come to realize that students needed to learn to read the many complex symbol systems beyond alphabetic text (Heath, 2000). As society is becoming more globalized, visual literacy naturally takes on a more significant role "where people are unlikely to have any given language in common" (Kress, 1997, p. 130) because images, particularly photographs, are easier to assimilate and more universal than words (Walker & Chaplin, 1997). The importance of visual literacy on an individual level also becomes apparent when one considers that, although some individuals show preference for language-based thinking, people generally develop the ability to think visually first. Unfortunately, people do not work on developing their primal visual ability but rather concentrate on abstract, logical, word-based thinking.

Visual Thinking

Fully developed visual thinking involves using pictures, colors, diagrams, or other visual elements to conjure up images, think about questions, organize thoughts, and imagine possibilities. Since visual recognition precedes verbal recognition in human development, visual thinking may be a more primary mode of thinking than the verbal thinking emphasized in most educational settings (Berger, 1972). People use visual thinking to imagine a problem in their minds or visualize what will happen in certain circumstances. Because humans can process visual information 60,000 faster than verbally presented information, visual thinking is a fast and powerful means of conveying information (Burmark, 2002). Thinking visually can allow humans to look into the future using imagination and possibility.

Daydreaming is another creative venue that may be considered a form of visual thinking. Einstein said that he rarely thought in words at all but in images (Randhawa & Coffman, 1978). His theory of relativity, in fact, came to him while he was observing a passing training and visualizing how what he was observing fit into natural laws. Even further back in time, Archimedes realized how he could weigh the gold in the king's crown when he noticed the water splashing out of the public bath when people stepped in. Moreover, some would assert that even sleeping dreams represent visual thinking in its least restricted form. Novelists, engineers, scientists, mathematicians, and others recall the "eureka" moments when they have awakened from sleep, having found the solution to a problem in their dreams (Baylor, & Deslauriers, 1986).

Even our language reveals the connection between visual images and thinking. English uses numerous metaphors to convey a depth of meaning that is not possible through pure description. Many of these English metaphors refer to ideas and thinking. Of those many

metaphors, ones related to the sense of vision are often associated most closely with thinking and understanding. "I see what you mean." "I perceive the truth." "I have focused on the issue." "I have a vision for the future." "I can picture it in my mind's eye." "Show me what you mean." All of these phrases are ones that relate the ability to see with the ability to think critically (Wileman, 1980). The relation between vision and thinking inherent in the language can be used not only to encourage visual thinking but also visual learning.

Visual Learning

Visual learning is an outgrowth of visual thinking. Educators have used visual learning to teach reading for years. Picture books that place the word "cat" next to the picture of a cat help students to develop the concept of written language. They learn to read using pictures. Although early elementary teachers have known the importance of visual thinking and visual learning as they train their students to read, upper grades have only recently begun to use visual learning tools extensively. Graphic organizers, pictures, videos, and computers can all aid in instruction in most all disciplines. Despite the acknowledged need for instruction in both verbal and visual modes, colleges who train future teachers generally do not provide a great deal of instruction in how to use visual techniques to enhance their students' learning.

Even though they may have had little formal training in how to use visual learning methods, English/language arts teachers in the past several years have begun to consider how to enhance the learning of students who are weak in their verbal, alphabetic skills by using visually based material. They have, in many cases taken their cue from teachers of students with learning disabilities, using methods such as graphic organizers to provide an organizational framework for thinking and learning (Tarquin & Walker, 1997). A graphic organizer is a way to visually represent students' prior knowledge.

One type of graphic organizer, mapping is used to describe an idea, a thing, a process, or a thesis with support (Anderson-Inman & Horney, 1996-1997). While the linear, verbal methods used in traditional outlining may work for some students, mapping has also been an effective tool in helping students organize the ideas they have read or organizing their own ideas before writing. Closely related to mapping, is treeing, which, unlike mapping, is used for cause/effect, hierarchy, or branching organization. Also related to mapping and treeing, fish-boning is used to show the causal interaction of complex events or phenomena. While mapping, treeing, and fish-boning generally use verbal information placed in visual organization, chaining, scaling, and cycling can use either verbal or visual information. Chaining is used to describe stages, steps, or sequences. For young children or older students who have strong visual preferences, pictures can be used to show how a process takes place. As students develop an understanding of chaining, they may add words. Scaling can be used to place historical events or ages on a timeline, degrees on a continuum, or shades of meaning or ratings on a scale. The points on the scale can either be visual, verbal, or numerical. Cycling is appropriate for less linear events, particularly those that occur in a series of interactions to produce the same results repeatedly. Again the steps can be shown verbally but are often more effective visually. Perhaps the most important reason teachers use graphic organizers is that research has shown that using visual methods stimulates creative thinking.

Studies have also shown that older students respond well to incorporating both verbal and visual materials in instruction. One factor that influences the way older students respond to various types of material is their prior knowledge. Chanlin (1998) found that students with low prior knowledge of a subject responded best to visual presentations, either still or animated, while students with high prior knowledge responded best to animated visuals. Later Chanlin

(1999) also found that males generally respond better to animated visuals over which they have some control. Just as students generally respond better to animated visuals, they also achieve at a higher level when visual materials are presented in color rather than black and white (Kleinman & Dwyer, 1999). Although students often prefer animated color visuals, they do not always learn best from the types of visuals that they prefer (Mayer, Bove, Bryman, Mars, & Tapangco, 1996). While older students seem to prefer complex visuals, they learn better when the visuals are simple and have limited text (Myatt & Carter in Heinich, Molenda, Russell, & Smaldino, 1999). Realizing that students do not necessarily learn best from materials that they find most appealing, teachers may also need to instruct students in how to use visual material that will be both attractive and instructive since it takes both to communicate effectively.

Visual Communication

After learning to think and learn using visual images, students can begin to communicate using visual methods. The term “visual communication” implies that visual material can convey information without words. While some argue that images cannot express precise thoughts in the way that language can, most would agree that a picture can relay information. According to Plato in *Phaedra* Socrates argued that visual communication was a purer, more precise form than verbal communication. Socrates described two worlds, one the murky world of imperfection represented by tangled and inept medium of speech and the other an "upper world" of perfection and light where all things are communicated visually, unmediated, and without the need for words. In addition, Socrates worried that reading and the written word would detract from clear thinking. Despite Socrates endorsement of visual images as a means of communication, few people view visual images as constituting a language.

Trimbur (2000) points out that currently, visual communications is rarely taught except in advanced technical writing or specific professional writing courses because many educators feel that visual communication is only necessary for students going into vocational-technical fields. Kumpf (2000) also looked at how visual communications has affected technical writing. Urging researchers to discuss visual communications, which has exerted an increasing influence through computers and graphic capabilities, Kumpf (2000) established ten categories for discussion of both hard copy and online documents. His categories are:

1. first impression,
2. external skeleton,
3. interpretation,
4. heft,
5. consistency,
6. style,
7. convention,
8. expense,
9. chunking, and
10. attraction (Kumpf, 2000, p. 404).

Despite Kumpf's plea for discourse on visual communications, most linguistic theorists do not even consider the visual a form of communications. In fact, many assert that, since images are not discursive and have no formal grammar, they cannot be considered a language. It then follows that without a language, images cannot be read, which is clearly not the case. Linguists hold that a language must have syntax and grammar. Syntax and grammar refer to the system of rules used to turn words into sentences. While syntactic rules change from language to language

and over time, once people within a culture learn the rules, it is easy for them to read and write stories about their culture. Some do not consider images a language because images do not have the equivalent of an alphabet and because they do not have syntax in the same sense that language does. Even without alphabet and syntax, however, images do evoke responses in the brain through use of color, form, depth, and movement.

Although these elements carry meaning in the way that alphabet does, the difficulty in finding an alphabet for images points out the depth of communication possible through pictures that is not possible with words. The other major problem linguists have regarding images as a language is that elements of a picture have no recognized syntax. While words follow a linear, horizontal order, the structure of a visual image is taken in all at once by the viewer without any specific rules of order. While words by themselves generalize, images give irrefutable, specific evidence. According to Berger (1972), the visual directly represents rather than interprets reality. It is up to words to interpret. Thus, words and pictures have equal importance in the communication process. Moriarty (1994) also felt that the verbal and visual were separate but equal elements in human communication. She concluded that " by redefining the notion of a 'primary' system and including visual communication as well as verbal, we may move further towards a more thorough analysis of the complexities of communication" (Moriarty, 1994, p. 21). In order to help define visual communications, Moriarty, along with Kenney (1995) constructed a conceptual map centered on theoretical foundations for visual communications from various disciplines. By pointing out the many disciplines that have used theories associated with visual communications, Moriarty & Kenney (1995) attempted to elevate visual communication to the level of verbal communication.

Elements of Visual Communication

A further attempt to identify the syntax and grammar of visual images classified visuals as symbols, depictions, icons, and indexes. Depictions, icons, and indexes all resemble the object they represent in some way, with depictions attempting to recreate the appearance of the object represented. Drawings and photographs are the most common depictions. Icons are also similar to the object represented, but they resemble the object in only a stylized manner. An index does not represent an object but actually uses a physical representation connected with an object to denote action. For example, a footprint representing a person walking is an index. Symbols are arbitrary, with their meaning agreed upon through convention. Written language is, then, a visual symbol system, a form of visual language.

In fact, many types of visual language, including written language share common rules. Understanding those rules can help people communicate in many different types of language. When people think about language, they immediately associate it with spoken or written language. Visual language has been used most effectively in traffic signs, where a combination of geometric figures, a variety of symbols, and a set of colors express a wide range of ideas unambiguously in a fraction of a second. All languages, even visual ones, must be learned either through experience or training. Children learn spoken language from their experience with the environment and interaction with people around them. In school they learn written language in a systematic way through explanations from the teacher.

Like spoken or written language, visual language can be unclear or easily understood, depending on the context. In certain cases, visual language can transmit a message more efficiently than written language. Yet, visual language has to be either explained to the audience or based on common experience or conventions that will be self-explanatory within the

audience's culture. While conventions of visual language are cultural, all cultures do share some general rules of visual language. Whether depictions, icons, indexes, or symbols, on a more basic level, the elements of visual communication are the following:

1. Dot—The most basic unit of visual communications. Organized patterns of variously colored dots make up computer screens, television screens, and many other media which communicate visual information.
2. Line—a collection of dots on a visual plane.
3. Shape—the outlines of objects, parts of adjacent objects, gaps, or negative shapes between objects. Geometric shapes provide an elementary vocabulary to analyze and structure the world.
4. Direction—the angle of the line or shape, generally horizontal, vertical, diagonal, or curved.
5. Texture—the appearance of an object which conveys its tactile characteristics.
6. Hue—color.
7. Saturation—the amount of gray in colors, the intensity of the colors.
8. Value—the lightness or darkness of an image as a whole.
9. Scale—the relations between objects shown by manipulating the relative size of objects.
10. Dimension—ocular systems imitations used to make two-dimensional objects appear three-dimensional.
11. Motion—movement suggested in a static object or movement simulated by combining time and space. (Burmark, 2002)

These visual communication elements can work with or apart from verbal and alphabetic communications.

Making sense of visual images first requires recognizing differences in order to distinguish objects, indicate their relationship to each other, and give meaning to the image as a whole. For example, differences in color or shading distinguish one object from another, differences in scale suggest the proximity of each object to the viewer, and differences in texture and focus clarifies to the viewer which element is more important. When viewers are able to understand relationships among the elements of the image, they can then begin to understand the message or story of the image. People can readily distinguish the elements of the image and understand the message of the image as a whole because, with practice, they are able to group information visually.

Again the process is not dissimilar to the development in learning to read. Children may first identify letters, then group those letters into meaningful sounds that become words. As children become more proficient readers, they no longer identify each letter but see those letters as forming familiar words. The experienced reader only stops to identify words and syllables when he or she encounters unfamiliar elements, new words. So, too, in developing visual literacy, people may first distinguish color, line, and form. After practice in visual literacy, they begin to see the whole and return to the individual elements only when the image is unfamiliar and new. To become visually literacy people must learn to group the various elements together based on relationships, generally either proximity or similarity. Conversely, they must also be able to identify contrast by differences in color, direction, shape, or size (Kress & van Leeuwen, 1996).

After people can distinguish visual elements and understand their relationship, they can begin to understand the story or message of the image. The arrangement of the focal points of an image is know as visual hierarchy. Visual hierarchy involves using the relationship to create

more or less weight to the various visual elements in order to form a pattern of movement. The visual weight of an element can be measured by the degree of attention demanded by that element or by how well the element sustains the viewer's attention. Size, color, and contrast are all significant in determining the weight of an element. Elements with the greatest weight become the center of attention, the beginning point. The hierarchy of elements then guides the view's eye through the image, building the story or message of the image. Visual hierarchy not only allows the viewer to recognize the elements of the image and understand the story or message, but also unifies the elements into a complete, coherent whole, creating order and balance. Without visual hierarchy, each element would have equal importance, creating an image with no sense of unity. Thus, the viewer can use the elements of visual language and the syntax of visual hierarchy to develop visual literacy.

Visual Rhetoric

Like "literacy." "rhetoric" has usually been defined in terms of linguistic expression. In simplest terms, "rhetoric" is the art of effective persuasion. According to Aristotle, the rhetor must consider his own character, the character of his audience, and the message that he chooses to convey. An additional consideration is the *kairos*, the time, place, and situation in which the rhetor expresses himself. Bitzer (1968) uses the term "rhetorical situation" to express a modern concept similar to the classical *kairos.* In preparing a rhetorical expression, the rhetor must go through five stages or canons:

1. Invention—finding arguments, evidence, and examples.
2. Arrangement—deciding on the structure of the expression, formulating satisfying beginnings, middles, and ends.
3. Style—choosing an artful way to give expression to the ideas.

4. Memory—recalling commonplaces and other aids to develop ideas as they emerge.
5. Delivery—presenting the message in a way that is clear, forceful, concise, and emphatic. (Crowley & Heehaw, 2004)

Because, in classical times, rhetoric was generally thought of as persuasion through speech, many of the concepts of rhetoric today still refer to persuasive speech. In ancient Greece, the educated class found it necessary to be persuasive in their communication in order to convince their fellow citizens to accept their points of view, particularly in governmental and judicial matters. As people began to use language in written form more extensively, rhetoric also began to be used to refer to persuasive writing (Frost, 2005).

As a more permanent form of communication than speech, writing allows the rhetor to be more deliberative and deliberate in his or her selection and delivery. Still, the writing process described in modern composition theory is not without parallel to the classical canons of rhetoric. The writing process consists of planning (invention), organization (arrangement), writing (style), revising and editing (memory), and publishing (delivery) (Crowley & Hawhee, 2004). The more recent form of persuasion through writing follows many of the same rules as the earlier form of persuasion through discourse. Even how teachers grades students' compositions is similar to the stages of rhetoric. In Kansas and a number of other states, the assessment tests for composition are graded on the six-trait writing rubric (Spandel 2000). This rubric consists of six areas: ideas or content (generally generated in invention), organization (arrangement), voice (style), word choice (memory), sentence fluency (delivery), and conventions (Grudzina & Bearsley, 2006).

Clearly, then, the concepts of classical rhetoric have been applied to both oral and alphabetic expression. The question is, can these same concepts be applied to visual expression.

While rhetoric is still concerned with oral and written expression, now that people are able to create and manipulate visual images with relative speed and ease, English/language arts teachers must consider the possibility of rhetoric referring to persuasive images and visual presentations as well. Hocks believes that "[s]tudents need to learn the 'distanced' process of how to critique the saturated visual and technological landscape that surrounds them as something structured and written in a set of deliberate rhetorical moves" (Hocks, 2003, p. 645). Understanding visual rhetoric then allows students to use visual images to persuade an audience to a certain point of view or action. Just as visual literacy parallels reading, visual rhetoric parallels persuasive writing. Although media at one time used only traditional rhetoric, with newspapers and textbooks relying solely on text to convey their messages, now they employ visuals of various kinds to enhance readers' understanding of the text.

As a result, teachers must also instruct their students in visual literacy so that the students will be more aware of the visual rhetoric used by the media. Similarly, if teachers want their students to be able to persuade a modern audience, those students must be familiar with the techniques and assumptions of visual, as well as traditional, rhetoric. Parallel to oral and alphabetic rhetoric, visual rhetoric has figures and ways of using those figures. Although knowing the grammar allows people to speak a language, to understand a message they must also know how to persuade. Persuasion, according to classical rhetoric can be accomplished through ethos (appeal to character), pathos (appeal to emotion), or logos (appeal to reason). In constructing an argument, the rhetor uses certain rhetorical figures. These figures differ from ordinary speech through the intentional use of structures that differ from the usual forms of expression. The figures may be broadly categorized as repetition, reference, and reversal

Visual rhetoric uses similar figures. The rhetor may repeat a certain color throughout a document (repetition). He or she may bold important terms to provide contrast (reversal). Finally, the rhetor may use common symbols or images to which the audience is expected to relate (reference). The use of rhetorical techniques should not, of course, merely provide window dressing for the presentation but should actually convey a message to the audience. Just as oral and alphabetic rhetoric, to the average person, may imply hollow, meaningless expression, visual rhetoric can also be attractive without containing meaningful information. The job of teachers is to instruct students in the techniques of visual rhetoric with the aim that they will use those techniques to understand visual message and to make complex information more understandable through visual communications. One of the visual resources available to teachers is digital imaging technologies. After gathering visual images either by using digital cameras or by scanning traditional pictures, students must be able to evaluate the group of images and determine which to include with a particular essay, story, or presentation (Smolin & Lawless, 2003).

In the early years of discussion concerning visual rhetoric, Arnheim (1969) claimed that "…artistic expression is a form of reasoning, in which perceiving and thinking are indivisibly intertwined" (Arnheim, 1969, p. v). However, until late in the 1980s, little significant work had been done in visual rhetoric partly because it has always been separated from verbal rhetoric (Kostlenick, 1989). According to Sullivan (2001), the lack of research in visual rhetoric before the 1980s was due to the division of labor between writers and designers. Now the personal computer has eliminated this division so that writers are expected both to write and to design text. Writers as designers must know the vocabulary and principles of creating and illustrating

texts which have a greater graphic element. The growth in interest in visual rhetoric has, then, paralleled the reliance on personal computers and related technology (Sullivan, 2001).

Kostelnick (1989) presented methods of teaching visual rhetoric and using document design to convey a message to teachers of technical writing using computers and related technology. He used a matrix with twelve cells to describe the visual elements of a document and how they can be used to persuade. Before Kostlenick began discussing the integration of visual and text, Tufte (1983) was looking at how data, particularly numerical data, could be presented visually. He later set out to show how words could be represented visually (Tufte, 1990) and how visuals could be constructed to illustrate actions (Tufte, 1997). Discussing how visual and verbal information was integrated before the printing press in works by Galileo, Newton, and da Vinci, Tufte (1983) suggested that new technology such as the computer presented the opportunity for the reintegration of the two types of rhetoric again.

While Bernhardt (1986) was also concerned with the integration of visual and verbal, he saw the visual as subordinate to the verbal in that he contended that the objective of visual text was "to call the reader's attention visually to semantically grouped information, focusing the reader's attention on discrete sections" (Bernhardt, 1986, p. 73). During the same time period, the Bartons (1990) went even farther than Bernhardt (1986) in suggesting that the visual message was subordinate to the verbal message by indicating that visual messages merely support or enhance the verbal message. While the Bartons (1990) did not consider the impact of the computer on the use of visuals and document design in verbal rhetoric, Tufte (1983), Kostelnick (1989) and Bernhardt (1986) all envisioned how computers could help enhance the verbal message through use of visuals and design. Seeing the computer as a visual tool, Horton (1994) went further to suggest that icons and graphical user interfaces made the visual more important

than the verbal in the Information Age. He gave five reasons for his conclusion that graphics are more important than words:

1. Images can express what words cannot.
2. Images are more quickly understood than words.
3. Images are remembered better than words.
4. Images can record information more efficiently.
5. Images can entice readers more effectively. (Horton, 1994, p. 191)

Despite the turn of some writers, such as Horton (1994), to privileging the visual over the verbal, Williams (1993) again affirmed that "text and visual are generally most effective when used to complement each other" (Williams, 1993, p. 674).

Semiotics

To bolster the position of visual rhetoric as equal in importance to verbal rhetoric, Kostelnick (1994) first connected visual rhetoric with semiotics, stating that "semiotics not only can tell us how purely visually sign systems work, but it also provides an avenue for unifying visual and verbal in a variety of visual communication settings" (Kostelnick, 1994, p. 98). By connecting visual communication with semiotics, Kostelnick (1994) was not only concerned with visual rhetoric but also aesthetics and document design. Later, in a special issue of *Technical Communication Quarterly* concerned with visual rhetoric, Kostelnick (1996) looked at the importance of document design on the web as a rhetorical technique. He felt that hypertext design "encompasses the global visual language of a document and operates in three modes, textual, spatial and graphic" (Kostelnick, 1996, p. 9) and "creates the first rhetorical impression on readers…" (p. 31).

In that same issue of *Technical Communication Quarterly*, Wickliff & Bosley (1996) called for more research in specific areas of visual rhetoric. They felt that "most academic studies of technical communications focus resolutely on textual elements of documents for evidence of the rhetorical strategies at work, minimizing or overlooking visual element of documents design" (Wickliff & Bosley, 1996, p. 5). Kostelnick, in collaboration with Roberts, (1998) again examined how technical writing teachers could instruct their students in writing visually. They presented six categories of design elements that have the greatest effect on the rhetorical impact of a document—arrangement, emphasis, clarity, conciseness, tone, and ethos. In addition, they pointed out four levels of design, each of which influences the rhetorical appeal of the document. Those levels were:

1. Intra (linear components)—Font size, Font style, Letter case, Character spacing, Character symbols;
2. Inter (nonlinear components)—Grouping, Positioning, Spacing, Indenting;
3. Highlighting methods—Headings and subheadings, Extra (visual elements), Data displays (Graphs, Charts, Maps, Tables), Pictures, Icons, Symbols, Figures; and
4. Supra (whole document)—Orientation, Color, Repeated logos. Most importantly, they continued to point out that the visual and verbal in document design are interdependent for effective rhetorical appeal. (Kostelnick & Roberts, 1998)

Document Design

As composition pedagogy began to emphasize the writing process after the mid-point of the twentieth century, the role of visual thinking in the writing process took on more importance. Finally, Bernhardt (1986) reached the conclusion that teaching visual literacy should not be based on using visuals in composition classes but on seeing writing as a visual image. Currently,

visual literacy has led English/language arts teachers to consider the possibilities for document design using desktop publishing, multimedia, and Internet (George, 2002). Document design in writing instruction in the United States is not entirely new, however. The visual appearance of written compositions has always been a consideration, even if it was only because of the importance placed on penmanship as a reflection of the ethos of the writer. Despite the continued interest in the appearance of the document, the possibilities of document design using new technology has not advanced much beyond consideration of readability.

One of the early researchers to address the importance of document design, Pickett (1984) claimed that layout was an important tool in readability, especially in technical and business writing. She was interested in considering how headings, white space, bulleted lists, various typefaces, and boxing could make the document easier to read. Benson (1985) was also concerned with technical writing and concluded that "the most effective documents are those that use both words and design to reveal and reinforce the structure of information in a text" (Benson, 1985, p. 35). Even up to the mid-1980s, most of the discussion of the essay document design in composition textbooks was limited to exhortations to use double-spacing, readable fonts of adequate size, and appropriate margins (Bernhardt, 1986). Bolter (1991) addressed the visual history of writing and its influence on the visual appearance of the page as did Killingsworth & Gilbertson (1992), who suggested that "the overall image rather than the flow of words is dominant, and the pieces of the page must subtly but effectively play off one another to create a unified rhetorical impact" (Killingsworth & Gilbertson, 1992, p. 43). They went on to point out that "verbal and graphical representation are not interchangeable, but are complementary" (Killingsworth & Gilbertson, 1992, p.45).

Later, Tebeaux (1997) recognized that "introductions, centered headings…, drawings, effective spacing, use of enumerated lists in instructions—all within page design…allowed readers immediate access to materials" (Tebeaux, 1997, p. 271). The visual appearance of a paper can reflect the point of the paper or detract from the message. With sophisticated word processing capabilities, writers are faced with more and more choices in their document design. In making these choices, the major visual elements that concern the writer are typography, graphics, placement, and white space. Typography involves type style, size, and effect. Graphics may include pictures, lines, graphs, diagrams, or other non-verbal expressions. Placement decisions can either help or hinder the reader. White space is to document design what punctuation and word spacing is to writing. Using visual elements, the modern writer can integrate the message of the text and the message of the appearance of the page.

In document design, the concept of visual hierarchy also applies because, if all the elements of the page have equal visual weight, the viewer will have difficulty making sense of the information on the page. As is true of alphabetic rhetoric, visual rhetoric also demands that the audience and the purpose determine the document design. When text and image are combined, the images and the visual elements that constitute them should act in concert with the text (Hagan, 2007). Therefore, certain rules apply when selecting images for a document made up of both visuals and text. The visuals should be appropriate to the audience and purpose; they should indicate the function of the element; they should be consistent throughout the document; and they should be positioned appropriately on the page according to the principles of visual hierarchy. Most importantly, visual communication should not scream at the audience. It should quietly educate and guide the audience through the document. While visuals have equal weight with text in importance, they should be more subtle since visuals tend to grab people's attention

more quickly than text. Visual organization, however, is only part of visual communication. As in traditional rhetoric, the voice and style of the rhetor is also a significant part of visual communications both in the selection of images and in the design of a document.

History of Visual Literacy

Although discussion of visual literacy involves a variety of topics, it was photographers who first used the term (Pett, 1988). At about the same time the term first came into use, Eastman Kodak began to publish *Visuals are a Language*, edited by Debes (Pett, 1988). This series of newsletters heightened the interest in visual literacy so that Debes planned a national conference for March 1969. The meeting at the University of Rochester was known as the *Conference on Visual Literacy*, which later gave rise to the International Visual Literacy Association (Pett, 1988). Debes later teamed up with Fransecky to publish a pamphlet which addressed the teaching of visual literacy (Fransecky & Debes, 1972). In addition to the early interest in visual literacy by photographers, ideas regarding the concept were beginning to circulate among psychologists as well.

Arnheim's *Visual Thinking* (1969) was among the first to view visual literacy as a perceptual phenomenon. Influenced by Arnheim and other Gestalt psychologists, Dondis (1973) went on to look more closely at the connection between visual literacy and traditional literacy by examining the grammar of visual elements—dot, line, shape, direction, tone, color, texture, scale, and motion. The new focus on the possibility of visual as well as verbal literacy created a split which many saw as a distinction between high (verbal) and low (visual) culture. Many felt that such a distinction between the types of literacy was elitist, discriminatory, and more destructive than beneficial in considering how technology has changed society (Hoggart, 1957).

Today, visuals are an integral part of teaching and learning in American classrooms. Textbooks, manuals, presentations, print media, electronic media, computer programs, and the Internet all use images as part of their message (Benson, 1997; Branton, 1999; Kleinman & Dwyer, 1999). It has been clear for over twenty years, that visual media is at the heart of the American culture. Now, mass media and technology are the primary source of information for most young people (Sinatra, 1986). These new forms of literacy are necessitating a shift in the objectives of education. While in the past reading, writing, ciphering, and memorizing were the goals of American school's push toward literacy, today being able to analyze and think creatively are more desirable and necessary (West, 1997).

Teaching Visual Literacy

Two approaches to teaching visual literacy have been proposed (Heinich, Molenda, Russell, & Smaldino, 1999). As in traditional reading instruction, some feel that teachers should first guide students in decoding visuals. To decode visuals, students must develop analytic skills, interpret, and create meaning from the visual images. As is true in traditional literacy instruction, once students have been taught to decode and comprehend the message, they must then create their own messages. Thus, the second part of visual literacy instruction is using visual images to communicate, paralleling writing in traditional literacy instruction. The connection between traditional literacy instruction and visual literacy instruction is significant because visual precedes verbal development (Berger, 1972). Using the earlier developed sense, visual, to teach literacy may enhance verbal learning later (Flattley, 1998; Sinatra, 1986).

Even though most agree that visual discrimination is important for any learning, including reading and writing, instruction in visual literacy in the English/language arts classroom has generally been viewed with suspicion until recent years. An add-on, a gimmick, a

way to add relevance to a boring subject, visual literacy has rarely appeared as a topic to allow students to better understand and use visual images but as a way to improve students' comprehension and composition of the written word (George, 2002). The visual has almost always been the step-child and the verbal the heir apparent in English/language arts classrooms. For many years the only English/language arts class where instruction in viewing and producing visuals was considered appropriate was the technical writing class, since graphs, charts, and diagrams seemed necessary to clarify the written word (Benson, 1997). In other English composition classes, however, words have historically been associated with high culture and images with popular culture.

Throughout most of the twentieth century, students were asked to compose verbal messages and consume visual material (George, 2002). The shift in emphasis from text to picture in textbooks must be understood in relationship to the social changes that have taken place in the last sixty years (Muffoletto, 2001). Anticipating the change in learning preferences, textbook publishers have moved into the multi-media market with CDs that give students access to images and graphics of all kinds. Part of the increase in publisher's use of visuals is due to the ability of visuals to recreate reality more precisely (Schirato & Yell, 1996). In addition, seeing and attending to visual images helps students recall information stored through previous experience, which can then be communicated in any form necessary, including verbally (Heath, 2000). According to Moriarty & Kenney (1995), the use of visual images, prepares students for more complex thinking and information processing of various types of information, including alphabetic information.

The condescending view that some English/language arts teachers held, early on, toward visuals resulted from the belief that teaching visual literacy threatened verbal instruction in

language and literature. After World War II, attitudes toward teaching visual literacy began to soften when it became clear that students would inevitably be exposed to visual images and that those images would be a major source of literacy. Scholars then began to urge English/language arts teachers to help students develop taste and critical judgment in their viewing (Curtiss, 1987). By the 1990s, the New London Group (Cazden, Cope, Kalantzis, Luke, Luke, & Nakata,1996) claimed that being able to understand and create visual images was not an add-on but one of the primary literacies that students needed to learn in order to be productive, literate citizens. To the New London Group, teaching visual literacy included leading students in a close analysis of visual images much as verbal literacy included close analysis of print text.

While visual literacy to some meant only analyzing images, other researchers began to consider how visuals might be used in English composition. At first, visuals were generally used in composition to model steps in the writing process (Kinneavy, 1971; Flower & Hayes, 1984; Phelps, 1991). In addition, visuals were sometimes used merely as prompts with the goal of encouraging students to use more vivid, description language in their writing. Another way in which visuals have been used in English composition that still remains popular is in analysis (Childers, Hobson, & Mullin, 1998). Propaganda and advertising images have been used extensively to get students to analyze messages in other than alphabetic text. As was true when visuals were used as prompts, visual images for analysis were not viewed as a means of communication.

Electronic Literacy

Similarly other new technologies did not seem to be accepted as means of communication. Yet, any means used to record and/or transmit human expression over time and/or space may be the basis of a type of literacy. Literacy may, then, include speaking and

listening as it is recorded or transmitted over the airways. Speaking and listening are, of course, precursors to reading and writing. Yet, to limit literacy to communication involving verbal expression seems too restrictive for the means of getting information that students now use. While traditional literacies concern expressions governed by rules and conventions, the conventions and rules of many literacies are still evolving (Kellner, 2000). Even though the conventions and rules of visual literacy are still evolving, image, text, color graphics, design, and content, in newspapers and textbooks, are used more extensively today than they were in older, text-heavy publications.

Despite the vast changes in traditional media, it not print media but multimedia and Internet in which the real changes in literacy concepts have emerged. As a result of these new technologies, educators must consider the literacies necessary to interact in multimedia and Internet environments. They will need to determine not only for themselves, but for their students as well, what skills they must acquire to learn, work, and create in the new millennium (Kellner, 2000). Being able to create in multimedia space requires more than just traditional literacy. It requires media literacy and information literacy. Yet, can media literacy and information literacy legitimately be called literacies? Of the many types of literacy identified today, NCREL's enGauge (2003) classifies them into seven categories --Basic Literacy, Scientific Literacy, Technological Literacy, Visual Literacy, Information Literacy, Multicultural Literacy, and Global Awareness.

While knowledge in all of these areas is important, only basic and visual literacy meet the criteria in the definition of literacy as understanding and creating recorded expression to be available to those at a distance, either in time or space. One could argue that technological and information literacy, which focus on finding and constructing information through various media, also conforms to the definition of literacy. Yet, it is by using and combining aural,

alphabetic, and visual literacy that people are able to develop expression and read through use of information literacy and media literacy. Similarly, the other four literacies identified by NCREL merely use aural, alphabetic, and visual literacy to gain or express information, based on skills or knowledge in a specific area. Literacy actually seems to be best limited to verbal literacy (including alphabetic literacy and aural literacy) and visual literacy. Doing so also, then, corresponds to the six English/language arts skills identified by NCTE (2007)—listening and speaking, reading and writing, and viewing and constructing vision images.

Media Literacy

While all visual images can be persuasive, the images that students see in the media are particularly persuasive because of the frequency at which they appear. Visual literacies, particularly those using technology, can, of course, provide information that written media cannot (Flood & Lapp, 1997), but students must be aware that the validity of the information may be questionable. If not, students are likely to be persuaded to take ill-advised positions. Therefore, while not neglecting traditional literacy, teachers must recognize the growing influence of technology and the new realities technology creates. English/ language arts teachers often feel ambivalent about teaching media literacy (Hart, 1992). Without students' receiving proper training in both verbal and visual literacy, as electronically produced simulations increase in popularity, they may overshadow actual experience so that the simulations will form a reality that will, in fact, become students' "first order reality" (Walker & Chaplin, 1997, p. 23).

Technology requires teachers to change the structure of their classrooms. Instruction using multiple literacies produces more depth and authenticity in the curriculum (Smolin & Loveless, 2000). Unlike in classrooms of the past, teachers now can use a variety of technologies in their instruction. Students then use both verbal and visual literacy to gain

information that is more contextual and less a matter of learning isolated skills. Classrooms that use both verbal and visual literacy are less formalized and traditional. One of the areas that has gained a great deal of attention in its use of both verbal and visual literacy skills has become known as media literacy. Many English/language arts teachers approach teaching media literacy nervously because they do not want to appear to be moving away from teaching the "basics." They feel that they must justify their use of media by having students produce written work (essays) related to media instruction or apologize for using media in the classroom (Hart, 2001). There is a tension between the desire to assert the value of literature and the growing awareness that the media play a central role in most people's lives

By the late 1980s and early 1990s, many educational researchers supported the addition of media education to the existing curricula (Considine, 1990; Duncan, 1989; Kahn & Master, 1992; Melamed, 1989; Tuggle, Sneed, & Wulfmeyer, 2000). To determine the need for and possibility of training in media literacy in the public schools, researchers surveyed both elementary and high schools in California (Lloyd-Kolkin & Tyner, 1988; Tuggle, Sneed, & Wulfmeyer, 2000). Teachers generally were open to learning more about media literacy and providing their students with media literacy instruction. In their survey of high school teachers, Tuggle, Sneed, & Wulfmeyer (2000) found that almost ninety-four percent believed that mass media studies should be a part of the social science curriculum. Even though teachers were overwhelmingly enthusiastic about including media literacy in their classes and around eighty-six percent felt qualified to teach media literacy, only thirty-four percent had received formal, college-level training in media literacy instruction. At about the same time that the California studies were being conducted, Duncan (1989) called for up-dated research that would include looking at how the media and popular culture affect the behavior of young adults. In the

proposed research, Duncan (1989) suggested that American educators examine media education in other countries, especially Australia. He also identified media literacy skills that included the relationship between media literacy and critical thinking, the impact of popular culture, and the power of individuals over the influence of media.

Empowerment strategies like those proposed by Duncan (1989) were used in the Rowland Animation program, which employed multi-media to teach creative and critical thinking skills, using collaborative approaches (Kahn & Master, 1992). The Rowland Animation program was based on developing the six skills outlined by Kohl (1982) that students would need to use in their adult lives. The skills were communicating with various languages (oral, written, and visual), solving problems, understanding technology, participating in the creative process, gaining knowledge about how groups function, and learning how to learn. When her students used videos as an alternative to traditional research papers, Graves-Snyder (1992) found that students not only had to research the topic but that they also had to interpret the material more creatively.

Some of the barriers to including media literacy training in the United States, according Considine (1990) were teacher training programs and the design of curriculum. Media literacy education, he felt, should not be a separate course but included in all classes, even though most teachers complained that they did not have room in the curriculum for instructing their students in media literacy. As educators began to plan what media literacy instruction would look like, Melamed (1989) warned teachers that they should use inquiry or discovery rather than merely providing students with information about the media. Many educators and administrators have cast doubt on the pedagogical soundness of instructing students in both verbal and visual literacy

to help them become more “media literate”. These doubts grow out of a view of literacy that confuses the purpose of education.

In a more traditional view, education is intended to convey information. In the modern classroom, however, information is so readily available that teaching the information may be pointless. Rather, developing thinking skills has become the true aim of education in the twenty-first century (Silverblatt, Ferry, & Finan, 1999). Thinking is of prime importance in media literacy because media literacy is more complex than just decoding. As in traditional rhetoric, understanding media messages involves interaction among the message, the audience, and the creator. Historical, social, and cultural contexts of all three components of the interaction play a role in the meaning of the media message. As with print text, audiences of visual text develop understanding based on this interaction. (Silverblatt, Ferry, & Finan, 1999). Rather than taking students away from the objectives of the English/language arts classroom, media studies allow students to construct and support their interaction with text. Studying audio and visual texts in the classroom encourages students to develop critical thinking skills using media that they enjoy and are familiar with, creating a community of learners who can engage in a lively discuss to which all members can contribute. As teachers prepare their students for a world where those students will be bombarded with both print and nonprint texts, teachers now must engage students in critical discussions of all types of text, both print and nonprint (Silverblatt, Ferry, & Finan, 1999).

One new media, the Internet, uses a new type of visual literacy. Hyperlinks contain visual cues to allow users to know they can move to another site by clicking on an image or text. Frequently, the text contains a unique color. If the text or image used as a hyperlink does not differ from surrounding material, users can still identify hyperlinks by the hand icon which

appears when the cursor passes over the link. These links and their visual cues allow users to read and write stories in a non-linear way which is changing how people think, play, learn, and understand (Johnson, 1997). In education, one of the exciting aspects of hypertext is that students, when they are able to click on a hyperlink to move to sites of interest, become engaged in the learning process, bridging and connecting concepts in a way that often seems chaotic to those who grew up with print media. One of the differences between print media and hypertext is that print media value order and permanence while hypertext values the webs that lead in various directions, sometimes resulting in contradictory results. Unlike print media, hypertext establishes patterns and context with "just in time" instead of "just in case" learning (Thornburg, 1994).

Although technology has made it simple to included visual images in text and on-line educational material, fewer visual images are being used. In a survey of distance education materials, eight-seven percent contained no photographic images and only fifty-eight percent contained any type of visual image. This disconnect between the use of visuals along with text in educational materials brings to question whether teachers are as knowledgeable about and as eager to use literacies other than alphabetic literacy as they appear to be. Thanks to the computer, information can be presented in numerous ways. Teacher may be the presenter or small groups or individual students may explore topics of interest (Smolin & Lawless, 2003). Yet, neither the teacher nor the students will receive the greatest benefit from available technologies if they are not versed in all of the basic literacies—aural, visual, and alphabetic.

Web Design

Only in the past few years have composition textbooks even mentioned Web pages and multi-media compositions. Now, as English composition teachers begin to consider the

possibilities of Web design, the importance of visual literacy is even more apparent because the visual construction of a web page is more evident than that of a traditional, printed page. Images, text, font, placement, color, white space, links, and other visual elements all play a role in the web page (Fulton, 1997). Writing for the web expands the meaning of composition. The visual impact of documents is enhanced on the web. The initial default of the web, neutral gray, has an even more ominous blankness than the blankness of a pristine piece of white typing paper or an intense white computer screen. (Wysocki, 1998).

Perhaps even more than their teachers, students are aware of the power of the verbal and visual interchange of a web page. Faigley (1986) compared teens' imaginative use of image and text on their personal web pages to the sameness of commercial sites. Faigley's conclusions seem to indicate that today's students are more sophisticated in the literacy practices of the Web than many professionals. Teachers, particularly, often have difficulty with having students use the visual and verbal modes of the Web because they feel inadequate to evaluate the products. When George (2002) had students create web pages in her English composition class, other faculty members wondered how she could evaluate the products because they felt it was unfair to judge students who had less visual talent than others.

The uncertainty about evaluation may stem from the fact that, until recently, teachers have not had the means to produce communications other than print text (Selfe, 1999). Even with the coming of the Internet and desktop publishing, incorporating visual literacy in the English/language arts curriculum was not always possible because of lack of time, money, equipment, and training. Also, while some classrooms have up-to-date technology, many barely have a chalkboard. Even if schools do not provide the materials necessary for teaching visual and other literacies, students who have grown up with technology and mass media will see

visuals not as subordinate to print text but as an intricate part of the world of communication to which they are exposed daily (Stroupe, 2000).

Mandates to Use Visual Methods

Despite the fact that English/language arts teachers have little training in teaching literacies that are not language based, they are expected address technologies, including computer graphics and interactive video, related to the return to an aural-visual rather than alphabetic culture (Stafford, 1996). Recently, in fact, the National Council of Teachers of English (NCTE) and the International Reading Association (IRA) lent their support to teaching students skills in analyzing non-print, as well as alphabetic-based, materials. In their most recent definition of language arts, NCTE and IRA (2007) include six language arts, three receptive and three expressive—speaking and listening, reading and writing, and, surprisingly, viewing and designing visual material. The NCTE and IRA (1996) outline of language arts affirms that knowledge and expression extend beyond information gained through language and into studying and producing non-print material, especially in the English/ language arts classroom. The NCTE/IRA English/language arts standards include the following (bold added for emphasis):

- Students read a wide range of print and **non-print** texts…
- Students…draw on…their understanding of textual features (e.g., sound-letter correspondence, sentence structure, context, **graphics**).
- Students adjust their use of spoken, written, and **visual** language…
- Students apply knowledge of…**media techniques**, figurative language, and genre to create, critique, and discuss print and **non-print** texts… Students use a variety of **technological and information resources**…

- Students use spoken, written, and **visual** language to accomplish their own purposes… (NCTE & International Reading Association, 1996).

Kansas English/language arts standards also include incorporating visual literacy in the traditional English/language arts areas of reading, writing, speaking, and listening, as well teaching information retrieval. Moreover, standards include two other areas that specifically address issues related to visual literacy--viewing and media products. The standards and benchmarks for viewing and media production include the following (bold added for emphasis):

Viewing Standard: Learners will demonstrate skills in **viewing** for a variety of purposes.

Benchmark 1: The effective **viewer** is attentive.

Benchmark 2: The effective **viewer** recognizes/identifies the cues in **visual** messages transmitted through objects, images, sounds, and words.

Benchmark 3: The effective **viewer** understands **visual** messages.

Benchmark 4: The effective **viewer** remembers and applies the content of **visual** messages.

Benchmark 5: The effective **viewer** analyzes/evaluates **visual** messages.

Media Production Standard: Communicators effectively use a **variety of media** to create products to communicate for a variety of audiences, purposes, occasions, and contexts.

Benchmark 1: The effective communicator is knowledgeable about various methods that can be used to create aural and **visual** products.

Benchmark 2: The effective communicator creates **single-media and multi-media** products (KSDE, 2000).

Of the four standards for licensure of English/language arts teachers in Kansas, based on NCATE standards, three (1, 3, and 4) address visual literacy. The standards and indicators are as follows (bold added for emphasis):

Standard #1: The teacher of English language arts demonstrates knowledge of a variety of texts, both print and **nonprint**…

Knowledge Indicators

- The teacher has knowledge of a broad range of print and **nonprint** texts including informational materials, academic works, technical documents, **on- line materials**, and other oral and **visual** media.

The teacher has knowledge of a variety of reading and **viewing** strategies… Performance Indicators

- The teacher provides direct instruction and modeling of reading and **viewing** strategies…
- The teacher guides students toward becoming independent readers and **viewers** by encouraging self-monitoring of reading and **viewing** habits and processes.

Standard #3: The teacher of English language arts demonstrates the ability to communicate effectively and responsibly for a variety of audiences and for different purposes.

Knowledge Indicators

- The teacher knows the composing processes and rhetorical strategies for producing different forms of oral, written, and **visual** discourse.
- The teacher understands the use of writing, speaking, and **observing** as major forms of inquiry, reflection, and expression.

Performance Indicators

- The teacher helps students develop the ability to recognize and use oral, **visual**, and written text appropriately in different social and cultural settings.
- The teacher communicates orally, **visually**, and in writing for a variety of purposes and audiences…
- The teacher models effective **nonverbal** communication skills.

Standard #4: The teacher of English language arts demonstrates knowledge of current methods for teaching processes of reading, writing, speaking, listening, thinking, and **viewing** and their interconnections.

Performance Indicators

- The teacher models a variety of effective instructional strategies that aid students in developing their reading, writing, speaking, listening, and **viewing** abilities and that help students make cross-curricular connections.
- The teacher demonstrates skills in **using technology**, including proficiency with word processing, the use of the Internet as a research tool, and other **instructional media.**
- The teacher designs instruction that addresses the influences of prior knowledge, metacognition, motivation, and self-concept on the reading, writing, speaking, listening, and **viewing** processes. (KSDE, 2003)

With this increased demand for English/language arts teachers to give instruction in visual literacy, many will need to change their approach to the subject of literature and language and their understanding of literacy.

Historical View of Literacy

Children in early civilizations learned about their culture and the skills that they would need to survive in that culture by listening to stories told by their elders, looking at the artifacts created by their culture, and observing the adults in their communities as they performed the tasks necessary for the group to continue. Even in ancient Greece, when survival was no longer a major issue, Socrates argued that observing the world and talking about those observations was the best way to discover the truth in any situation. In fact, Socrates, according to Plato, argued against reading and writing as a means of education because of the artificial nature of written communication (Warmington & Rouse, 1999). However, since the introduction of the modern alphabet in Greece by way of the Phoenicians some three thousand years ago, academic instruction has largely been based on written language (West, 1997). In fact, most educators have looked upon the study of forms of communication that are not language based as frivolous or, at best, supplementary to oral or written language (Salinas, 2002). Visual images, music, and physical activities, as ways of teaching students in *core* curriculum subject areas, have been viewed with scorn. Because academics have tied thinking, particularly critical thinking, to the use of language, for years educational institutions have not given much credence to using non-print materials as a means of communication (Stroupe, 2000).

Verbal-Visual Link

The position that visual and verbal forms of communication should be seen as being on a par is strengthened by the fact that words and images have been linked historically. Some would even say that written communication is, in fact, visual. Unquestionably, the first permanent form of communication developed by humans in pre-historic times was visual. Deep in the caves of what is now France, hunter-gathers blew red pigment onto the walls, telling the stories of successful hunts, dangerous encounters, and humans who shared the dreams of all people on

earth (Clottes & Bahn, 2003). Those images were left to tell a story to be read by other humans millennia later. These early records, some of the first permanent communication created by humans, were visual. No doubt these early humans also engaged in oral communications, telling their stories of the kill around the fire as they ate the fruits of their labors. They also likely told their stories through kinesthetic communications, re-enacting in drama and dance the events of their experiences.

Yet, the oral and kinesthetic expressions of that period have not come down to twenty-first century humans. It is only through visual images that we know the stories these early ancestors of modern humans have to tell. While the cave paintings are evocative images of animal and human encounters, which communicate to humans today on a visceral level, they do not precisely convey a message in the way a modern text does. Writing systems in the modern sense only began to develop as humans moved from hunter-gatherers to farmers and herders. Clearly, the first human marks to be called writing were the product of an agrarian society (Diamond, 1999). In those early years of modern humans' existence as producers of food, people attempted to gain exactness in their written communication with the pictures earlier drawn on cave walls and other objects giving way to pictographs (Daniels & Bright, 1996).

In the early years of the development of written language, written communication in most areas of the world closely resembled visual images. The written language used by the early Egyptians and Chinese came in the form of visual images, pictographs, which originally recreated the features of the objects they referred to. The development of written language as seen in pictographs was merely an extension of the cave pictures used to tell the stories of early human communities. Eventually, commonly used pictures began to be associated with certain ideas. These common symbols used to represent ideas are known as ideographs. After centuries

of use, some ideographs became associated with the sounds of their corresponding words (Daniels & Bright, 1996).

"Written" human communication, in one form or another, has occurred for about 30,000 years, but for about 25,000 of those years, communication was in the form of pictures. Then, about 5,000 years ago the Sumerians began to use pictograms and ideograms (Daniels & Bright, 1996). When it was clear that images were awkward for keeping long, complicated messages, those images became simplified so that they could be more portable. Finally, about 3,000 years ago, the Phoenicians came up with the ideas that, instead of using pictograms and ideograms to represent every possible object and idea in the world, they would use pictures to symbolize the sounds made by speech (Daniels & Bright, 1996). Even when the use of the alphabet under the Greeks became the norm, the verbal and visual were still connected in the visual appearance of the written word. Whether in pictogram, ideogram, or alphabet, words still are composed of lines, curves, open and closed shapes with historical roots as images similar to line drawings. Yet, once marks were linked to the sounds of speech, letters began forever to lose their identity as images.

This divergence of visual and verbal communication came in Western cultures thousands of years ago. While researchers are not sure when the transition from ideographs to representations of speech occurred, ancient inscriptions uncovered at Sinai dating before 1500 B.C.E., use less than thirty signs, a number which indicates that a developing alphabet was replacing the former syllabic system (Kilmon, 2003). Because of the influence of the cultures that developed in the area, which historians often refer to as the fertile crescent, most Western cultures now use marks that represent sound rather than stylized images, as those used in many Asian cultures, to convey thought. Whatever their motivation, the ancestors of Western

civilization, in their decision to use representations of sound rather than pictorial writing, transformed the way people in the Western world express themselves. Into the heart of Europe and later into the New World, the sound-based written language system of the people of the Middle East became the basis for communication and, consequently, education, shunning pictorial forms. According to Skaggs (1981), Western civilization began to take the attitude "'Thou shalt make no graven images, for in the beginning was the word,'" (Skaggs, 1981, p. 23).

Preeminence of Alphabetic Expression

Once alphabets developed, they evolved to represent language throughout the Western world because, unlike images, words are economical, easily combined symbols that have no value except as symbols. Not everyone, however, was able to understand and use the symbols that made up the alphabet of written language, even in their own tongue. It was mainly men in government positions or the clergy that were able to use and understand these visual representations of speech. By the sixteenth century, however, Gutenberg's moveable type printing press had destroyed civic and religious leaders' monopoly over writing (McLuhan, 1962). Printing aided literacy by supplying affordable books that people wanted to read and by standardizing the shape of letters. Readability improved as individual handwriting styles were replaced by the printed letters that appeared the same consistently (Eisenstein, 1983). As Gutenberg's invention increased alphabetic literacy, it also marked a further decline in visual literacy.

Words achieved dominance over pictures. When words were written, rather than printed in the standardized form of the press, language still had individuality that could give the message a sense of style through its visual appearance. It was not until the advent of the computer, however, that the general public was again able to individualize the appearance of letters on the

printed page. Now, writers can make the typeface fonts more individualized again. With the renewed interest in typography and images, visual literacy may allow civilization to come full circle in communication to visual images. Since Barthes (in Heath, 2000) contends that lines are physically appealing while symbols are intellectually appealing, when lines, shapes and colors have meaning, both the body and the intellect are satisfied. On the other hand, if one becomes more interested in the writing of the word itself, as in the case of creative typographers, the word loses some of its meaning.

Just as computers have allowed people to produce more individualized written expression, they have also been a part of the development of a more global, visual language. Until the twentieth century, people contented themselves with having to learn a foreign language if they intended to communicate with groups of people outside their language group. As travel from one continent to another became easier in the last century, the solution to some problems in communication emerged from earlier human history. The answer was, of course, pictographs. Now, signage, computer icons, and various directions appear as pictographs that allow travels in nations that do not speak their native language to understand common signs and icons (Kress & van Leeuwen, 1996). Yet, as modern society has begun to recognize the utility of visual images over written language that mimics the sounds of spoken language, many in education continue to denigrate communicating through images because of the long-standing status that alphabetic expression has had in education (Schirato & Yell, 1996). "[P]rint discourses, face to face classes, paper documents are being displaced by digital discourses, online classes, electronic documents. The former will not entirely disappear, but so too can they not be counted upon to reign hegemonic" (Luke, 1998, p.2). In spite of the importance of other literacies, the status of alphabetic literacy in education as the preeminent literacy persists.

Permanent Communication

Yet, because reading and writing are such complex processes, people do not generally think in alphabetic terms. In fact, Felder & Henriques (1995) concluded that, in order for the thinking to take place, symbolic/alphabetic text must be converted either to visual images or to auditory expression. Thinking is generally only in visual or verbal modes. While some people may visualize words, phrases, or even short passages, people cannot generally hold enough alphabetic images in their minds to actually think in written language. Despite the difficulty that people have with thinking alphabetically, most teachers in secondary and post-secondary schools expect their students to do most of their learning through alphabetic means. Reading is basic to education and has been for hundreds of years. Yet, reading is the least preferred way to learn only 10% of the population) according to learning style inventories that include reading as a preferred learning style (Nooriafshar & Maraseni, 2005). Research has revealed that, on average, 50% to 65% of the population are visual learners; 25% to 30% are auditory learners; 5% to 15% are kinesthetic; and less than 5% are alphabetic learners (those who learn best through reading and writing) (Davis, Nur, & Ruru, 1994).

Despite the general reliance of the majority of people on their vision to think and acquire information, in literate cultures visual representations have been subsumed by verbal expression. In those cultures considered literate cultures, alphabetic visual images represent verbal expression. The visual message does not stand alone as it once did (Kress & van Leeuwen, 1996). Thus, when storytelling and painting were no longer united as they were in the cave paintings, the oral and the visual became less important. True, visual expression and kinesthetic expression were still valued for their aesthetic quality, as in painting and dance, but they no longer found stature as a means of communication. It was not until the Industrial Age brought

technology adequate for recording visual and kinesthetic expression that the two forms again came to be valued for their ability to communicate. The camera, both still and motion, changed perceptions of visual and kinesthetic expression. Now, at the dawn of the Information Age, people once again can integrate the visual, auditory, and kinesthetic means of communication, used since the beginning of human civilization, into a permanent form. These permanent forms of communication, whether aural, visual, or alphabetic, decrease the need for memory because, once something is recorded, people no longer have to remember exactly what happened or what they saw. Moreover, when words and images have equal status within a permanent communication system, information is more effectively passed on, and diverse cultures are better able to understand each other (Arnheim, 1986; Paivio, 1991).

Although society has always placed high value on language, both written and spoken, new technologies over the past two centuries have also emphasized other means of communication (Morgan & Welton 1992). In contemporary western culture, particularly among young people, visual media have gained in popularity at the expense of other media, particularly the written word. "Literacy" now includes more than the ability to read and write. "It connotes an ability to decode and communicate information in a form that can be decoded and communicated by other individuals in a respective community" (Rogalin in Flood, Heath, & Lapp, 1997, p. 865). Because of the saturation of Western culture with visual information, an argument can be made that a literate person is, most importantly, one who can recognize, analyze and use a variety of visual media. With today's Western culture predominantly guided by a visual paradigm, the trend toward visual awareness is now more than just a personal preference (Schirato & Yell, 1996; Jenks, 1995). Visual literacy is no longer an elective but a requirement,

a pre-requisite for functioning in the world. Many organizations, professional and governmental have become aware of the necessity of instructing students in visual lieracy.

Summary

Literacy today cannot be defined the same way that it was one hundred years ago. Media and technology have added dimensions to knowledge that were not possible until the twentieth century. While national organizations such as NCTE and IRA, along with many state legislatures, have recognized the need for instruction in visual literacy, many English/language arts teachers cling to tradition views of literacy instruction despite theorists that have encouraged teachers to look more closely at how students know and how they learn. Psychologists studying learning styles attempted to make educators aware that not all students learn the same way and that many students have strengths and intelligence in areas outside the traditional word- and number-based curricula. Much of the current research concludes that visual literacy should be an integral part of instruction, particularly in the English/language arts classroom. As part of this interest in visual ways of knowing, learning, and communicating, the researcher believes that a thorough study of how English/language arts teachers understand, feel about, and use the concepts of visual literacy in the classroom is vital to progress in providing students with instruction in the types of literacy necessary to function in the twenty-first century and beyond.

CHAPTER 3 - Methodology

Design of Study

The purpose of this chapter is to explain the research methodology used in this study. Using a non-experimental, cross-sectional, closed and open response, survey questionnaire approach, the researcher gathered information by way of a web-based survey. After collecting the data, the researcher analyzed the information to identify gross trends in how educators have received training in visual literacy and how they instruct their students in visual literacy within public secondary English/language arts classrooms in central Kansas. In addition, by disaggregating the data, the research evaluated how teacher characteristics and setting characteristics influence teachers' efforts to address English/language arts standards related to visual literacy. This chapter addresses the research design, survey design, site selection, educational setting, and methodology used to collect data.

Research Questions

Going into the study, the researcher's hypothesis was that most secondary English/language arts teachers had little training in visual literacy instruction and that, therefore, they were resistant to teaching visual literacy along with more traditional literacy concepts. The research questions were designed to determine if that hypothesis was valid and if other issues related to attitudes, understanding and use of visual literacy in the English/language arts classroom were common among secondary English/language arts teachers in the state of Kansas. These questions were of particular interest since Kansas now includes secondary English/language arts standards related to visual literacy.

Primary Question

What attitudes toward, understanding of, and application of visual literacy are apparent among Kansas secondary, English/language arts teachers?

Subsidiary Questions

How do Kansas secondary, English/language arts teachers feel about being expected to teach visually literacy concepts in their classrooms?

What types of training in visual literacy have Kansas secondary, English/language arts teachers received in their teacher education programs?

What types of training in visual literacy have Kansas secondary, English/language arts teachers received in seminars, workshops, or in-services conducted by their district?

Who do Kansas secondary, English/language arts teachers think should be responsible for teaching visual literacy?

How do Kansas secondary, English/language arts teachers define visual literacy?

How do Kansas secondary, English/language arts teachers interpret their role in teaching visual literacy?

How do Kansas secondary, English/language arts teachers adjust their teaching style to use visual literacy concepts?

How do Kansas secondary, English/language arts teachers use visual media in their classrooms?

What types of instruction in visual literacy do English/language arts teachers provide their students?

How do the students of English/language arts teachers use visual literacy concepts in the classroom?

What do English/language arts teachers expect their students' essays to look?

Research Design

By its nature, survey research has always been exploratory in nature (Punch, 2003). When little research has been done on a subject, surveys allow the researcher to establish an overview before research is conducted to probe and analyze the issue with qualitative approaches or experimental, quantitative approaches (Babbie, 1990). Since little information has been gathered about Kansas secondary English/language arts teachers' attitudes toward, understanding of, and use of visual literacy concepts, surveys completed by a purposefully selected group gave the researcher a general picture of how Kansas secondary English/language arts teachers react to being asked to teach visual literacy in their classes.

The research provided insights into the attitudes of secondary English/language arts teachers toward professional and governmental mandates to teach visual literacy. Through the survey, the researcher probed the teachers' attitudes toward being expected to use visual literacy concepts in their classrooms. Also, the researcher discovered if teachers actively engage their students in instruction intended to develop visual literacy skill. The subjects of the research were English/language arts secondary (grades 9-12) teachers in public schools in central Kansas. The area selected for the study included Saline, McPherson, and Reno counties in Kansas because that area is representative of the population of the state as a whole.

The researcher minimized the probability of error due to misunderstanding of the instructions or questions, which would jeopardize the validity of the instrument, by pre-testing the instrument with English faculty in colleges from the geographic area where the secondary respondents were employed. In designing the methodology for the study, the researcher modified the recommendations by List (2002) for mail surveys to fit the electronic format of the study.

List's recommendations, with the researcher's modifications for electronic format are as follows:

1. Include a return envelope
    a. Custom Insights, the electronic survey company that the researcher contracted with, provided an electronic survey on which respondents were only required to click the submit button to automatically report their responses to the researcher.
2. Give a deadline
    a. The researcher asked the respondents in the initial email to complete the survey with seven days, making the initial deadline February 1, 2006.
3. Offer an incentive
    a. When the researcher first contacted the principals of the schools identified, she offered to provide information on visual literacy training and instruction to the schools of the respondents.
    b. English/Language Arts Departments were offered $2 for every survey completed by their faculty.

The researcher also followed the applicable criteria used to evaluate the adequacy of descriptive research outlined by McMillan & Schumacher (1997), which are as follows:

1. The sample, population, and procedures for sampling are clearly described.
2. The sample provides minimally biased results.
3. The instrument is reliable and valid.
4. Graphic presentations of results reflect findings without distortion.
5. Differences between groups are used to identify possible relationships.

Justification for Research Design

Survey research has a long history. Governments since the Roman Empire have conducted "surveys" as they gathered data about the population of their countries. In the United States, census surveys have gone out to citizens every ten years since 1790. Not until technology has provided the possibility for mass communications in the early part of the twentieth century, however, has survey research been such a popular means of getting information for a variety of purposes. In the past fifty years, survey research has become the mainstay of social science research (Bryman, 1988). While uncontrollable factors influence survey research, multi-variant statistical analyses, now possible with specialized computer programs, allow researchers to identify relationships within the data collected (Swain, 2007). In addition, the Internet has made information gathering quicker and less expensive for the researcher (Success, 2004).

Survey research is a form of descriptive research which uses small samples, measures of central tendency, and percentage distributions of variables to identify the current state of the issue at question (Babbie, 1990). This pre-experimental and cross-sectional study is what Dillman (1999) describes as a one time only survey, with no control over the effects of variables and no control groups. The strengths of survey research include the following:

1. Accurate description of specific phenomena,
2. Extensive information from representatives of a population,
3. Accuracy within sampling error ranges,
4. Identification of areas where further research is needed,
5. Information about specific, definable populations from which generalizations can be made (Belson, 1987).

Obvious weaknesses are the following:

1. Difficult to relate survey to similar surveys in other places or at different times,
2. Reliability and validity difficult to establish,
3. Potential errors and biases are numerous,
4. Cooperation is require,
5. Respondents may not reflect the total sample or population (Baker & Mukherjee, 2007).

In recent years survey research has increasing relied on online surveys. Strengths of electronic surveys over traditional surveys most frequently sited are the following:

1. Less expensive
2. Easier to copy and sort data
3. Quicker delivery of survey to recipients
4. More honesty in responses (Tourangeau, 2004; Skitka & Sargis, 2006)

As with any type of research electronic surveys have weaknesses. Among the most often sited are the following:

1. Population and sample limited to those with access to computer and online network.
2. More difficult to guarantee anonymity and confidentiality.
3. More instruction and orientation may be necessary
4. Increased number of technical problems (Tourangeau, 2004; Skitka & Sargis, 2006).

The quality of the information gleaned from surveys depends on the willingness and ability of respondents to answer the questions posed by the researcher, which is influenced by how clearly the survey instructions and questions are stated (Punch, 2003). This particular survey research was designed as a limited, multiple-participant, multiple-site study to explore English/language arts teachers' reaction to mandates by their national organization and their state governing body to teach visual literacy in their classrooms. A survey approach allowed the

researcher to identify general trends across the representative area studied and to isolate characteristics of teachers and sites that might affect how teachers respond to being asked to include instruction in visually literacy concepts in their English/language arts classes.

Survey Design

The survey was designed to explore teachers' understanding and use of the concept of visual literacy, as well as their attitudes toward being asked to include visual literacy instruction in their English/language arts classes. A copy of the survey is included in Appendix C. The first part of the survey, which made up the bulk of the questionnaire, consisted of Likert-scaled questions concerning teachers' attitudes and use of visual literacy as well as their perceptions of their students' attitudes and use of visual literacy concepts. The topic and number of questions on each topic in the Likert-scaled section are shown in table 3.1.

Table 3:1 Survey Questsions

Topic	Attitudes toward teaching visual literacy	Training in visual literacy instruction	Use of visual literacy concepts	Students' competency in visual literacy concepts	Teachers' competency in visual literacy concepts	Instruction of students in visual literacy	Barriers to visual literacy instruction
Number of Questions	11	1 (multiple response)	5	17	7	11	9

The second part of the survey consisted of four open-ended questions. The first three asked about the teachers' general responses to being expected to teach visual literacy in the English/language arts classroom and the influence of technology on both traditional and visual literacy instruction. The final question on the survey was an open-ended question that allowed the teachers to give free responses to anything addressed in the survey. The last part of the survey asked the respondent to give demographic information that the researcher used to

disaggregate data during analysis. These questions identified not only teacher characteristics but also characteristics of the sites in which the teachers work.

Like past media surveys (Lloyd-Kolkin & Tyner, 1988; Yates, 1997), the demographic information on the survey was mainly concerned about the teachers' years of experience and the types of settings in which they taught, as well as the duties they performed outside of the classroom. Questions regarding race, age, and gender were also included to identify demographic differences among groups in their attitudes toward and use of visual literacy concepts. The researcher contracted with Custom Insights, a web-hosting site specializing in survey research, to place the survey on the web. The researcher entered the questions in the template provided by Custom Insights and uploaded it to the Custom Insights site. This method provided an easy "click and go" format for individuals to complete the survey.

Pilot Survey

Before the actual survey was conducted, the research piloted the survey with full-time faculty in English departments of post-secondary institutions in the area in which the high schools selected for the actual study are located. Located within the area selected are three private four-year colleges, two private two-year colleges, and one public two-year college. The surveys were completed online by the college faculty during the fall semester of 2005. The researcher then met with faculty members to ascertain their reactions to the survey. The following questions were asked during interviews:

1. How did the electronic format influence the time you took to complete the survey?
2. How did the electronic format influence your willingness or unwillingness to complete the survey?

3. How did the electronic format influence your reaction to the questions on use of non-traditional formats?
4. What frustrations did you face from the electronic format?
5. How did the visual appearance of the survey influence your attitude?
6. How could the sequence of questions be improved?
7. How could the questions be clarified?
8. What questions did not seem relevant to the topic being researched?
9. What questions in the demographic sections should be worded to reflect more sensitivity?
10. Did taking the survey cause you to think more seriously about your use of visual literacy concepts in your classroom?

The English faculty made positive comments about the ease and speed with which the electronic survey could be completed and with the way in which the questions were phrased. Only those faculty who were not familiar with electronic surveys faced frustration with the electronic format. Although none of the pilot participants failed to complete the survey because of their frustration, it is possible that actual participants who were not comfortable with the electronic format may not have completed the survey. This may create a bias the information gleaned from the survey against those who do not work with electronic media regularly. More encouraging, none of the pilot participants felt the survey was inappropriate or of little value in understanding the changing roles of English/language arts teachers on the secondary level. Overall, the perception of faculty members was that the survey was enlightening, increasing their awareness of issues regarding teaching visual literacy in public secondary English/language arts classes. Most also indicated that taking the survey caused them to think seriously about their own approach to visual literacy instruction. Even though the pilot participants indicated no need for

major revisions, the feedback from the pilot study led to the researcher refining and rearranging questions for the actual survey of public secondary English/language arts instructors in central Kansas.

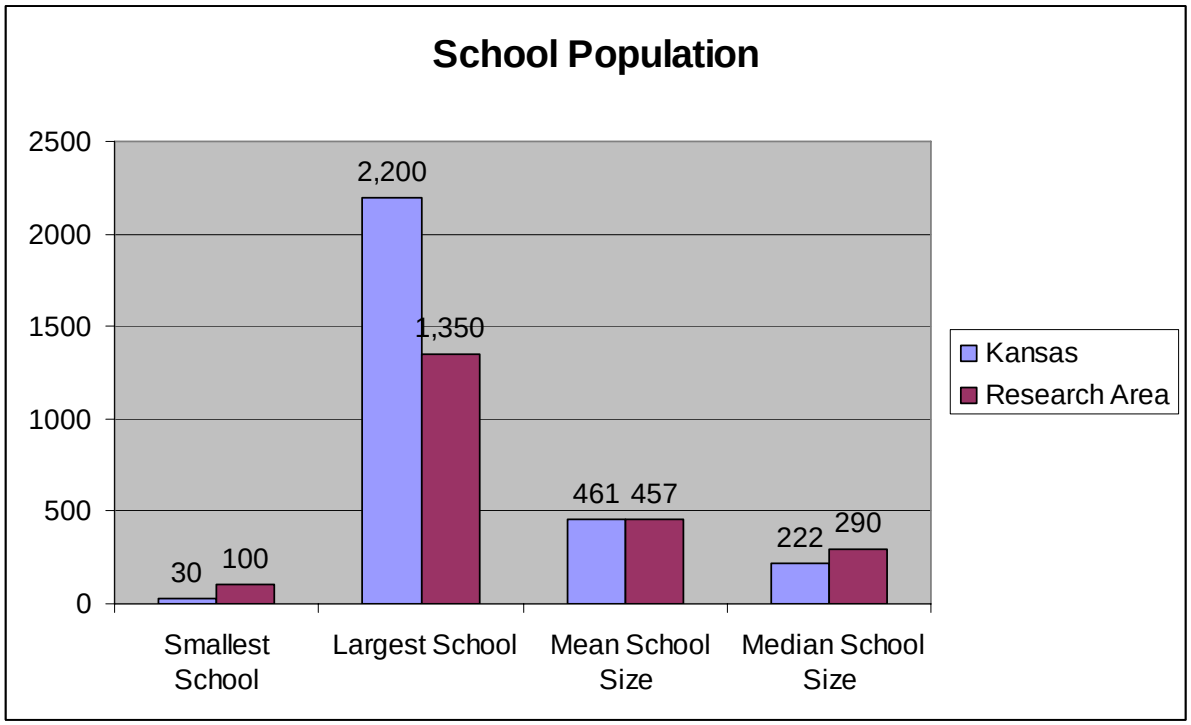
Site Selection

The area selected for the survey was identified because it is representative of the population of Kansas as a whole. In addition, the counties are contiguous, which made it easier for the researcher to visit the sites identified to gather and share research. As indicated, the three-county area selected for the study is representative of all but the most urban communities and high schools in the state of Kansas. The total population of the three-county area is 147,941, which is approximately 6% of the 2,688,418 population of the entire state of Kansas but 11% of the population of the state excluding the Kansas City and Wichita metropolitan areas (U.S. Census, 2000). The various communities in the area reflect the size of communities in most of the state. Communities in the area selected for the study range in size from less than 100 to over 45,000 (U.S. Census, 2000). Although the communities in Kansas overall rage in size form less than 100 to over 300,000, less than ten cities in Kansas have populations over 45,000 and all but one of those larger urban centers are located in the northeastern corner of the state near the Missouri boarder (U.S. Census, 2000). Therefore, the towns located in the study area reflect the sizes of communities generally found in Kansas outside the major metropolitan areas of the state. Even though the research area does not include in major metropolitan areas, it does include large towns, small communities, and rural areas, which is indicative of the demographics of most of the state.

More importantly, the high schools in the research area also approximate the size of the majority of high schools in Kansas. The population of high schools in the study range from

approximately 100 to approximately 1350, with a mean population of 457 and a median population of 290. Public high schools in the state, as a whole, range in student population from approximately 30 to approximately 2200, with a mean population of 461 and a median 222 population of (KSDE, 2003) a shown in figure 3.1. The high schools in the research area also cover all of the size classifications set by the Kansas High Schools Activities Association (KHSAA) from 1A to 6A. Therefore, while the schools in the area selected for the study have less variation in size than the schools in the state as a whole, they do approximate the size of the majority of high schools in Kansas, as illustrated in Figure 3.1, with the exception of the large 6A schools located in the metropolitan areas of Kansas.

Figure 3:1 Comparison of high school populations of area studied and state of Kansas



Educational Setting

The three counties have fifteen high schools. Those high schools range from 1A to 6A, the full range of size determined by the Kansas State High School Activities Association. These

high schools and their demographics are also included in Appendix E. The English curricula in the schools vary slightly, but students generally follow the pattern of studying different genre in their freshman year, world literature in their sophomore year, American literature in their junior year, and British literature in their senior year. Some alternative courses are offered for students who do not intend to continue their education after high school. In addition to the courses generally offered, many of the high schools allow seniors to take advanced placement or college English composition courses during their junior or senior years. The college courses are generally taken for dual credit through a nearby community college or a local 4-year college, taught either by qualified high school teachers at the students' school or by college professors at the high school or at local colleges.

Data Collection

At the beginning of the second semester 2006, the researcher contacted the principals of the schools in the area selected by telephone, at the numbers listed on the various high schools' websites, asking for permission to survey the English/language arts teachers at the school and offering to share information on the results of the survey at department meetings or in-services. All individuals listed as full-time instructors in English/language arts on the secondary level in the public high schools in the three counties were sent emails (Appendix A) asking them to complete the survey. The e-mail identified the purpose of the study, asking the instructor to log-on to Custom Insights, click on the secure location where the survey was located, complete the survey, and submit it. As incentive for the teachers to complete the survey, the researcher offered $2 for each instructor that completed the survey.

The researcher, as administrator of the site, could then access the information to determine how many instructors had completed the survey and what their responses were.

Following the procedure outlined by Fowler (2002), after February 15, 2006, the date by which respondents were asked to complete the survey, another email was sent reminding subjects of the survey. On March 1, 2006, the researcher visited the schools identified. She deliver the $2 per respondents along with cinnamon rolls and juice to the English department chairs and asked them to encourage those who had not completed the survey to do so by March 15, 2006, when the data from the survey would be finalized and analysis of the data would begin. A calendar of the data collection process appears in table 3.2 below.

Table 3:2 Timeline of data collection process

January 15, 2006	**February 1, 2006**	**February 15, 2006**	**March 1, 2006**	**March 15, 2006**
Principals contacted by telephone	English/language arts teachers sent initial email	Non-respondents sent reminder	Department chairs visited with reminder too non-respondents	Data analysis began

After the date set for final submission of surveys, March 15, 2006, the researcher began analyzing the data, particularly looking for significant differences in responses among various demographic groups. Surveys were disaggregated by 1) gender, 2) race, 3) age, 4) level of education and 5) years of teaching experience. In addition, the data were analyzed according to the types of schools and the schools' demographics. The researcher evaluated the data for significance in each of the seven areas on which the data was disaggregated and reviewed the means of the responses on each item in the survey.

Data Analysis

The researcher downloaded the data from Custom Insights and coded the responses. The questions in the Likert-scaled portion were coded according to the numbers corresponding to the responses from 4 being the highest to 1 being the lowest. Means and standards deviations for

each item were then determined. The researchers also calculated the percent of responses in the 3 to 4 range for each question. For comparative purpose, the researcher also figured the mean of each question as a percent of the possible 4. Free responses were analyzed for their content, with the frequency of similar responses recorded.

Because the question on training in visual literacy instruction was relevant to an important research question for the study, care was given to analyze the question. The question on training was a multiple-response question, which meant that some of those surveyed responded to a range of statements. Since those who responded to several statements could skew the data if most people surveyed only responded to one or a few statements, the research also looked at the responses to this question individually for each person surveyed and coded each person's responses. In addition to calculating the responses to each statement, the researcher coded the responses to get a clearer picture of the types of training that the respondents had received in visually literacy instruction. The results, then, revealed more precise information on the training in visual literacy provided to prospective English/language arts teachers by teacher preparatory institutions in the state. The coding determined whether individuals had received formal, informal or no training in visual literacy instruction, based on the statement with the highest rating to which each person surveyed responded positively. Formal training indicated that the respondent had received training in visual literacy instruction from a post-secondary institution in a specific class or unit within a class. Informal training indicated that the respondent had received limited training in visual literacy instruction from a post-secondary institution as a student or from a secondary institution as an employee in the form of a structured discussion or in-service training session. The question was coded according to the method shown in Table 3.2.

Table 3:3 Coding for statements on training in visual literacy instruction

STATEMENT	TYPE OF TRAINING	CODING SCORE
I was required to take an undergraduate course in visual literacy.	Formal	6
I was required to take a graduate course in visual literacy.	Formal	6
I took an elective undergraduate course in visual literacy.	Formal	6
I took an elective graduate course in visual literacy.	Formal	6
A unit in visual literacy was included in my required undergraduate classes.	Formal	5
A unit in visual literacy was included in my required graduate classes.	Formal	5
A unit in visual literacy was included in my elective undergraduate classes.	Formal	5
A unit in visual literacy was included in my elective graduate classes.	Formal	5
Visual literacy was mentioned in my required undergraduate classes.	Informal	4
Visual literacy was mentioned in my required graduate classes.	Informal	4
Visual literacy was mentioned in my elective undergraduate classes.	Informal	4
Visual literacy was mentioned in my elective graduate classes.	Informal	4
I received training in visual literacy at an in-service or seminar.	Informal	3
I learned about visual literacy informally through others.	Informal	2
I learned about visual literacy through my own study.	Informal	1
I received no undergraduate training in visual literacy.	None	0
I received no graduate training in visual literacy.	None	0
I have no training in visual literacy, either formal or informal.	None	0

After coding the responses, the researcher then analyzed the data. From the statistical output generated, the researcher determined the mean response and standard deviation for each question and each group of questions. The researcher then disaggregated the data by demographics to determine how teacher characteristics and site characteristics influenced the

teachers' attitudes toward, use of, and understanding of visual literacy. When the data was disaggregated by age of respondent, the researcher expected younger teachers to be more familiar with and more likely to use concepts of visual literacy in their classrooms. Also, when divided by geographic location, the researcher expected teachers in more populated areas to be more positively predisposed to using visual literacy techniques than teachers in rural areas. If teachers had technology available to them in the classroom, the researcher expected them to use teaching methods incorporating visual literacy more than those who did not have immediate access to technology.

Overall, the researcher expected some disconnect between teachers' understanding of the concepts of visual literacy and their use of visual literacy techniques. Some of the assumptions of the research were:

1. biases accounted for,
2. sample information accurate and
3. valid measure.

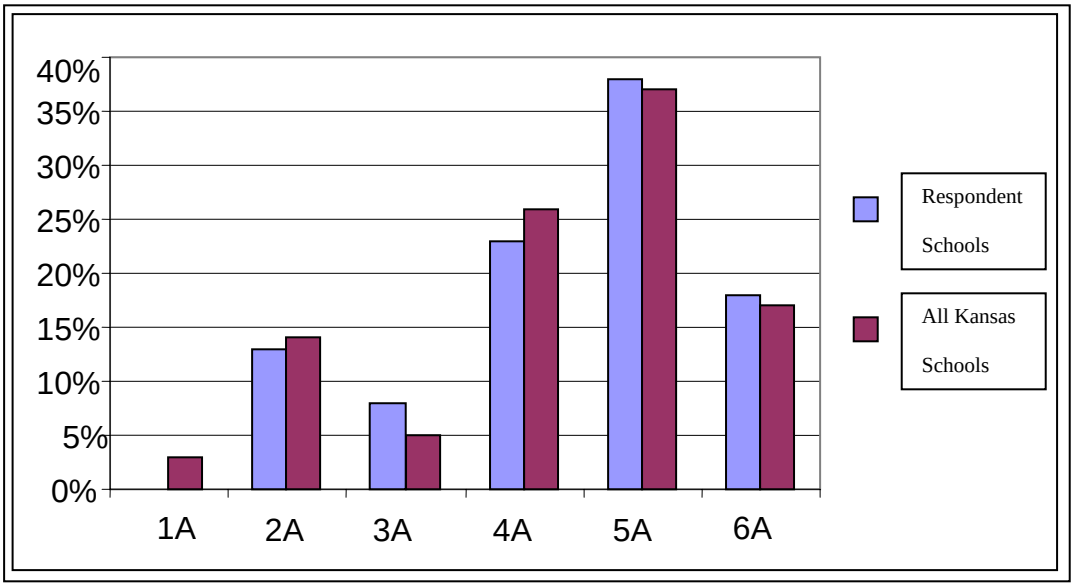
Since this study focused on instruction in visual literacy in Kansas English/language arts high school classrooms, the researcher assumed that more instruction would be related to reading and writing print text than to studying visual images. The instruction in visual literacy in the English/language arts classroom, the researcher assumed, would be incidental to more traditional literacy instruction. Furthermore, because this study chose to use subjects in a limited geographic area, the researcher assumed that the results might not apply to other populations. Urban populations, in particular, would not be likely to respond in the same way as the suburban and rural populations of the study.

CHAPTER 4 - Findings

Demographics

Each year, the Kansas State High School Activities Association (KSHSAA) classifies all schools that participate in intermural co- or extra-curricular programs in the state according to the number of students attending those schools in grades 10-12. The classifications range from 1A through 6A, with 1A being the schools with the lowest enrollment. While the three counties in central Kansas in which the surveyed population of teaches has fewer 1A-3A schools than western Kansas, it does have some schools in all three of those classifications (KSHSAA, 2006). However, no schools in the 1A classification from the area surveyed responded. In addition, while the three Kansas counties surveyed have fewer 6A schools than northeastern Kansas, those counties still have one school in that classification as well. Although there is only one small 6A school in the survey area, several instructors from that school did respond. Overall, the percent of teachers responding from the various sized schools parallels the proportion of students in those size classifications across the state. Although a slightly higher proportion of teachers from 3A, 5A, and 6A schools responded and a slightly lower proportion from 1A, 2A, and 4A schools, those differences are not statistically significant. As a result of this comparison, the researcher felt confident that the schools at which the respondents taught reflect the size of schools across the state of Kansas. The data in figure 4.1 show a comparison of the percent of students in school from each classification at which respondents taught with the percent of students at schools in each classification across the state (KHSAA, 2006).

Figure 4:1 Percent of teachers responding from various size schools compared with the percent of students in each school classification across the state of Kansas

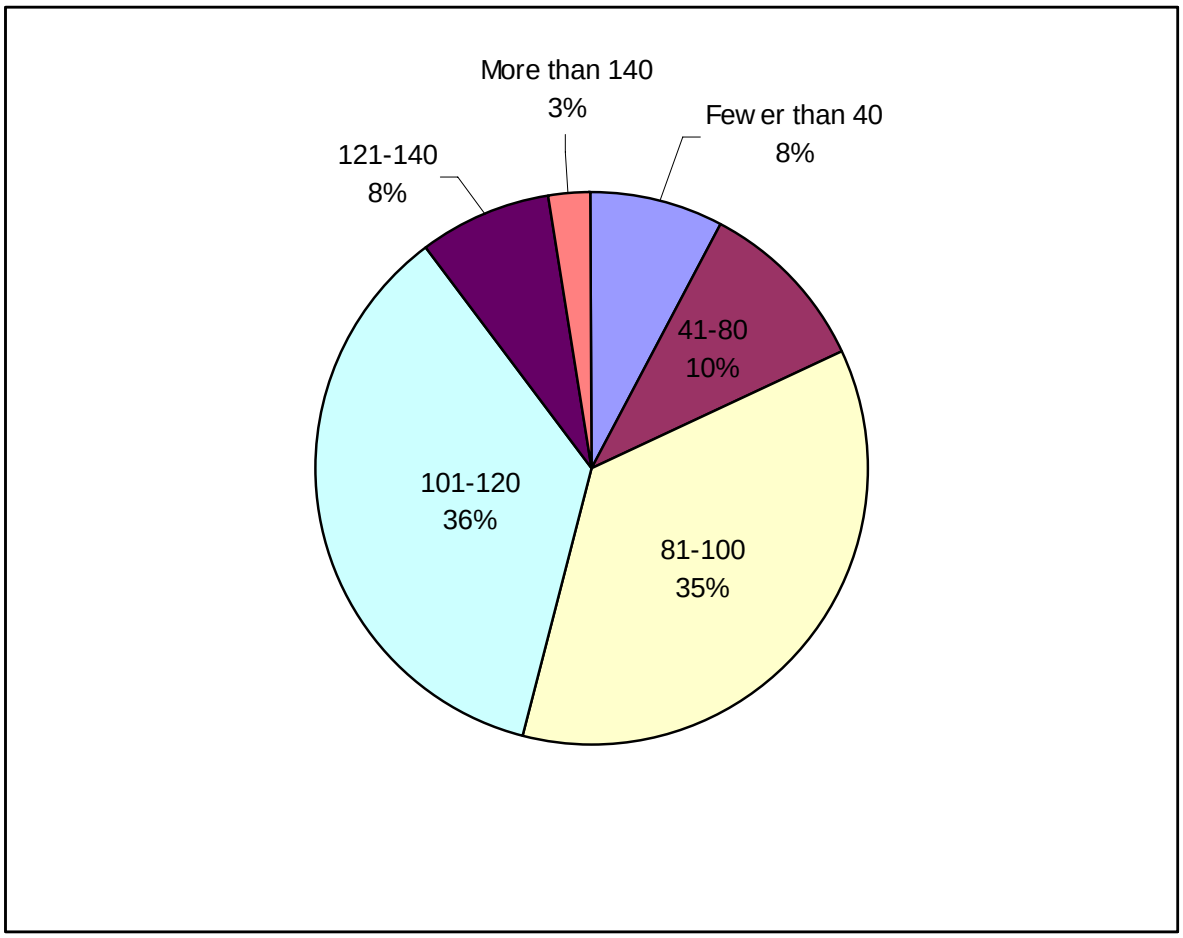


Although the size of the schools in which the teachers surveyed taught did not exactly correspond to the size of schools throughout the state, the schools do adequately represent the size of the state's schools as illustrated.

Paralleling the size of schools reported is the number of students taught each semester by the teachers surveyed. Seventy-two percent of respondents reported having 80 to120 students each semester (15 to 30 per class). Only 8% (generally those instructors from smaller schools) reported having fewer than 40 students per semester (fewer than 10 per class). On the other end of the spectrum, only 11% (concentrated in the 6A and 5A schools) taught over 120 students each semester (over 30 per class). The most common numbers (15 to 30 per class) represented class sizes recommended by many professional organizations. The state of Kansas has recognized that smaller classes in schools in the lower classifications may not be cost effective and that larger classes in schools in the upper classifications may not be instructionally effective. Therefore, the overall class sizes reported in the survey represented what would be expected

throughout the state of Kansas. The data in figure 4.2 illustrate the percentage of instructors who reported having various numbers of students in their classes each semester.

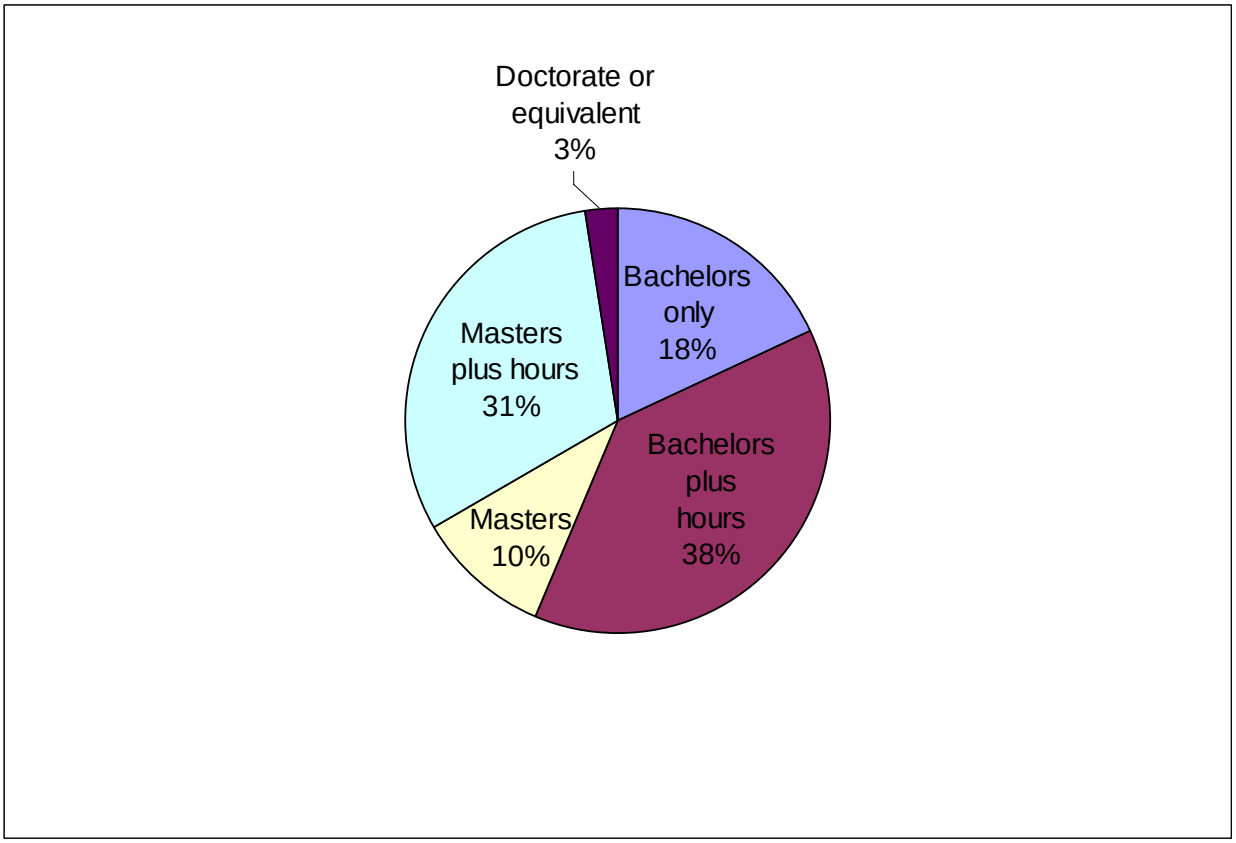
Figure 4:2 Number of Students Taught by Respondents Per Semester



Not only do the instructors who responded to the survey represent the range of size of schools in Kansas but also the range of education levels usually found in public secondary schools in the state. The largest percentage consisted of teachers with a bachelors plus hours (38%), followed closely by those with masters plus hours (31%). The smallest percent of teachers responding had terminal degrees, a doctorate or equivalent (3%). Those with just a master degree also represented a relatively small percent (10%) of the respondents. Since those with a masters plus hours represented a relatively large proportion of the respondents, it seems

evident that those who completed their masters generally went on to take additional graduate hours. Yet, few teaching in secondary schools surveyed (1) had completed her doctorate, perhaps in part because of the relatively poor financial return that earning a terminal degree produces in most public secondary schools or because of post-secondary positions open to those with a doctorate. Those who responded that they had only a bachelor (18%) tended to be younger and had less teaching experience. The data in figure 4.3 show the proportion of teachers at each educational level.

Figure 4:3 Percent of Respondents at Various Educational Levels



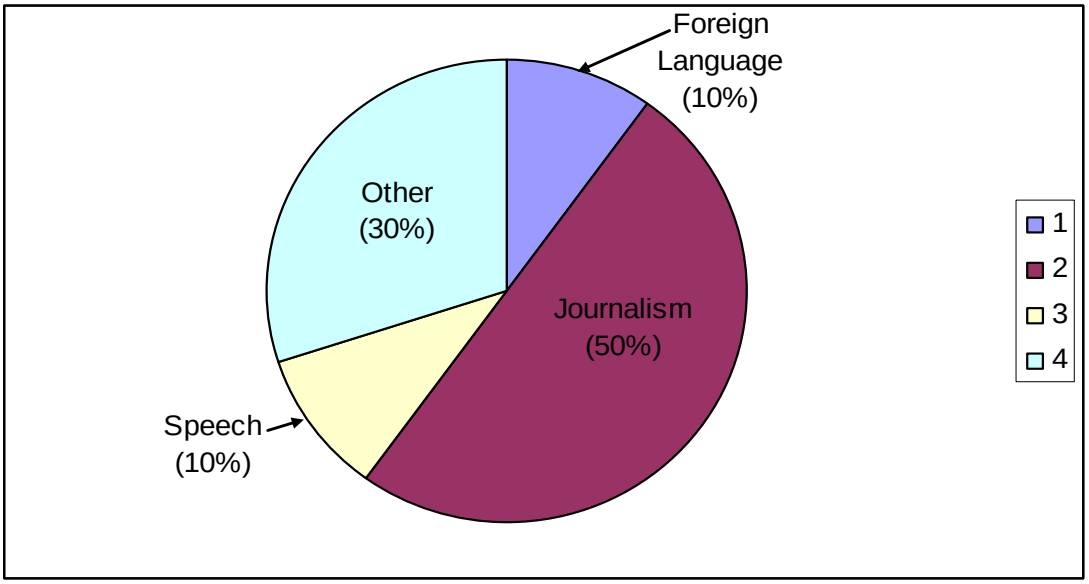
Those primarily teaching sophomore, juniors, and seniors responded in similar proportions—approximately one fourth in each category. However, only 10% of respondents indicated that they were primarily responsible for teaching freshmen, the same percent as those

who reported primary teaching responsibilities at the K-8 level. Since teachers listed as teaching in the high school were those who were invited to respond to the survey, some people teaching at the freshman level may have been excluded. Since some smaller schools house the middle and high school grades together, those who teach at the elementary level and have only a limited number of sections of high school freshmen may not have been part of the group invited to respond to the survey. Despite the slight anomaly in the percent of respondents who reported primary teaching responsibilities at the freshman level, the respondents represent the range of grade levels taught in high schools across the state of Kansas.

Just as the proportion of teachers whose primary duties were at various grade levels was generally predictable, so were the other duties that teachers reported. Twenty-seven percent of respondents reported teaching other courses in addition to English/language arts. As might be expected, most of those duties were related to areas traditionally associated with the English/language arts—writing and speaking. The highest proportion of the twenty-seven percent reporting other classroom duties (50%) also taught journalism. Speech and foreign language duties were each reported by 10 percent of those having other teaching duties. The remaining 30 percent of other teaching duties were in areas other than speech, journalism, and foreign language. Those duties were as diverse as mathematics, computer science, history, and business. Even though half of those indicating that they taught courses other than English/language arts were responsible for teaching journalism, that number constituted only 13.5 percent of the total population of respondents. Since those teaching journalism received more training in visual literacy, expecting English/language arts teachers to take journalism courses as a part of their training would not only better prepare them for teaching courses that they might be assigned to, particularly in smaller schools, but also would help them better

understand the demands for visual literacy instruction from the state government and professional organizations. The data in figure 4.4 illustrate the distribution of other teaching duties of English/language arts teachers responding to the survey.

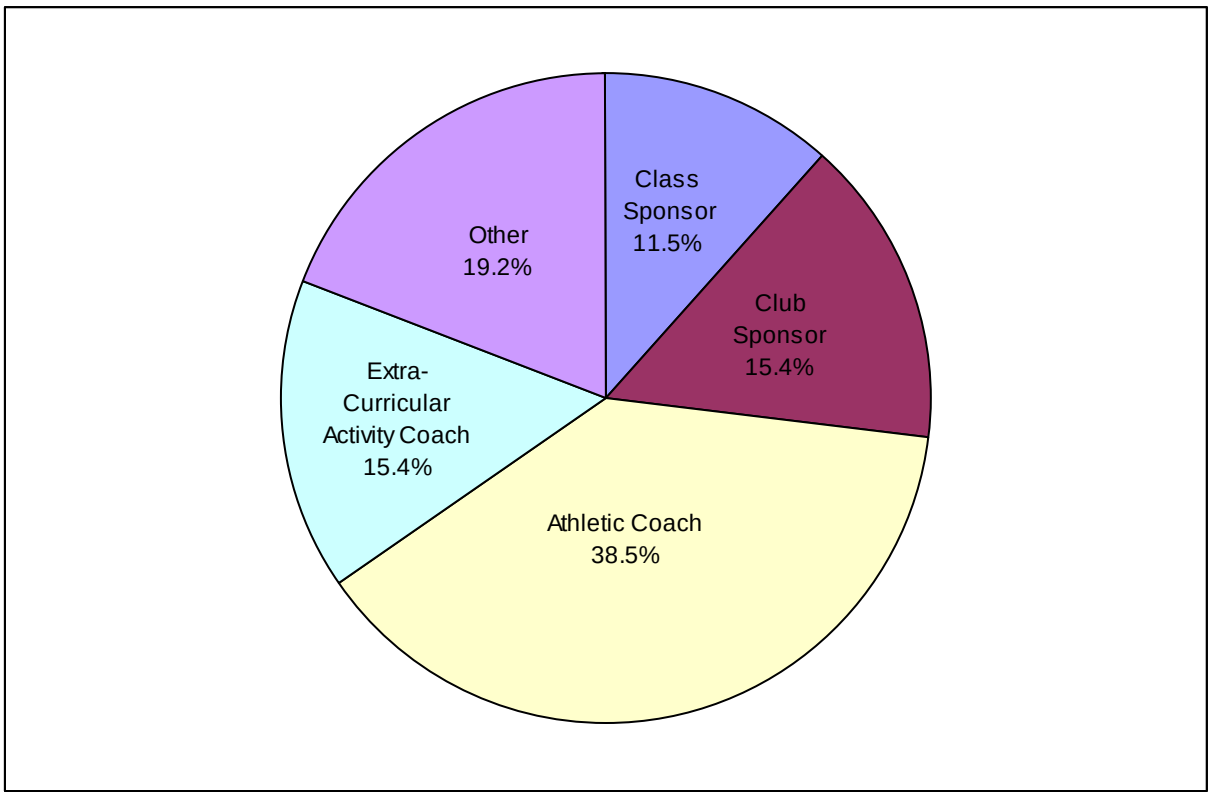
Figure 4:4 Percent of English/Language Arts Teachers with Other Teaching Duties Who Are Assigned Classes in Other Areas.



Even more respondents than those reporting other classroom duties stated that they had school duties outside the classroom. A majority of respondents (67%) identified such duties. Because the area of Kansas surveyed is largely rural with smaller schools, teachers are often expected to take on additional duties outside of the classroom. Of those reporting outside-of-classroom duties, 38.5 percent pointed to duties coaching various athletic teams. That figures reflects the emphasis on athletics as part of the larger community's activities in many of the smaller schools in Kansas. Teachers in smaller, rural schools in Kansas are often expected to supervise out of class activities as part of their civic duty to the community as a whole. Not all of those duties involve athletics. Respondents indicated duties outside the classroom other than athletics, including sponsoring clubs or grade-level classes and supervising non-athletic extra-

curricular activities. These responsibilities in some cases enhanced teachers' awareness and use of visual literacy while in other cases they detracted. Data in figure 4.5 show the proportion of teachers reporting outside duties in various types of roles.

Figure 4:5 Percent of Teachers with Various School Responsibilities outside the Classroom



Just as the teachers responding were involved in a variety of activities, they also came from a variety of age groups and teaching experience, but their age groups did not necessarily reflective of their years of teaching experience. While only 40 percent of the respondents were 35 years old or younger, 49 percent reported having ten or fewer years of teaching experience. At the other end of the scale, 13 percent of respondents stated that they were 56 or older while 10 percent claimed 30 or more years of teaching experience. Overall the correlation between the two variables was .85 on the Pearson r scale. A closer look at the comparison of the two measures, however, indicated either that attrition from English/language arts education may

occur most heavy when teachers are between the ages of 36 and 55 or that teachers are entering the profession past the traditional 21 to 24 years of age. Although 47 percent of respondents indicated that they fell in the 36 to 55 age range, only 23 percent of the respondents reported 16-30 years of teaching experience. The data in table 4.1 show the correlation between the respondents' ages and their years of teaching experience.

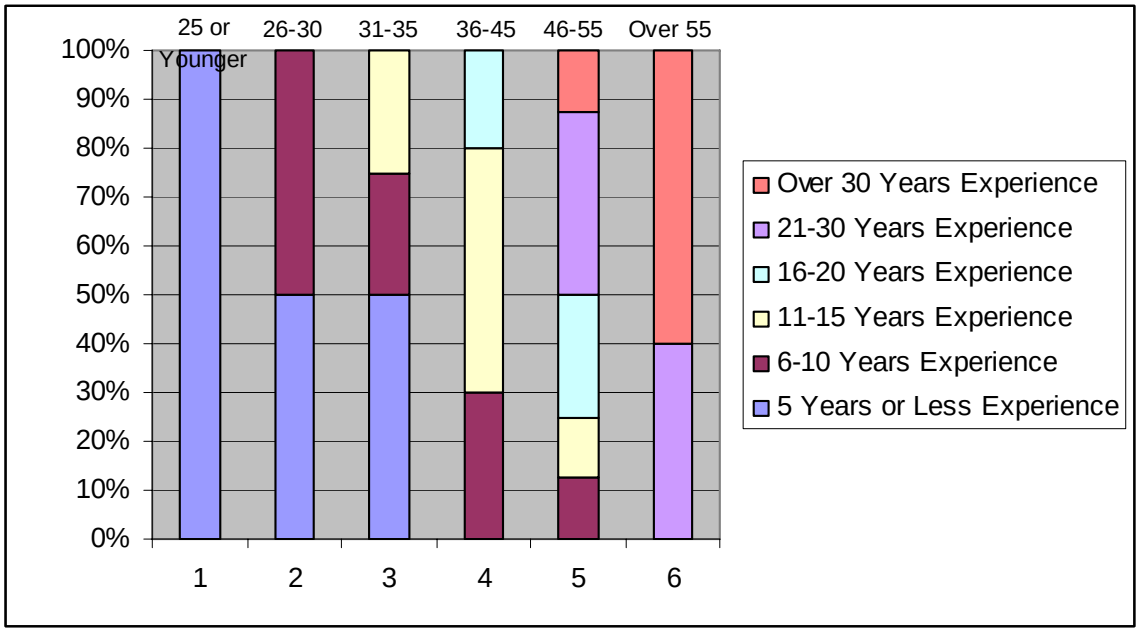
Table 4:1 Respondents' Ages Compared to Their Years of Teaching Experience

Age	Years of Teaching Experience						
	5 or less	6-10	11-15	16-20	21-30	Over 30	Total
25 or Younger	6	3	2	0	0	0	11
26-30	0	3	1	3	1	0	8
31-35	0	0	1	5	1	0	7
36-45	0	0	0	2	2	0	4
46-55	0	0	0	0	3	2	5
Over 55	0	0	0	0	1	3	4
Total	6	6	4	10	8	5	39

The data in figures 4.6 graphically illustrate the correlation giving the number of respondents in each age group that stated a specific range of years of experience. Those 46 to 55 had the greatest range of years of experience, from six years to over thirty. Those 25 or younger, as would be expected, had the least variation, with all having five years or less experience. One interesting finding was that half of the respondents ages 31 to 35 had five years or less of experience, indicating that significant numbers of teachers were in their second career or had returned to work after a relatively long period of not being employed outside the home. This trend was also apparent in the percentage of respondents ages 36 to 55 who had only six to ten

years of teaching experience. Those over 55, however, were long-term teachers, with none having few than 21 years of teaching experience.

Figure 4:6 Percent of Respondents at Various Ages with Specified Years of Teaching Experience



While some of the difference between age and years of experience were skewed in some areas, the two most anomalous measures in the demographic area were gender and race. Of those who responded, 69 percent were female. This figure may also be reflective of more females entering and remaining in English/language arts instruction and teaching in general. The unbalanced nature of respondents in terms of race, in part, reflected the racial make up of the geographic region surveyed. Of the respondents, 69 percent reported their racial/ethnic background as European American and 3 percent Native American. The remaining 28 percent listed either "other" or did not respond to the question. The complete lack of African American and Asian American respondents did not necessarily reflect the make up of the regional populations, but it did reflect the racial makeup of English/language arts teachers in the area. Just

as the demographic information on the survey indicated a variety of backgrounds, knowledge, and experience, the survey also revealed mixed knowledge and use of visual literacy among secondary English/language arts instructors in Kansas classrooms.

Because mandates from the state of Kansas and national English/language arts education organizations emphasize the importance of teaching visual literacy in additional to traditional literacies in the English/language arts classroom, the survey first examined if English/language arts teachers "bought in" to the idea that visual literacy instruction was important and that English/language arts teachers, at least in part, were responsible for teaching visual literacy.

Responsibility for Teaching Visual Literacy

The question of the importance of visual literacy instruction had numerous aspects. Three of the most important were the following:

1. Do teachers think that using visuals is important in helping students learn?
2. Do teachers believe that they are equipped and responsible for teaching students how to interpret and use visuals to communicate?
3. Do teachers encourage their students to use visuals to communicate?

The areas that most of those surveyed agreed on were the necessity for all teachers to use visual elements in their instruction and to teach students how to use and interpret visual elements. Regarding their responsibility for teaching visual literacy, respondents were less certain. Thirty-five of the thirty-nine instructors surveyed (89.74%) agreed that all disciplines should instruct students how to understand and interpret visual elements. On a four-point scale, the item that asked instructors to agree or disagree with the statement, "All disciplines should teach students how to understand visual materials" received an average rating of 3.28 with a standard deviation of .78. A slightly weaker, but still strong agreement resulted from instructors'

responses to the statement, “All disciplines should teach students how to present visual materials.” That item received an average rating of 3.08 with a standard deviation of .74, with 81.58 percent agreeing with the statement. Yet, teachers were less consistent in their responses as to who should be responsible for that instruction.

When English/language arts instructors were asked about specific disciplines’ responsibility for teaching visual literacy, the only discipline that over 50 percent of the instructors agreed should have primary responsibility for visual literacy instruction was visual arts. While visual arts instructors’ being primarily responsible for visual literacy instruction received a higher rating, more people agreed that visual literacy instruction should be done in a formal class with formally trained instructors. The responses to visual arts teachers being primarily responsible for teaching visual literacy may reflect some misunderstanding about how visual literacy differs from appreciation of visual expression in the sense usually taught in visual arts classrooms.

Among the groups rated lowest as needing to have primary responsibility for teaching visual literacy were administrators and English/language arts teachers. While the English/language arts teachers did not want the administration to be responsible for visual literacy instruction, neither did they want to be the ones primarily charged with such instruction. Only two of those surveyed strongly agreed that instruction in visual literacy should primarily be the responsibility of English/language arts teachers even though the state of Kansas and professional English/language arts teaching organizations clearly believe that teaching visual literacy should be part of the required instruction in English/language arts classrooms.

While English/language arts teachers surveyed supported instruction in visual literacy in the abstract, they were less certain about the specifics of how instruction in visual literacy should

be accomplished. Moreover, they were even more ambivalent about their own discipline taking the lead in visual literacy instruction. Data in table 4.1 show the mean scores for each item in the section on responsibility for visual literacy instruction.

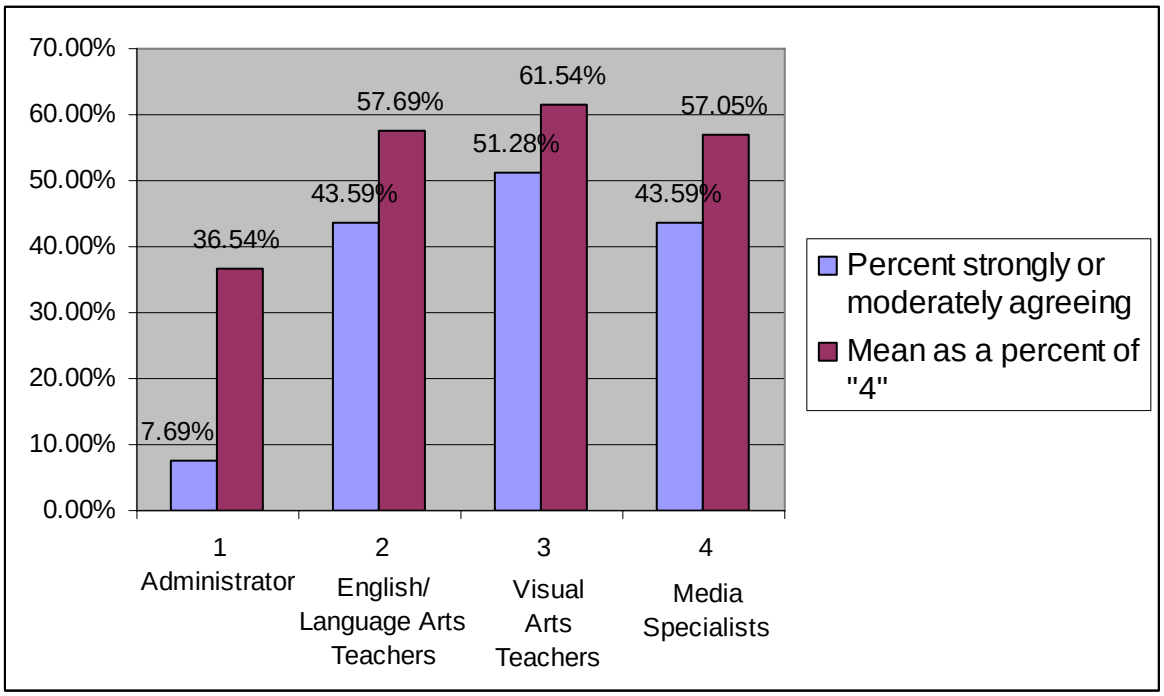
Table 4:2 Mean Scores, on a 4-point scale of questions on responsibility for teaching visual literacy

Responsibility for visual literacy instruction	**Mean**
1. Teachers should use visual materials their classroom instruction.	**3.67**
2. Teachers should instruct students how to understand visual materials.	**3.56**
3. Teachers should instruct students how to present visual materials.	**3.39**
4. Visual literacy should be taught as a formal class.	**2.51**
5. Instruction in visual literacy should receive as much time as instruction in traditional literacy.	**2.31**
6. All disciplines should teach students how to understand visual materials.	**3.28**
7. All disciplines should teach students how to present visual materials.	**3.08**
8. Administrators should have primary responsibility for instructing students in visual literacy.	**1.54**
9. English/Language Arts teachers should have primary responsibility for instructing students in visual literacy.	**2.31**
10. Visual Arts teachers should have primary responsibility for instructing students in visual literacy.	**2.59**
11. Media Specialists should have primary responsibility for instructing students in visual literacy.	**2.41**

Data in figure 4.7 illustrate graphically the average ratings received by each statement regarding responsibility for teaching visual literacy by comparing the percent of respondents who

moderately or strongly agreed with the statement to the average ratings expressed as percents of a possible “4”.

Figure 4:7 Percent who strongly or moderately agreed with each statement about who should have primary responsibility for teaching visual literacy compared to the mean response to each statement as a percent of “4”.



The greatest discrepancy between the two measures occurred on the statement, “Administrators should have primary responsibility for instructing students in visual literacy.” Agreement on English/language arts teachers or media specialists needing to be primarily responsible for teaching visual literacy were about equal. The percent who believed that visual arts teachers should be primarily responsible for visual literacy instruction was the highest of any other specific group. However, the five statements with the highest ratings by both measures were the first three statements, which dealt with instruction in visual literacy in general terms, asking respondents about visual literacy as a more abstract concept or as the responsibility of all

disciplines, with little specificity. The more specific questions about visual arts teachers', English/language arts teachers', and media specialists' responsibility for visual literacy instruction received less enthusiastic responses. Also, as might be expected from English/language arts teachers, the instructors surveyed generally disagreed that visual literacy instruction should receive as much time as instruction in traditional literacy. Part of the reason that English/language arts teachers did not see visual literacy instruction as on a par with traditional literacy instruction likely was related to their own educational experience. Traditionally English/language arts education has consisted mainly of courses in composition and literature, with as few as one course in specific teaching methods for English/language arts teachers.

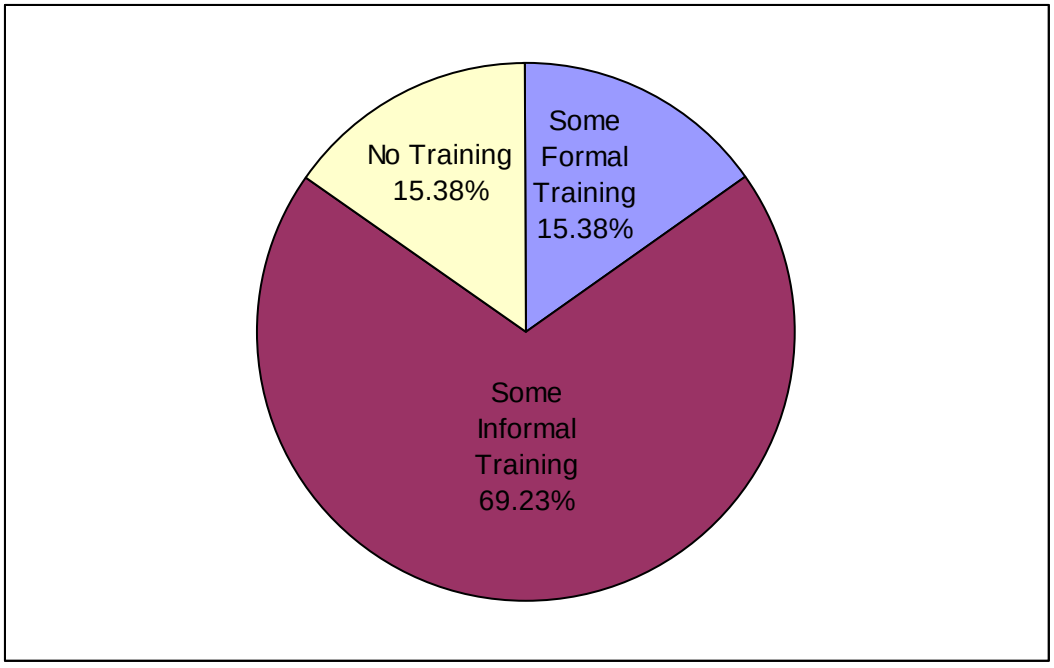
Training in Visual Literacy Instruction

English/language arts teachers may not feel that visual literacy instruction should incorporated with traditional literacy instruction because of their own lack of training in visual literacy instruction. As part of the preparation for English/language arts teacher, colleges and universities, according to those surveyed, provided little training in how to instruct students in visual literacy. When the instructors surveyed were asked about their training in visual literacy instruction, only 13 percent indicated that they were either required or elected to take formal courses in visual literacy instruction as part of their undergraduate or graduate programs. Somewhat more, but still a small portion (19 percent), indicated that a unit in visual literacy instruction was included in courses that they took, either required or elective, in their undergraduate or graduate programs. Even when asked if visual literacy instruction was mentioned in any of their required or elective undergraduate or graduate courses, only 37 percent recalled that teaching visual literacy in English/language arts classes received any attention.

While colleges and universities may not have spend extensive time discussing visual literacy with the prospective English/language arts teachers, school districts provided little more visual literacy instruction training through in-services or seminars. Only 23 percent of the instructors indicated that they had received training in visual literacy instruction after starting their teaching careers, most of whom were from a single district. The most common way for the teachers surveyed to learn about visual literacy instruction was informally through colleagues or independent study. These two methods were identified by 77 percent of those surveyed. Even though a significant percent of instructors had knowledge of visual literacy instruction, received through informal venues, 21 percent stated that they had received no training, either formal or informal, in visual literacy instruction. Since respondents were asked to mark all that apply, the responses were coded according to the data in table 3.2. Based on this coding, responses were then analyzed according to the highest coding score for each respondent.

Respondents were assigned the highest level from formal to none on their responses to the statements about visual literacy instruction. According to the analysis of the highest coded response for each individual, an equal number of respondents (6) had formal training as had no training in visual literacy instruction. Those who indicated formal training in visual literacy instruction at the undergraduate level were those who had entered the teaching profession within the past five years. The remaining twenty-seven respondents had some informal training in visual literacy instruction, generally through self-study or discussion with colleagues. The type of informal training varied according to the demographics of the respondents, with male getting informal training through independent study and females through discussion with colleagues. The percent of respondents in each category is illustrated by the data in figure 4.8.

Figure 4:8 Percent of respondents receiving formal, informal or no training in visual literacy instruction



Use of Visuals

Despite their lack of training, almost all teachers surveyed used visual literacy concepts in their classrooms and in their teaching. Yet, their uses tended to be more traditional in nature. All but one stated that they either "always" or "usually" had two-dimensional still visuals in their classroom. Displaying poster, pictures, charts, and map on classroom walls has been a long-standing tradition in all disciplines. A more modern technology, moving two-dimensional visual, was used by a smaller percent of the group surveyed. Yet, still a majority of the instructors surveyed also used moving two-dimensional visuals in their classroom. Although globes and similar three-dimensional stills have traditionally been part of many classrooms, less than one-third of the group surveyed stated that they had such three-dimensional visuals in their classroom. Even though active, hands-on learning, which can lead to three-dimension visuals for

display, has received a great deal of attention in public K-12 education, few of the English teachers surveyed had such spatial visuals for their students in the classroom. Although three-dimensional stills are readily available through student projects, most English/language arts teachers surveyed did not display those projects in their classrooms.

A stark contrast also appeared between the availability of visual literacy materials and the use of those materials in the classroom in relation to computers. All but one of the teachers surveyed stated that they had a computer in the classroom at all times for their own use. Even the one who did not always have a computer "sometimes" had one available. Although computers were almost always available to the teachers surveyed, only slightly more than 80 percent actually used a computer in their teaching on a regular basis. While this figure (80%) may seem high, given the percentage of computer-based presentations that occur in business and professional organizations, the figure did not reflect practice in other sectors. Again time and training may be issues in teachers not using the visual technologies available to them in the classroom. However, with the number of students who have a preferred learning style for visual learning, the visual materials available to teachers through the internet are apparently under-utilized.

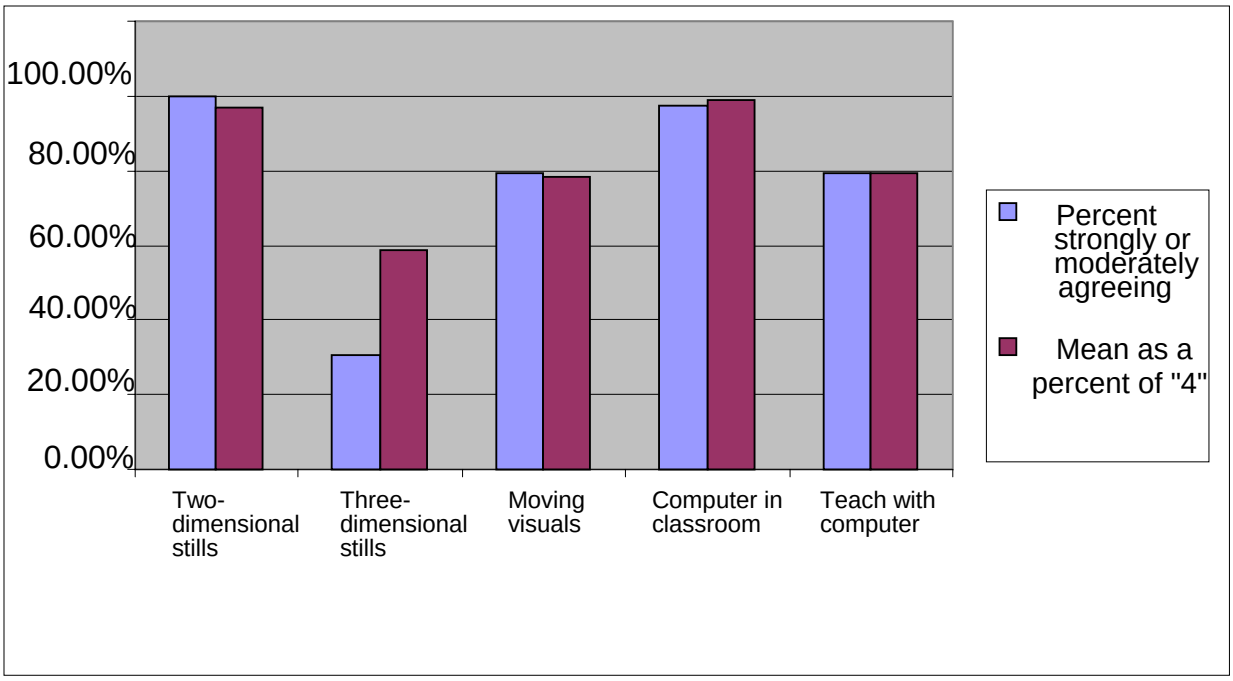
The questions that the respondents were asked in order to evaluate their use of visual literacy concepts were the following:

1. I have two-dimensional still visuals—posters, pictures, graphs, charts, maps—in my classroom,
2. I have three-dimensional still visuals—statues, models, globes—in my classroom,
3. I use moving visuals—movies, demonstrations, role-playing—in my classroom,
4. I have a computer in my room for my own use and

5. I use a computer in my teaching.

Data in figure 4.9 provide specific information on the responses in this area of the survey.

Figure 4:9 Percent who strongly or moderately agreed with each statement about their use of visual material in the classroom compared with the mean response to each statement as a percent of "4".



Teacher Competency in Visual Literacy

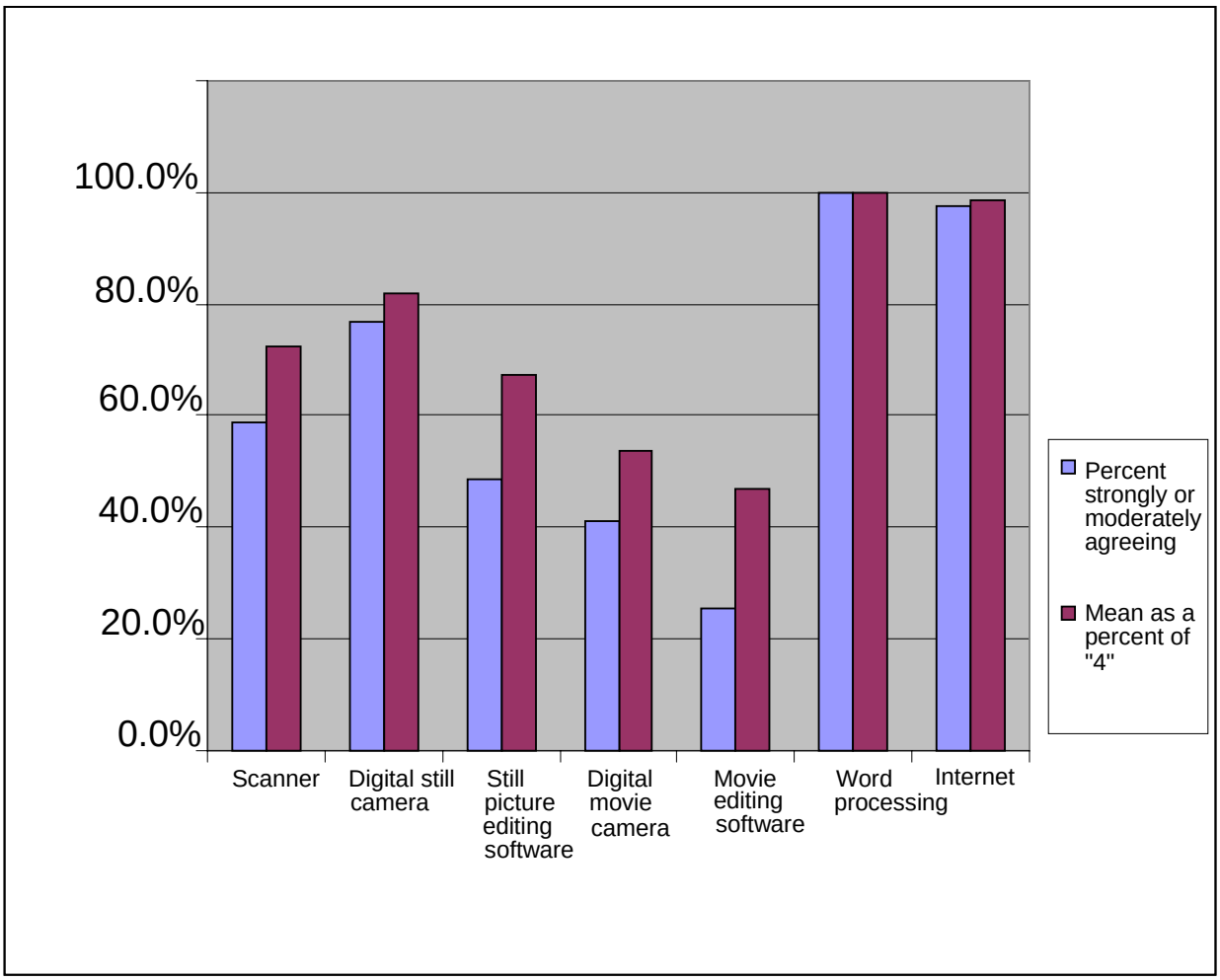
Teachers' rating of their use of visuals in the classroom paralleled their rating of their ability to use technology related to visual literacy. Ratings were the highest in areas that used technology to perform operations previously done without such technology. All respondents gave themselves the highest available rating for being able to use word processing effectively and for being able to access information on the Internet. These operations are similar to activities that most English/language arts teachers did in more traditional ways in the past with typewriters and library research with print texts. Respondents also expressed relatively high confidence in

their ability to use digital still cameras. However, their confidence in their ability to use scanners, digital movie cameras, and editing software for still and video camera images was less strong. Their weakest area, according to their self-assessment, was in their ability to use equipment to shoot and edit videos. Given that teaching students to reform words and images into new expressions is part of what English/language arts teachers are expected to do, the low level of confidence in using the necessary equipment to transform images into new expressions may be problematic as English/language arts teachers take on the role of instructors in all literacies, including visual literacy.

The uncertainty regarding their skills in using equipment to create and edit moving visual images may also reflect a general lack of confidence in their ability to keep up with emerging technology in the area of visual literacy. While those surveyed felt more confident in modern iterations of old technology such as word processing, which has replaced the typewriter, and Internet site and web-based databases, which have replaced, or at least supplemented, traditional library research than in their ability to use more modern technology such as scanners, digital cameras, and similar devices, they still had more confidence in their own ability than in their students' ability to use the modern technology related to capturing and manipulating visual images.

While the list of technologies about which teachers were questioned did not include the most up-to-date technologies, it did inquire about technologies that are readily available to most schools systems and individuals. Data in figure 4.10 compare the percent of respondents who strongly or moderately agreeing with statements about the teachers' competence with various technologies and the mean of the responses to those statements expressed as a percent of the possible "4".

Figure 4:10 Percent who strongly or moderately agreed with each statement about their competence with technology compared with the mean response to each statement as a percent of a possible "4".



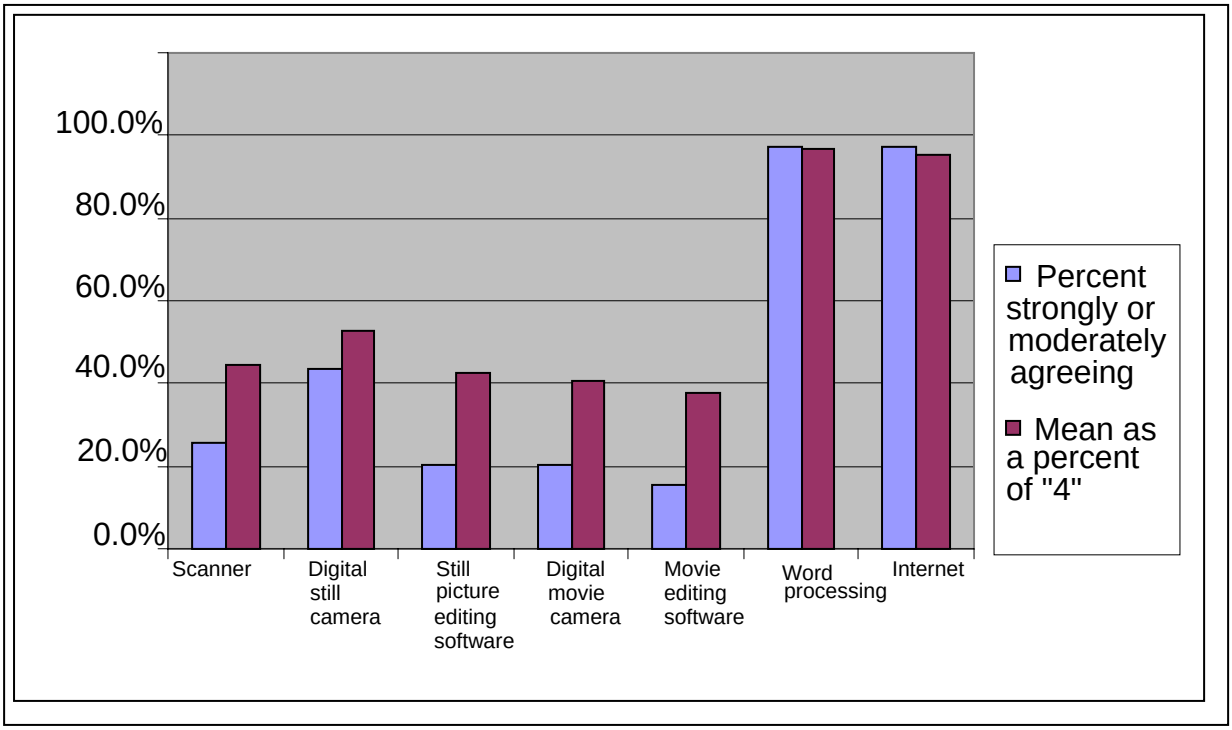
The lack of discrepancy between these two measures in most areas indicated a consistency not reflected in many other parts of the survey. The only statement with a statistically significant discrepancy between the two measures involved using movie editing software, which generally requires more training to master than the other technologies, which can often be self taught. Even though teachers were generally competent and confident in their ability to use technology related to visual literacy, they did not necessarily use that knowledge and ability to model and instruct

their students in visual literacy. Nor did they necessarily encourage their students to develop skills in use of technology related to visual literacy.

Student Competency in Visual Literacy

When asked about their students' use of technology related to visual literacy, teachers had a high level of confidence in the ability of their students to use computers for word processing (97.4%) and for accessing information on the Internet (97.4%), skills growing out of more traditional writing and research skills taught in English/language arts classes. Their confidence waned, however, when asked about their students' use of other technologies less closely related to traditional activities in the English/language arts class. Less than 50 percent expressed confidence in their students' ability to use technology more closely associated with visual literacy, such as scanners, still and video digital cameras, and software for manipulating visual images. Even though most people would assume that younger individuals would have more experience with technology related to visual literacy, teachers generally rated their students lower than they rated themselves in their ability to use modern technology for capturing and manipulating visual images. This counter-intuitive finding did not necessary reflect students' actual ability but only their teachers' perceptions. If English/language arts teachers did not have their students using technology related to visual literacy, they would not be able to accurately evaluate those students' ability to use those technologies. The variance in ratings of students' ability may relate to if and how much the various instructors had their students use technology in the classroom. Data in figure 4.11 show how teachers rated their students' ability with various types of technology used to capture and format alphabetic and visual expression.

Figure 4:11 Percent who strongly or moderately agreed with each statement about student competence with technology compared with the mean response to each statement as a percent of a possible "4".



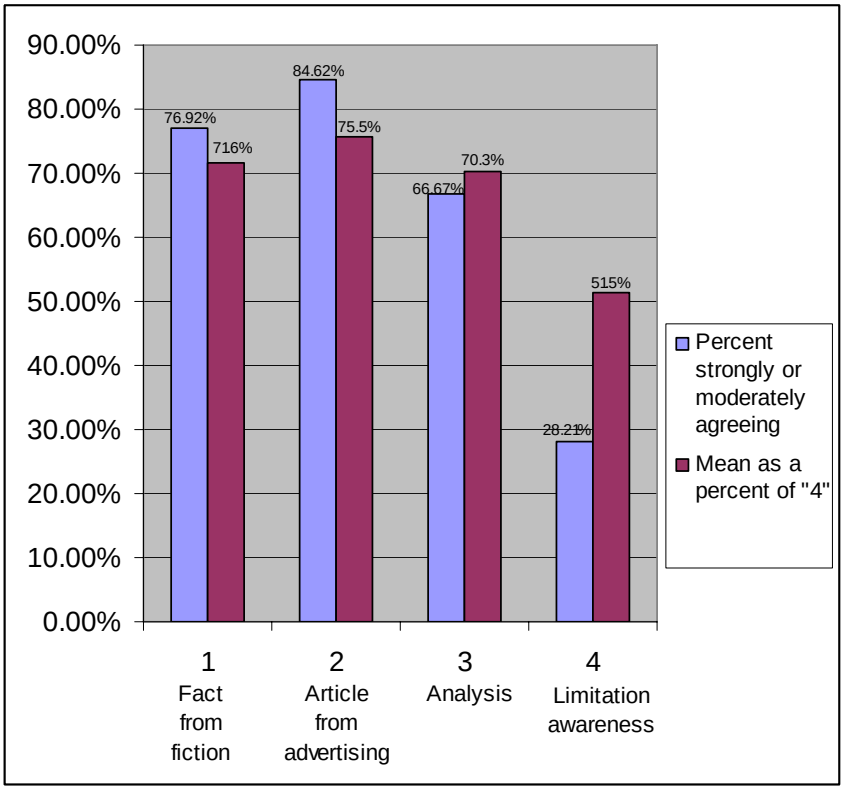
Even though teachers' confidence in their students' ability to use technologies such as scanners, digital still and movie camera, as well as editing software was low, their confidence in their students' ability to distinguish fiction from reality and advertising from article in visuals was moderately high (76.9% and 84.6%). Again, a traditional approach to teaching English/language arts is more likely to focus on such comprehension and analysis based exercises as distinguishing fact from fiction. Even though the teachers surveyed generally felt that their students were able to distinguish fact from fiction in both text and visuals, they had less confidence in their students' ability to analyze and interpret visual images and to recognize the limitations of visual images which can now be easily manipulated and altered. The advances in

technology were quickly picked up and mastered by most high school students, but their ability to think critically about what they saw was not as advanced, according to their teachers.

Because interpreting images is often more difficult now than creating those images using the available technologies, teachers may face difficulty in getting students to look more closely at visual images in order to properly interpret the intent and message of the images. This finding has implications for teaching critical thinking as well as visual literacy across the curriculum. Students' being able to analyze writing, speaking, and various symbols used in mathematics, science, and music is generally ranked as being high in importance but low in achievement by teachers at all levels. How teachers surveyed responded to statements on the survey verified that the importance but low achievement in analysis also applies to visuals. Since the teachers' attitudes toward the ability of visual images to communicate information effectively could influence the way they responded to the question, further probes into teachers' belief concerning the limitations of visual images may be warranted.

When the mean responses as a percent of a possible "4" were compared to the percent who strongly or moderately agreed with the statements on students' ability to interpret visual images, one statement produced a statistically significant difference between the two measures. That statement asked about teachers' opinion on their students' awareness of the limitations of visual images. Therefore, while most respondents did not strongly or moderately agree that their students were competent in this area, overall they saw students as adequate in their awareness of the limitations of visuals. Data in figure 4.12 show how teachers rated their students' ability in interpreting visual images

Figure 4:12 Percent who strongly or moderately agreed with each statement about students' ability to interpret visual images compared with the mean response to each statement as a percent of a possible "4".



Although virtually all students, according to their teachers, could use computers for word processing and accessing information, using the computer for effective visual formatting was less evident in compositions created by their students, according to respondents. Using formatting conventions commonly used in business, technical, and other types of writing, such as bulleting, numbering also receives little attention in English/language arts classes, according to the responses on the survey. Students' lack of attention to formatting in their compositions may be more the result of instructors not being fully aware of the formatting possibilities with current software or their failure to instruct students on the options they have for formatting than on students' lack of knowledge or ability in formatting documents. Just as teachers indicated that

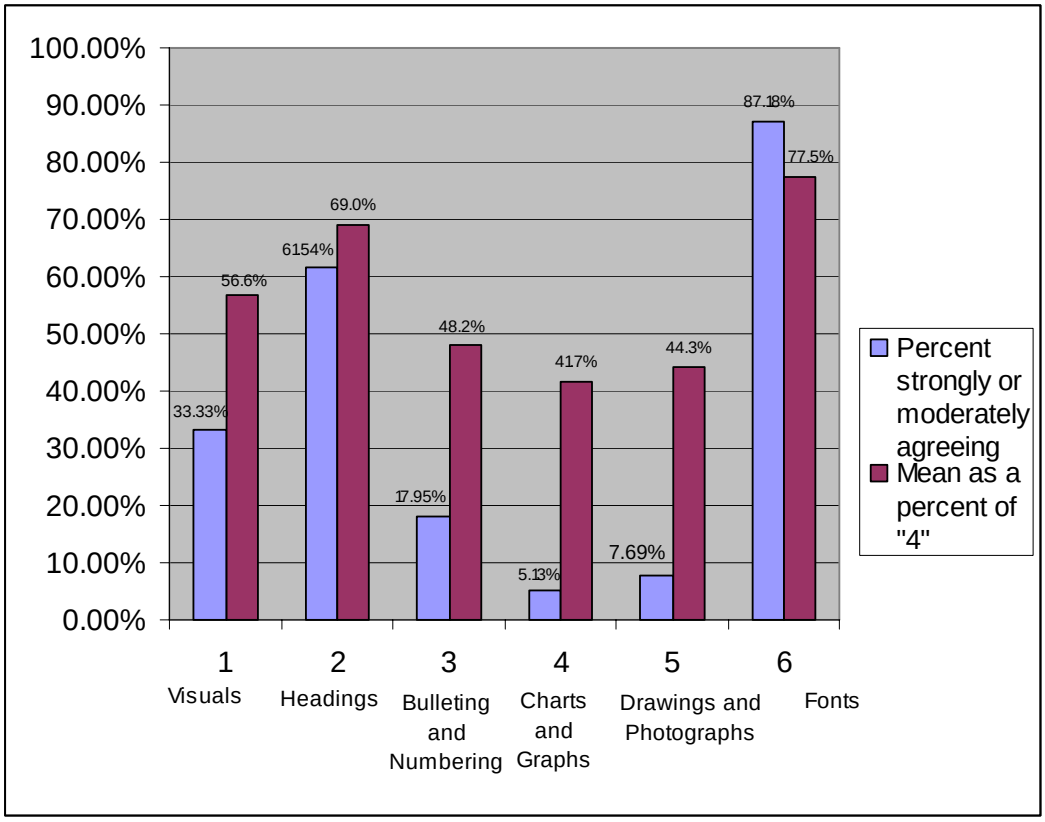
their students used few formatting conventions, those teachers were also not convinced that students had the necessary ability to incorporate visual images with text, including charts, graphs, drawing, and photographs. While it is possible that students do not have the necessary computer skills to incorporate visuals with text in their compositions, it seems more likely that teachers simply do not encourage students to use visual elements in their compositions in English/language arts classes.

On the other hand, students' use of headings and appropriate fonts were areas in which teachers generally felt their students were competent. Some respondents indicated that they did directly instruct their students to use certain fonts and headings, indicating that direct instruction of students in appropriate use of visual elements in their compositions can be effective. The one area that received a high rating by respondents was their students' use of appropriate fonts. In the past, many teachers have indicated that they have prescribed the use of specific font styles and sizes so that students did not attempt to measure length requirements for compositions based solely on the amount space taken by the font chosen. Requiring students to use certain font styles and sizes would lead teachers to believe that their students were able to determine appropriate fonts when the students were actually merely following directions.

Based on teachers' responses to the questions on their students' use of visual elements in their compositions, the respondents' trust in their students' ability to use formatting conventions was mixed, as was their confidence in their students' ability to use visuals effectively and appropriately. The wide disparity in the percent strongly or moderately agreeing with statements compared to mean responses as a percent of a possible "4" on statements involving bulleting and numbering, use of charts and graphs, and inclusion of drawing and photographs suggested an ambivalence or lack of strong commitment one way or the other to the use of visual elements in

students' compositions. If teachers did not discuss these elements and encourage their students to use them, the teachers could not respond knowledgably to statements regarding students' use of visuals in compositions. Based on the data, English/language arts teachers surveyed emphasized few elements of document design other than font. Examining the importance teachers' place on the use of visual elements in students' composition compared to their view of their students' use of such elements could provide more insights into the reason for the some of the discrepancy between the two measures. Data in figure 4.13 compare means as percents of a possible four with percents strongly or moderately agreeing with statements about the role of visual elements in document design.

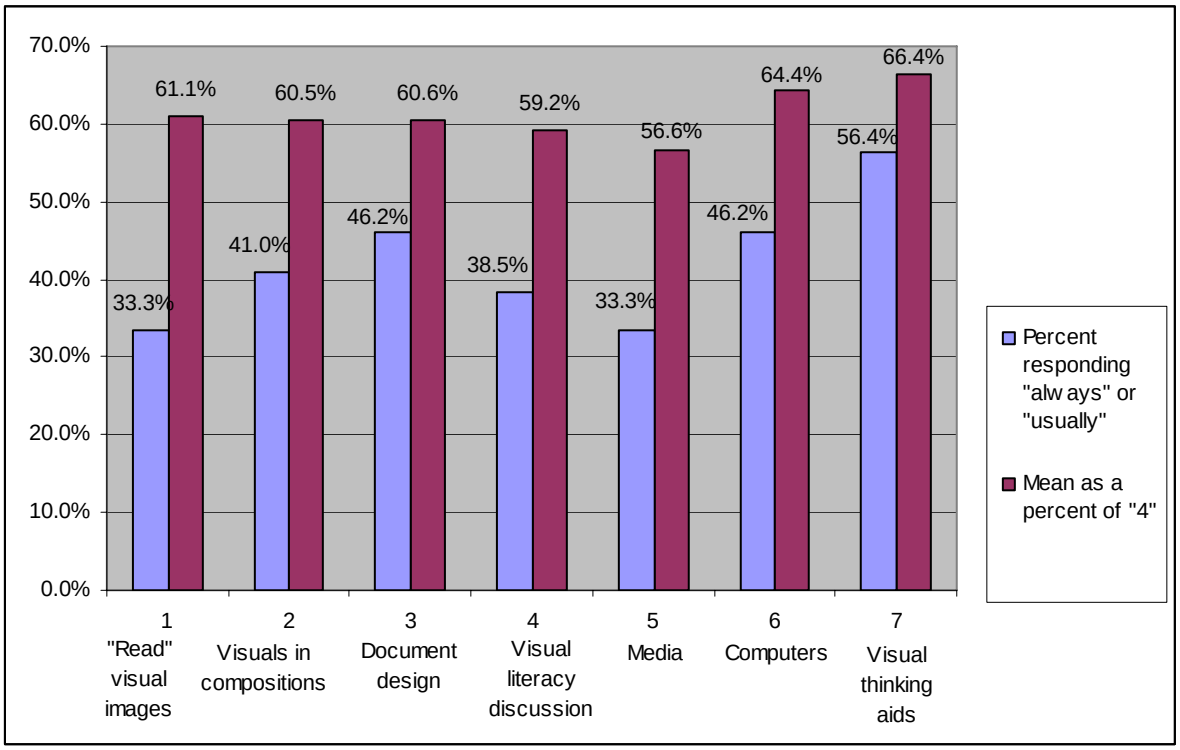
Figure 4:13 Percent who strongly or moderately agreed with each statement about students' ability to use visual elements in their compositions compared with the mean response to each statement as a percent of a possible "4".



Instruction in Visual Literacy

While most “always” or “usually” have computers available for student use (83%) and “always” or “usually” expect their students to word process their papers (90%), instruction in visual literacy does not necessarily follow. Data in figure 4.14 compare the percent of “always” or “usually” responses to questions about each individual teacher’s instruction of students in visual literacy concepts with the mean of each statement as a percent of “4”.

Figure 4:14 Percent who responded “always” or “usually” to each statements about how they provide instruction in visual literacy with the mean response to each statement as a percent of a possible “4”.



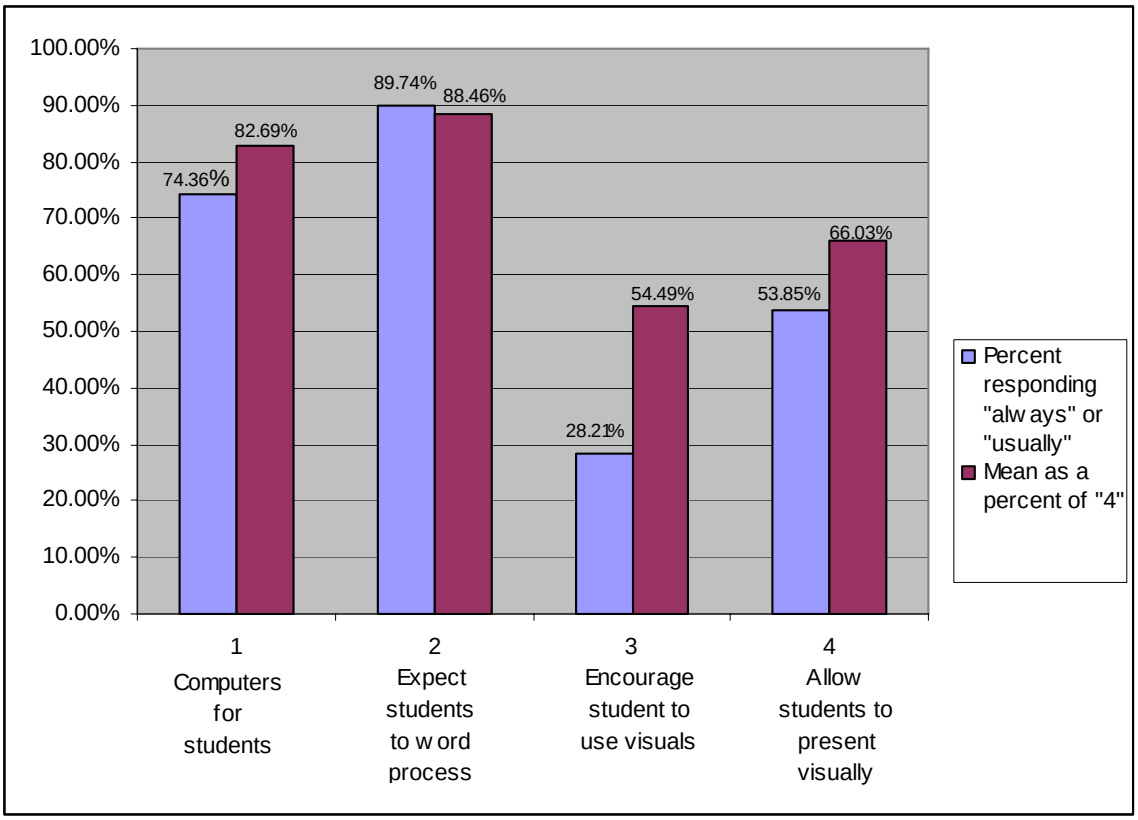
Less than 70 percent of those surveyed responded on all of the measures of instruction in visual literacy that they “always” or “usually” conducted such instruction. In addition, statistically significant differences between the two measures appear in teachers’ responses to instructing their students how to “read” visual images, discussion about visual literacy, and the use of media

to enhance visual literacy. One of the most encouraging pieces of data was the response to the statement about the use of visuals to aid students' thinking and organization. Following the trend begun by instructors in lower grades, 66.4 percent of secondary English/language arts teachers who responded said that they "always" or "usually" asked their students to use graphic organizers, charts, graphs, and similar visuals to help understanding of material. An apparent discrepancy appeared in the fact that even though many individuals related that they used media in their instruction in an earlier part of the survey, only slightly 56.6 percent stated that they "always" or "usually" used media in visual literacy instruction.

While instruction in visual literacy on the receptive side—viewing—was low, instruction in visual literacy on the productive side—creating visual expression—was equally as low in most areas. On statements about their expectations of students' compositions, while most teachers had computers available for their students and expected those students to word process their compositions, few encouraged students to use visual in their compositions or allowed students present ideas for compositions in alternative visual formats such as PowerPoint or websites. Data in figure 4.15 compare the percent who responded to each statement with "always" or "usually" with the mean response to each statement expressed as a percent of the possible "4". The comparison of the two measures indicates consistency in responses to three of the four questions. However, the difference between the two measures on the statement about encouraging students to use visual in their compositions is statistically significant. The discrepancy indicates that, even though many may encourage such use of expressive visual literacy, they do not do so on a regular basis. This finding goes along with other findings that point out that visual literacy is seen as subordinate to traditional literacy not as an integral part of the multi-faceted literacy required in contemporary civilization. Many responded in other parts of the survey that they saw

teaching visual literacy as additional work that they could not fit into their already tight schedule. Therefore, helping teachers with incorporating visual literacy with traditional, alphabetic literacy may help teachers to instruct their students in multiple literacies without compromising attention to either.

Figure 4:15 Percent who responded "always" or "usually" to each statement about their expectations for students' compositions with the mean response to each statement as a percent of a possible "4".

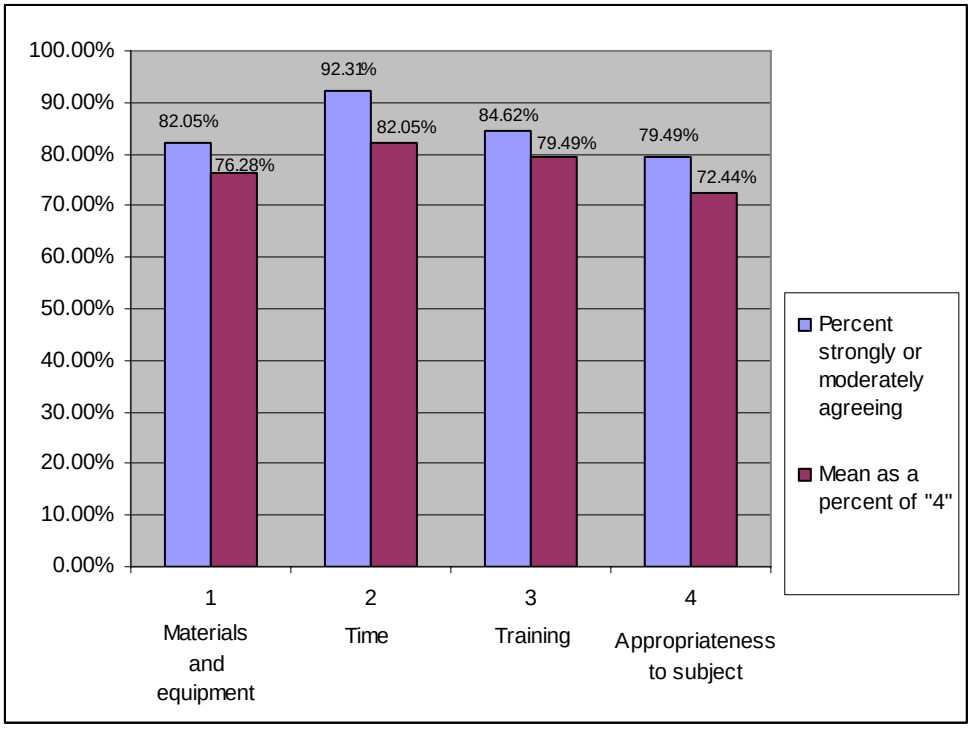


Limitations on Teaching Visual Literacy

Teachers surveyed indicated that they did not provide significant instruction to their students in visual literacy nor did those responding use visual literacy elements extensively in their English/language arts instruction. Based on these responses and the mandates by various

governmental and professional entities to provide visual literacy instruction in secondary English/language arts classes, the question arises, “Why do English/language arts teachers not provide instruction in visual literacy?” In response to questions about what kept them from teaching visual literacy, over 75 percent that lack of materials and equipment, time, training, and appropriateness to subject were factors. When discussion what limited their own teaching of visual literacy, over 90 percent indicated that not having enough time was the most significant factor. Data in figure 4.16 compare the percent of those who strongly or moderately agreed with various reasons that they did not teach visual literacy with the mean of those responses as a percent of the possible “4”.

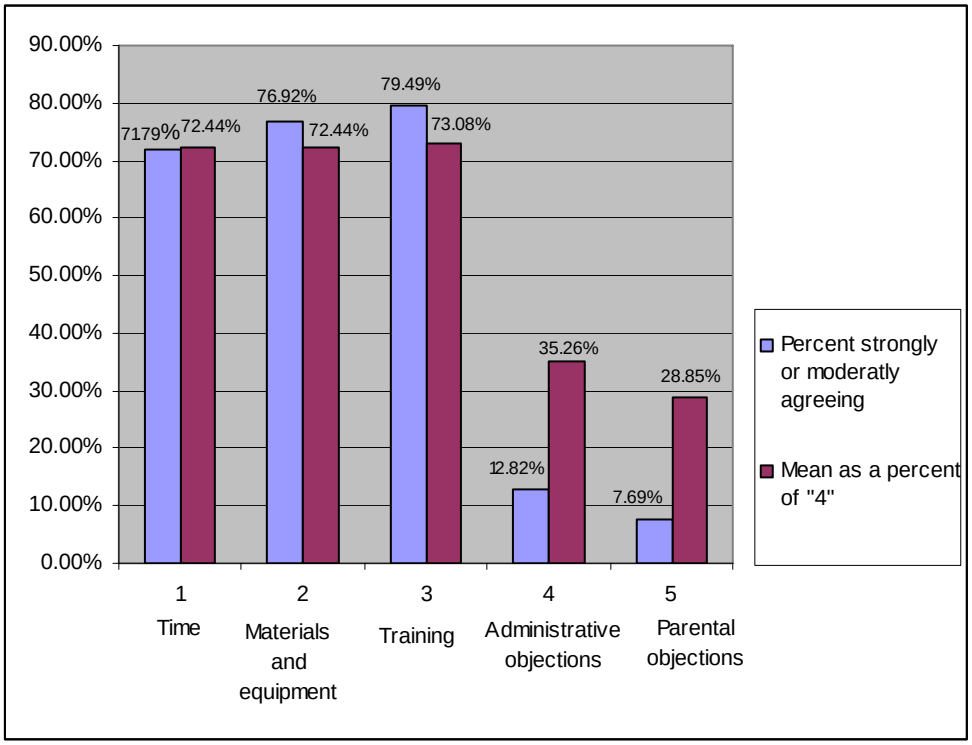
Figure 4:16 Comparison of the percent who strongly or moderately agreed with each statement about their own reasons for not teaching visual literacy with the mean of responses to each statement as a percent of “4”.



When asked about why other teacher did not provide visual literacy instruction, however, teachers surveyed responded differently from when they were asked about their own reasons. Their responses to statements about why others did not teach visual literacy were generally not as strong as their responses to statements about their own reasons for not teaching visual literacy. Teachers surveyed predictably reported the lack of training, rather than a lack of time, as being the major obstacle to visual literacy instruction for others. The highest percent of respondents (79.49%) strongly or moderately agreed that most teachers do not instruct their students in visual literacy because a lack of training on the teachers' part. When asked about their own reasons for not teaching visual literacy, respondents cited training as less important than time and about equal with materials and equipment. Yet, the percent who strongly or moderately agreed that their own lack training (84.62%) was a major factor in their not teaching visual literacy was higher than the percent citing training as a factor for other teachers.

The areas that those surveyed did not see as hindering teaching visual literacy were the attitudes of administrators and parents. Only 12.82 percent strongly or moderately agreed that objections by administrators kept them from teaching visual literacy. An even smaller percent (7.69%) strongly or moderately agreed that parents' objecting to visual literacy instruction was a major factor. If teachers do not feel pressure from stakeholders to emphasize traditional literacy instruction to the exclusion of visual literacy instruction, the questions still remains, ""Why do English/language arts teachers not provide instruction in visual literacy?" Data in figure 4.17 compare the percent who strongly or moderately with various reasons why most teachers do not instruct their student in visual literacy with the mean for each reasons as a percent of the possible "4".

Figure 4:17 Comparison of the percent who strongly or moderately agreed with each statement about other teachers' reasons for not teaching visual literacy with the mean of responses to each statement as a percent of "4".



Paralleling their assessment of who should be primarily responsible for teaching visual literacy, the English/language arts teachers surveyed indicated that they could not squeeze out any more hours from the day in order to teach visual literacy as well as traditional literacy. While respondents did not see any pressures from stakeholders not to teach visual literacy, they also did not feel any outside pressures to spend extensive time in such instruction. This lack of pressure from outside sources and the increasing demands on their time result in most instructors putting instruction in visual literacy "on the back burner," simmering until the need for such instruction boils over and draws unpleasant attention to itself. Addressing the importance of teaching visual literacy before the need boils over and becomes apparent may be the key to keeping English/language arts a professional option for future students.

Open Responses

The survey asked teachers to respond to three open ended questions plus gave them a chance to make any additional comments at the end of the survey. Their open responses further illustrated their uncertainty about instructing their students in visual literacy. The questions asked were as follows:

1. How do you respond to the Kansas English/language arts standards that require instruction in non-print text?
2. How has technology influenced the teaching of traditional literacy?
3. How has technology influenced the teaching of visual literacy?

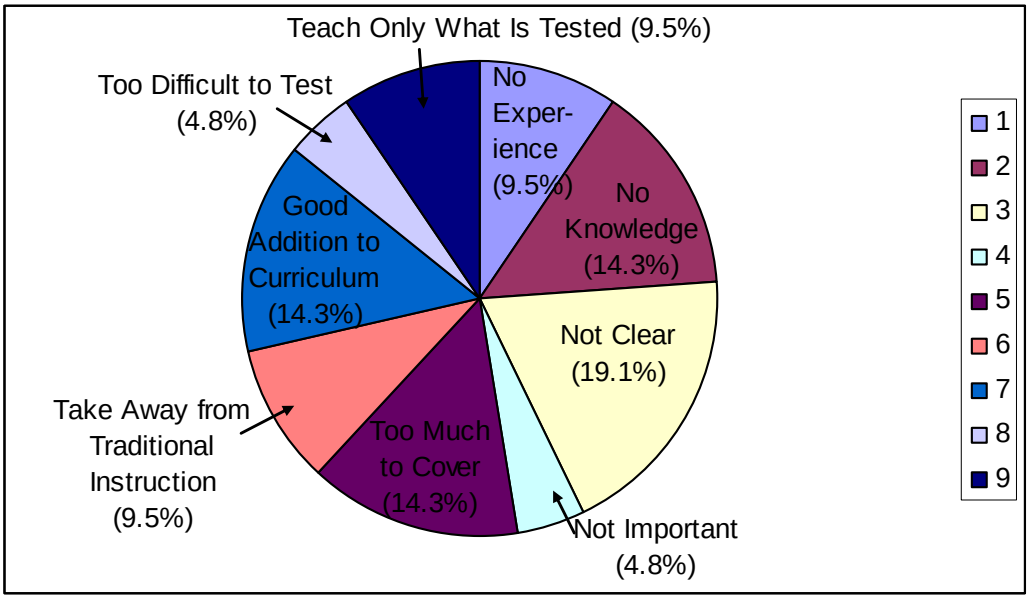
Those who responded interpreted the first question in one of two ways. Some discussed the relevance of visual literacy instruction in the English/language arts classroom and if such instruction should be included; others addressed how they used elements related to visual literacy instruction in the classroom as they saw such instruction meeting the state standards for secondary English/language arts. Of the 39 individuals taking the survey, 33 replied to the first open-ended question. Of those 33 who responded, 21 of their answers were coded to indicate their reaction to being expected to teach non-print text in the English/language arts classroom; 26 answers were coded to indicate the ways in which the respondents used visual literacy concepts in their classroom, including using charts and graphs, directly instructing students on visual literacy, or having students make presentations that included visual images.

Of those responses which addressed the relevance of being expected to teach visual literacy concepts in the English/language arts classroom, nearly 43 percent were unaware of the standard, had a lack of experience with the standard, or were unclear as to what was expected of them in relation to visual literacy instruction. This lack of clarity makes it apparent that training

by colleges and universities preparing English/language arts teachers and school districts that employ them have not done a good job of helping English/language arts teachers see the importance of visual literacy instruction nor providing training on how to incorporate visual literacy instruction with traditional literacy taught in English/language arts classrooms. Slightly less than 30 percent of the respondents felt that visual literacy instruction was unimportant, took away from instruction in traditional literacy, or consumed too much additional time. Their unwillingness to give up time on traditional literacy instruction for visual literacy instruction reflected not only their educational experience but the emphasis in society on the basics of reading and writing. In addition, this attitude reflected the failure of teachers to see that visual literacy instruction is not an add-on but an integral part of literacy instruction in more general terms.

Also, slightly more than 14 percent believed that visual literacy was too difficult to test or that they would only teach visual literacy if it were required for their students to pass local, state or federal assessment tests. The pressures from No Child Left Behind and similar legislation made those surveyed reticent to explore areas that were not being tested, fearing that their students would score lower on required tests, thus jeopardizing funding for their schools and possibly their own employment. The pressures of standardized assessments tests have clearly made instruction in visual literacy seem less important to English/language arts teachers surveyed because of the high-stakes nature of those tests. Of the responses coded, only 14.3 percent indicated that visual literacy was an important part of the English/language arts curriculum. Data in figure 4.18 illustrate the percent of each type of response related their view of visual literacy instruction in the secondary English/language arts classroom.

Figure 4:18 Percent of various reasons given by those responding for not teaching visual literacy



When asked how technology has influenced the teaching of traditional literacy instruction, teachers gave responses which were categorized into sixteen areas, eight of which were positive, six of which were negative, and two of which could be either negative or positive. Only four individuals did not respond to the questions of technology's influence on teaching traditional literacies taught in English/language arts classes. Of the 35 teachers who responded to the questions, 69 different types of responses were classified by the researcher. Of the 69 responses that were classified, 46 were in positive categories; 14 were in negative categories; and nine were in categories that could be either negative or positive, depending on the circumstances and the students. Consistent with responses in other areas of the survey, most of the negative comments had to do with visual literacy instruction interfering with teaching literacy in traditional ways. Even though less than 26 percent of the responses were negative, the data may not include the most negative responses that English/language arts teacher have toward

technology since those with the most negative attitudes were not likely to have completed an electronic survey. Data in table 4.3 record the types, number, and percentage of responses.

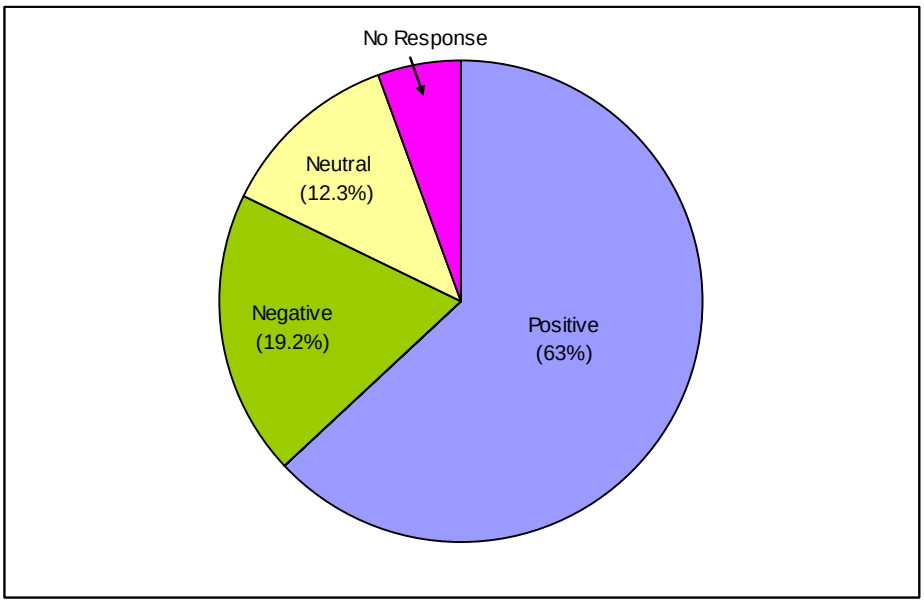
Table 4:3 Types and number of open-ended responses to questions on the influence of technology on English/language arts instruction

Response Category	Number	Percent
Enhance (Positive)	14	20.3%
Modernize (Positive)	2	2.9%
Multiple Sensory (Positive)	8	11.6%
Individualize (Positive)	5	7.3%
Provide Helps (Positive)	3	4.4%
Research (Positive)	5	7.3%
PowerPoint (Positive)	4	5.8%
Word Processing (Positive)	5	7.3%
Information Overload (Negative)	2	2.9%
Interfere with Traditional Literacy (Negative)	4	5.8%
Makes Students Lazy (Negative)	4	5.8%
Cut and Paste/Plagiarism (Negative)	2	2.9%
Hinders Students Ability to Assimilate (Negative)	1	1.5%
Misinformation (Negative)	1	1.5%
Internet (Either Positive or Negative)	3	4.4%
Spell Check/Grammar Check (Either Positive or	2	2.9%

Teachers generally acknowledged the importance of multi-sensory instruction and that technology has enhanced teachers' ability to provide instruction through different modes on a more individualized basis to their students. The positive influence that technology has had on the ease with which students can do research was also frequently noted. Many also pointed out that students being able to word process their papers both inside and outside of class has helped students' writing and also teachers' ability to read and grade written assignments more easily. Negative comments generally focused on students' substituting technology for true learning.

Figure 4.19 illustrates the proportion of positive, negative and neutral comments about technology.

Figure 4:19 Percent of responses of various types to the influence of technology on teaching English/language arts



Despite the overwhelming positive comments about the influence of technology on the teaching of English/language arts, teachers are still uncertain how technology is affecting their students' abilities in traditional literacy. Yet, instructors are generally more uncertain about the influence of technology on the teaching of visual literacy.

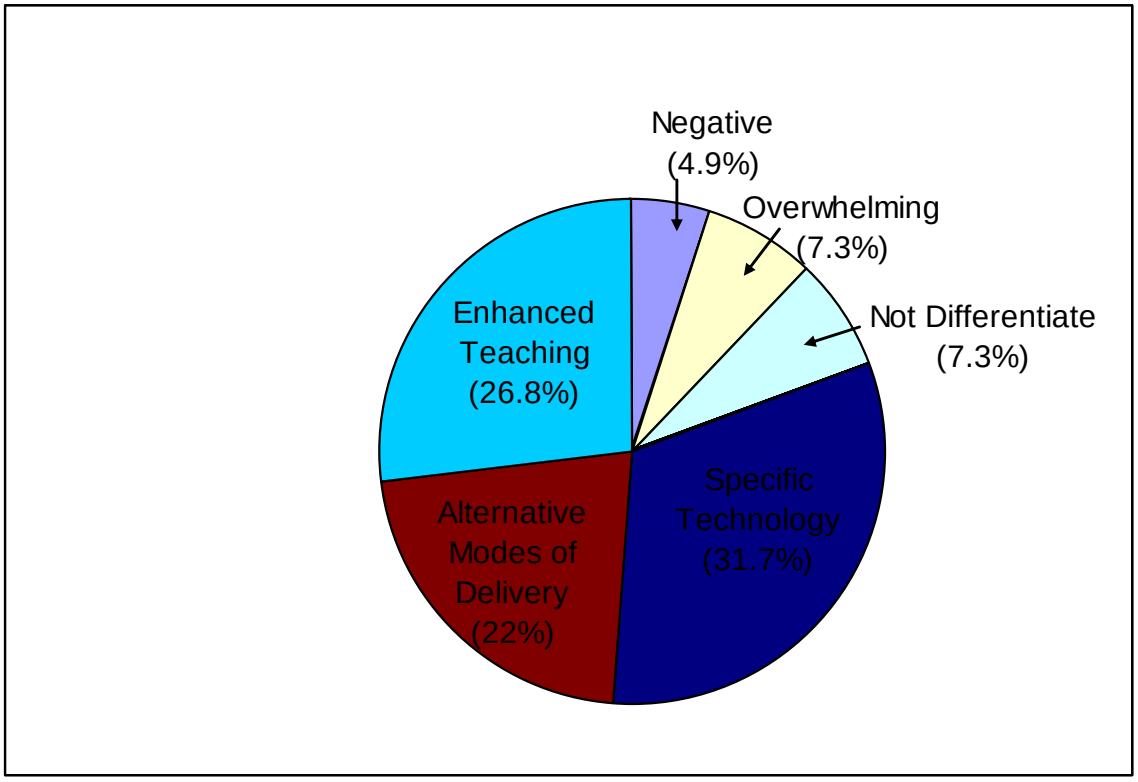
When asked about the effects of technology on the teaching of visual literacy, many did not differential between technologies' influence on instruction in traditional literacy and on instruction in visual literacy. Although nine individuals did not respond to the questions, 41 responses were classified from the remaining 30 individuals who did choose to remark about visual literacy and technology. Of those who responded, 7.3 percent indicated that they did not differentiate between the influenced of technology on traditional literacy instruction and visual literacy instruction, and 4.9 percent felt that technology had a negative influence on students'

ability to look below the surface of visual images or dulled students' senses because of endless "boring PowerPoints". Ambivalence was apparent in 7.3 percent of the teachers' responses with some expressing a feeling of being overwhelmed with the possibilities of technology in visual literacy instruction or an inadequacy as an instructor because students already came knowing more about the available technologies related to visual literacy than the teacher. However, over 80 percent of the responses indicated that technology had a positive impact on visual literacy instruction. Specific technologies such as computers, the Internet, digital camera, video camera, and scanners, were mentioned in 31.7 percent of the responses. Another area mentioned frequently was the ability to reach more students (22%). Those responses included references to students having greater access to information and images, learning through hands-on activities, being able to use multiple intelligences, and working independently, as well as teachers being able to display information to large numbers of students at one time.

Of the 26.8 percent who believed that technology enhanced their ability to teach visual literacy, one mentioned that teachers gained more credibility with students by using technology to provide instruction since students are often used to getting more of their information through various twenty-first century technologies. Others appreciated the ease with which technology allowed them to access visual material to enhance their instruction. Being able to access visual material easily and almost instantaneously was recognized as a clear benefit in teaching students how to find meaning in visuals. Even though information overload was mentioned as a negative influence on teaching traditional literacy, teachers did not identify such a problem with teaching visual literacy. This discrepancy may be due to teachers' failing to identify or have their students identify visual materials. On the other hand, the discrepancy may also be due to the amount of visual materials available through technology not appearing as massive as the amount of textual

materials available through technology. Data in figure 4.20 illustrate the percentage of responses that fell in various categories.

Figure 4:20 Percent of responses of various types to the influence of technology on teaching visual literacy

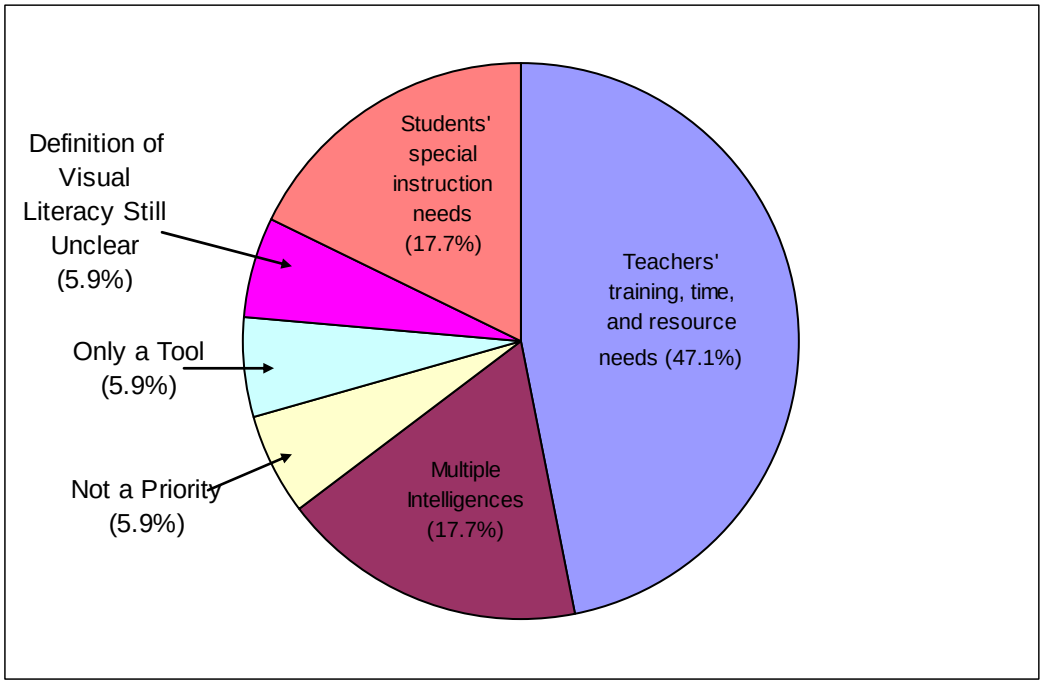


By far the major of those surveyed looked at technology as a major enhancement to their instruction of students in both traditional and visual literacy. Yet, a significant minority (12.2%), indicated that they felt that the advances in technology were either overwhelming or negative in their effects on English/language arts instructors ability to teach their students in multiple literacies. The negative responses were particularly associated with students' relying on technology too heavily, rather than their own learning.

Although those taking the survey were also given the opportunity to make any other comments about visual literacy instruction in the English/language arts classroom, only

seventeen of the thirty-nine individuals surveyed (43.6%) responded. Figure 4.21 provides information on the types of responses produced in the open response section of the survey.

Figure 4:21 Percent of various types of general responses to visual literacy instruction in English/language arts classrooms



Of those who did respond, many (47.1%) indicated a need for more training, time, and resources in order to teach both traditional and visual literacy effectively. The greatest benefit mentioned was the ability to address students with varying needs and learning styles (35.4%) through the use of individualized instruction made possible with technology. A few felt that instruction in visual literacy and the use of technology for instruction were not priorities and were only tools in teaching students in more traditional English/language arts areas, particularly literature and writing. Even those who identified visual literacy instruction and technology as tools to teaching traditional literacy did not discuss how they incorporate instruction in multiple literacies within their classrooms.

Summary

The major issues that emerged from the survey were the differences in training that English/language arts teachers have had in visual literacy, the variation in use of visual literacy concepts in the English/language arts classroom, the range of perceptions in both students' and teachers' skill in using technology related to visual literacy, the lack of consensus as to who should be responsible for visual literacy instruction, the failure to identify limitations on teachers' addressing visual literacy in the English/language arts classroom, and teachers' lack of awareness of standards related to teaching visual literacy in the English/language arts classroom. With these issues in mind, the researcher analyzed the information as it related to research questions posed earlier. Conclusions and recommendation in some cases seem clear while in others the appropriate course is less certain.

CHAPTER 5 - Analysis and Recommendations

Educators from pre-school through graduate school are becoming increasingly aware of diversity in learning styles and teaching methods. In order to acquire information, make reasonable judgments, and communicate effectively, students must be able not only to read and write but to listen, express, view and present visual material. While students have been able to learn to receive and transmit information using five of the six English/language arts areas (reading, writing, listening, speaking, and viewing) for years, some students could not master the skills necessary to create effective visual images, nor was it considered a part of the English/language arts teacher's mission to provide instruction and practice in that area. With the expanding capabilities of technology, however, the possibility of anyone being able to create a visual image to appropriately communicate became reality. In addition, as population growth in industrial countries slows, it has become necessary for all citizens to learn the skills that will allow them to be productive in society, which means that teaching only traditional literacy may no longer be an option. Recognizing the importance of other literacies, professional organizations such as the NCTE, IRA, and NCATE and state agencies such as KSDE have put in place English/language arts standards that address other literacies. Because it is necessary to explore teachers' attitudes, understanding, and use of visual literacy concepts before examining the effects of visual literacy instruction on students' literacy skills, this study was intended to determine teachers' views of the place visual literacy instruction has and should have in secondary English/language arts classrooms. The goals of the study were to explore teachers' attitudes toward teaching visual literacy; understanding of the subject; use of visual media; preparation to teach visual literacy; and their instruction of students in visual literacy.

Restatement of the Problem and Research Questions

Despite the fact that Kansas English/language arts teachers are expected to use visual literacy concepts in their instruction according to the English/language arts standards set by the state, it is unclear if English/language arts teachers have adequate knowledge of the standards related to visual literacy or a proper understanding of how to help their students meet the standards. Research questions developed to define the study and address the problem of helping students meet standards related to visual literacy were as follows:

1. What attitudes do English/language arts teachers have about being expected to instruct their students in visual literacy?
2. What types of instruction in visual literacy did English/language arts teachers receive in their teacher education programs?
3. What types of instruction in visual literacy do English/language arts teachers provide their students?
4. How do English/language arts teachers use visual media in their classrooms?
5. How do the students of English/language arts teachers use visual literacy concepts in the classroom?
6. What do English/language arts teachers expect their students' essays to look like?

This chapter discusses the findings presented in Chapter 4 as they apply to each of these research questions. Conclusions are based on the finding linked to the relevant literature on visual literacy. Implications for teaching practice are identified based on findings and literature on best practice associated with instruction of students in visual literacy and training of teachers to help their students become visually literate. In addition, given that some information was not determined by the current study, suggestions for further research are provided.

Analysis of Data

Demographics

Although not directly connected with the issues addressed in the research, the demographic information revealed concerns for colleges and school districts in recruiting, training and retaining English/language arts teachers. From the ages and years of experience of those surveyed, it seems apparent that fewer traditional age college students are going into the profession and that few English/language arts teachers of any age are staying in the profession more than ten years. Recruiting both traditional and non-traditional English/language arts teachers will be increasingly difficult as older teachers begin to retire. Yet, if those recruited are to stay in the profession, they must receive better training in how to reach all students, incorporating instruction in both traditional and other literacies in such a way that their already heavy load does not become even more burdensome, leading to an increased exit from the profession. While the survey indicates some improvement in training in instruction in other literacies such as visual literacy by some colleges, many post-secondary teacher training programs provide little instruction in these areas. Moreover, secondary schools do not seem to be supporting those teachers already working in the field with in-service or other types of training intended to help teachers reach more students in a way that the teachers can work smarter and not harder.

Questions #1 and #2: Attitude and Training

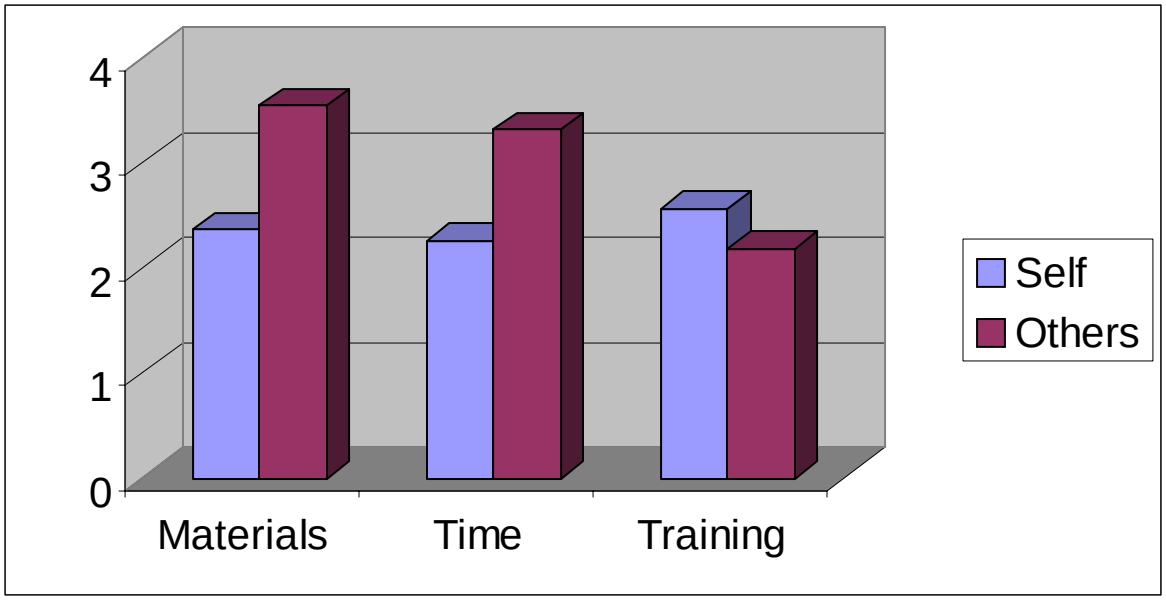
As indicated in chapter 4, only slightly more than 14 percent of respondents had a positive attitude toward teaching visual literacy. While most indicated that they were unwilling to take time away from traditional literacy in order to teach visual literacy, many also indicated that they simply did not have an adequate knowledge of either the standards or how to teach

visual literacy. Respondents of all ages do not feel that administration or parents limit English/language arts teachers' ability to instructor their students in visual literacy. All generally strongly disagreed with the statements, "Most teachers do not spend time teaching visual literacy concepts because of objections from administration" (1.41 with 4.0 being strongest agreement with statement) and "Most teachers do not spend time teaching visual literacy concepts because of objections from parents" (mean of 1.18 with 4.0 being strongest agreement with statement). Yet, despite the fact that they do not perceive strong extrinsic forces from the profession or community keeping them from teaching visual literacy, as a whole, they agree that they might teach visual literacy if it were more appropriate to the subject they teach.

The failure to see instruction in visual literacy as germane to the subject of English/language arts instruction may also be a training issue that colleges and schools systems need to address. Even if they did not see visual literacy instruction as part of the English/language arts curriculum, all respondents generally conceded that materials and equipment, time, and training are issues limiting their own and their colleagues' ability to instruct their students in visual literacy. Most agreed that other teachers would be more likely to teach visual literacy if they had more time and resources than they, themselves, would. The discrepancy between the mean for resources providing incentive for self and the mean for resources providing incentive for others was 1.18 on the 4-point scale. Less significant, but still worth noting, is the difference between the means of time providing more incentive for self and time providing incentive for others, 1.05 on the 4- point scale. Training was the only area of the three—time, resources, and training—that respondents rated as more likely to encourage them to teach visual literacy as compared to training for their colleagues. The difference was not, however, significant at .38 on the 4-point scale. Yet, the responses may indicate that teachers are

slightly more open to training in visual literacy instruction than they perceive their fellow English/language arts teachers to be. Figure 5.1 compares responses from teachers about the limitations of materials and equipment, time, and training for themselves and their colleagues.

Figure 5:1 Comparison of responses on limitations of resources, time and training on self and colleagues



The concerns of English/language arts teachers that they do not have sufficient materials and equipment, time, or training to adequately instruct their student in visual literacy are issues that post-secondary institutions that train teachers and public school systems that hire them will need to address if society wants secondary students to be more savvy about the influence of visual media and how to get information through multiple types of presentation of information.

Although the researcher did not expect English/language arts teachers to have as much knowledge of visual literacy as they have of traditional literacy, the lack of training was one of the most striking, but expected, findings. Statistically significant differences also exist among various demographic groups in their training in visual literacy. Those who were required or elected to take undergraduate or graduate courses in visual literacy or who recalled discussions

of visual literacy in their course work were generally younger, had less experience teaching, and taught in larger schools than those who had no formal training in visual literacy. Those with master degrees or above and those who had been teaching more than twenty years tended to indicate no training, either formal or informal, in visual literacy. One clear gender difference in training appeared in questions regarding informal training in visual literacy. Women were more likely than men to have learned about visual literacy informally through other teachers or to have studied about visual literacy on their own. An interesting difference also appeared in instructors who taught at different levels. Those who taught seniors generally indicated that they had received no undergraduate or graduate training in visual literacy while those who taught juniors more frequently studied visual literacy on their own.

When the responses to visual literacy training were coded, as indicated in Table 3.1, the average response of teachers with only a bachelor degree was significantly higher than any other group (4.29) indicating that, on average, instructors in this category had at least some formal training in visual literacy. The average coding scores of those with a bachelor degree plus hours (3.08) and a master degree plus hours (3.1) reflected that most in these groups had at least some informal training in visual literacy instruction, either through a seminar, in-service, or discussion with others. Although the number of people with just a masters or a doctorate were small and, therefore, may not provide statistically reliable information, their average coding score reflected minimal training in visual literacy instruction (masters-2.33; doctorate-2).

Similarly, average coding scores for training in visual literacy instruction tended to go down as the years of teaching experience increase, as might be expected since training English/language arts teachers in visual literacy instruction has been a concern only in the past decade. The scores for various years of teaching experience are recorded in Table 5.1.

Table 5:1 Average coding score for training in visual literacy instruction disaggregated by years of teaching experience

Years of teaching experience	0-5	6-10	11-15	16-20	21-30	Over 30
Average coding score	3.18	3.0	3.29	2.25	2	2

Even though those who are apparently more recent college graduates, as indicated by their years of teaching experience and having only a bachelor degree, have higher average coding scores for training in visual literacy instruction, only two had taken a course in visual literacy, while three had no training at all. This information indicates that, while some colleges may be doing a better job of training English/language arts teachers in how to instruct their students in visual literacy, many are still bound to a more traditional English/language arts curriculum.

In addition, public school systems and English/language arts professional organizations may not be keeping pace with the need for training in this area as reflected by the fact that only three individuals at all levels of education received training in visual literacy through seminars or in-service presentations. Moreover, two of the individuals who did receive such training were from the same school. An interesting anomaly in regard to training in visual literacy instruction appears in the data disaggregated by gender. While, females, as indicated earlier, are more likely to have learned about instruction in visual literacy informally through colleagues, males have received significantly more formal training in the subject, resulting in an overall coding score of 3.27 for males and 2.54 for females. Since research indicates that males tend to be more visually oriented, on average, than females, male English/language arts teachers may be more likely to study less traditional approaches to English/language arts instruction.

Similarly, an interesting trend appears when looking at the data disaggregated by the number of students that the respondents teach each semester. Those with fewer than 80 and more than 120 students received the highest average coding scores for training in visual literacy, as did 1A-3A schools and 6A schools. Those who taught more typical loads or taught in 4A or 5A schools had less training, which indicates that schools at both ends of the spectrum may encourage training in literacies other than traditional literacy in order to address the needs of more heterogeneous populations of students. Perhaps of even greater interest is the difference in training among groups with various duties outside the English/language arts classroom. Those whose duties include teaching other classes, such as journalism and speech or drama, have the lowest average coding score for training in visual literacy. The group with the highest score is those who are athletic coaches in addition to being English/language arts instructors. It may be that people with greater non-academic interests are more likely to study methods of instruction that are more non-traditional or that athletic coaches are exposed, through their players, to a greater concentration of students who learn better through visual or kinesthetic means, rather than traditional verbal or alphabetic means. Table 5.2 shows the average coding scores for training in visual literacy for various groups with duties in addition to teaching English/language arts.

Table 5:2 Training in visual literacy instruction by co- or extra-curricular duties

Duties outside the English/ language arts classroom	Teaching other classes	Coaching Athletics	Coaching Co-Extra Curricular Activities	Sponsoring Class or Club
Average Coding Score	2	4	2.3	3

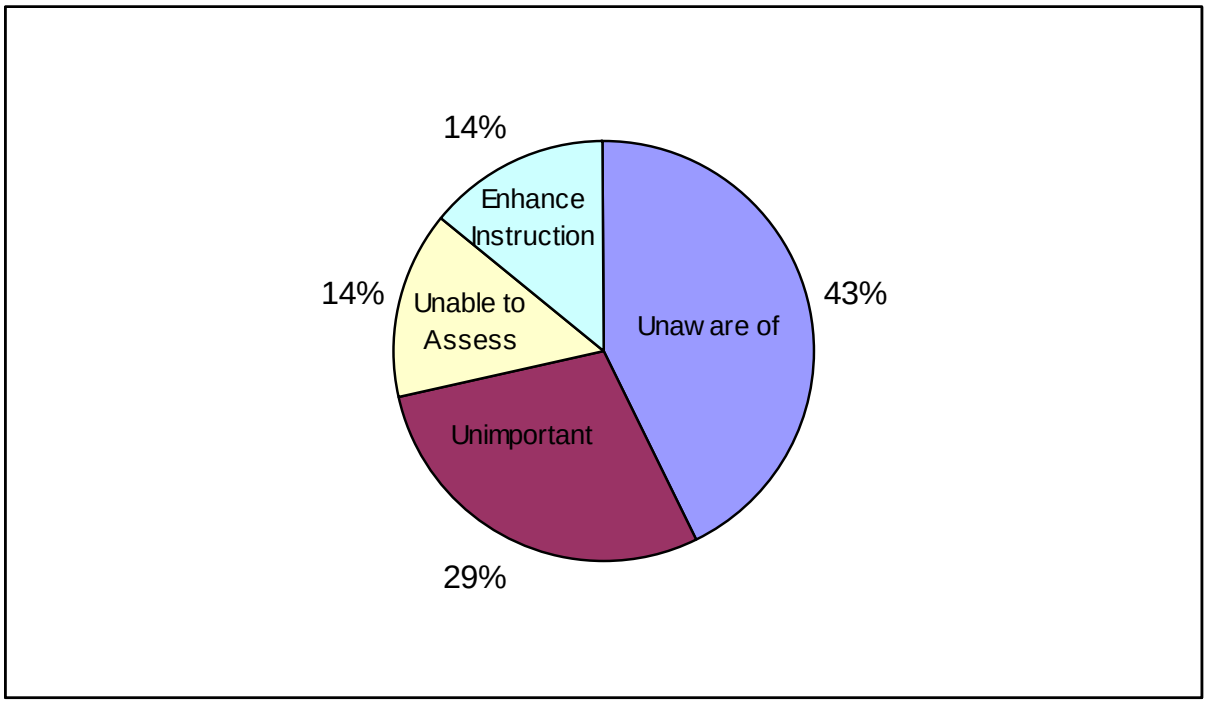
Question #3: Instruction of Students in Visual Literacy

No matter how much training teachers have, how much they use visuals in their instruction, or how competent they think their students and they themselves are in use of visual technology, the heart of the question is if they instruct their students in visual literacy concepts. Although the responses to questions on visual literacy instruction reveal some mixed results, most teachers admit to providing little instruction to their students in visual literacy. No statistically significant difference among groups is apparent, with all aggregated responses in the section on visual literacy instruction scoring below 3 for all groups, with only two exceptions—teachers in schools where they have over 120 students in their classes each semester and teachers between the ages of 46 and 55. While the aggregate numbers give little insight into how teachers instruct their students in visual literacy, responses on individual questions may be telling. Based on their responses to the individual questions, most teachers expect their students to use word processing for their essays. Even though using word processing enhances readability, students apparently are not encouraged to use other features of the computer that could improve their communication.

When asked if they encourage students to use visuals in compositions, most teachers indicate that they rarely suggest such inclusions despite the ease with which visuals can now be included with text. Responses to other questions about visual literacy instruction also produce responses that indicate that teachers only sometimes or never instruct their students in visual literacy. From other responses, it seems apparent that training is not solely the issue. Several open responses and responses on the limitations on visual literacy instruction reveal why English/language arts teachers do not instruct their students in visual literacy. Some respondents stated that they were unaware that teaching students to interpret and present visual information is

part of both the professional and state standards for English/language arts classrooms. Others expressed a sense of being overburdened and unable to cope with additional expectations on their instruction. Of those who responded to a question about their reaction to being required to teach student how to comprehend and interpret non-print text, over 70 percent signified that they were either unaware of standards or felt the standards were unreasonable. Figure 5.2 shows that only 14 percent of respondents had a positive view toward instructing students in visual literacy in the English/language arts classroom.

Figure 5:2 Percent of responses regarding being required to instruct students in visual literacy



If they had time, training, and resources, some suggested that they might instruct their students in visual as well as traditional literacy. Realizing that more students are coming to secondary education with a preference for visual learning and that a majority of American adults receive their information on current events through visual media, visual literacy instruction is becoming less of an option and more of a necessity. Yet, English/language arts teachers do not

feel prepared to add instruction in visual literacy to their already full platter. Being required by the federal government to make sure that all their students are proficient in reading and writing absorbs most of teachers' time and energy in English/language arts classrooms. State standards that are not directly addressed in federal or stated mandated testing are not priorities among English/language arts teachers, and, therefore, often are ignored or touched on in the most cursory way.

Question #4: Use of Visual Literacy Elements in the Classroom

On an even more elementary level than teaching students in visual literacy is using visual elements in the classroom. Therefore, of even more concern than the lack of training in visual literacy is the disconnect between training and use of visual literacy concepts. While less experienced, less educated respondents, particularly those who were athletic coaches, have more training in visual literacy instruction, they use visual literacy concepts in the classroom less than their more experienced, more highly educated peers, who have other than athletic duties outside the English/language arts classroom. Those with 0-5 years of teaching experience, those with only a bachelor degree, and those who coached athletics received the lowest overall score on questions related to their use of visual literacy in the classroom. Specifically, their scores were significantly lower on the question of use of computers in their teaching even though they, like the vast majority of respondents, have computers available to them in their classrooms. Another area in which the reported training in visual literacy does not necessarily match the use of visual materials reported by instructors is in the school size. While 1A-3A and 6A school report the most training, 4A teachers report the most extensive use of visuals. However, teachers at 5A schools report both low levels of training in visual literacy and low levels of use of visuals in the classroom. Given that the recent suit in Kansas over the state's funding formula was spearheaded

by 5A schools and that the new formula provides more funding for schools in this classification, more funds may be available in the near future for training and purchasing equipment and material for visual literacy instruction. Therefore, this finding may not hold in the future for the middle classification of schools in Kansas. Even though this difference may change due to funding, other difference seem more a result of the characteristics of the different groups than with the amount of funding they receive.

An exception to the disconnect between training and use involves gender. Just as males report more formal training in visual literacy instruction than do females, males also use visual literacy approaches in their classroom to a greater extent than do females. Again this difference may support research on the relative strength in visual learning of males over females. Although racial disaggregation also shows differences in the use of visual literacy, the sampling of respondents of non-European-American races is so small that no valid conclusions can be drawn from the findings. Another significant difference is in the grade levels taught. Those who teach seniors make significantly higher use of visuals. One respondent who teach seniors reports that the new Advanced Placement (AP) test in English includes visuals that students are expected to interpret as part of the writing evaluation. Therefore, she is using more visuals in her classroom with the hope of improving students' scores in that area on the AP exam. The addition of visuals to the AP exam may also have encouraged others who teach seniors to begin including more visuals in their instruction.

Questions #5 and #6: Student Use and Document Design

Even though AP students are tested using visual means and might be expected to have developed more expertise in visual literacy, those who teach seniors rate them as having relative low competency in using visual technology. Yet, those same teachers rated themselves as

relatively high in visual technology competency. Although all teachers rate their own competency in using visual technology higher than their students', those with just a bachelor degree, who have been teaching five years or less rate themselves closer to their own students. The only other group who rates their students' competency nearly equivalent to their own are those who have been teaching over 30 years or are over 55 years old. It is not apparent if older, more experienced individuals have not kept up with technology or if they merely perceive their students to be more proficient in their use of visual technology because those students have grown up with such technology. These responses may be based on the myth that young people are better able to negotiate technology than those who grew up in a low-tech world.

Other responses that may be based on and support other myths about technology relate to gender. While males and females report approximately the same level of competence for their students in use of visual technology, males rate themselves considerably higher than females do. Also, teachers in 6A schools rate their students' competence and their own competence relatively close but higher than competence reported by teachers at schools in other size classifications. It is possible that students in larger schools may have access to more training in technology, which leads teachers there to believe that their students are more capable in using visual technology and the teachers have access in more urban and suburban areas to the type of training that would allow them to become more competent in the use of technology.

While English/language arts teachers do not have a great deal of influence over how competent their students are at using technology related to visual literacy, they do have more control over whether their students use visual literacy concepts, including document design. Again, most English/language arts apparently encourage their students to rely more on traditional concepts associated with the English/language arts discipline. For example, the mean score for

the responses to “My students use charts and graphs in their compositions” was 1.67, indicating that such use is rare. However, in most areas outside of English/language arts, charts and graphs are a vital part of expressing information in a visual manner. Also, the mean score for the responses to “My students use drawing and photographs in their compositions” was 1.78, even though both virtually all published materials now included such elements. While the low responses in these areas may be based on the bias of the discipline, it may also be based on the bias of tradition. Most respondents appeared to encourage the use of styles of expression converted from old technologies than methods commonly used in current technology. A prime example is the difference between the scores on two questions related to document design. The mean score for “My students use headings in their compositions” was 2.74, the second highest score of the questions related to students’ use of visual elements in their compositions. Yet, “My students use bulleting and numbering in their compositions” received a mean score of only 1.92, even though bulleting and number are now easily included and have become a common elements in most business and professional writing. As indicated earlier, those English/language arts teachers who responded seem to use word processor more as electronic typewriters than as a mean to allow their students to explore the possibilities of literacy provided by modern technology.

Conclusions

From the respondents surveyed, the researcher concluded that, while teacher preparatory institutions are doing a better job of training prospective teachers in how to instruct their students so that the students will develop visual literacy, the majority of English/language arts teachers still do not have a clear understanding of how to incorporate visual literacy instruction with the more traditional literacies taught in English/language arts classrooms in the past. Moreover,

school districts have done little to train teachers already in the profession to incorporate visual literacy instruction with traditional literacy instruction. In fact, because most teachers have gained knowledge in how to instruct their students in visual literacy through self-study or discussion with colleagues, the English/language arts teachers' knowledge of methods for visual literacy instruction varies widely.

This lack of systematic training in visual literacy instruction has led to teachers' not being clear on what is expected of them as they work with their students to meet the standards for visual literacy set by the state and professional organization. Because many of those surveyed pointed to the state not testing visual literacy as a reason for their not addressing the issue, the state is also at fault in the failure of most secondary English/language arts teachers in Kansas to incorporate visual literacy instruction in their classes. If teachers are more concerned with teaching what is tested, the state must incorporate assessments of all standards, including those related to visual literacy, if it expects teachers to help students meet all of those standards. In addition, national professional teaching organizations related to English/language arts, such as the National Council of Teachers of English/International Reading Association (NCTE/IRA) apparently have not spread the word to their members that English/language arts teachers are now responsible for teaching multiple literacies, including visual literacy.

The failure of preparatory institutions, the state, and professional organizations to make English/language teachers aware of their responsibility in visual literacy instruction is, however, no worse than the apparent failure of English/language arts teachers to recognize the abilities and needs of their students. Even though many of the teachers surveyed rated their students' ability with various technologies lower than their own, the teachers' failure to encourage students to use those technologies to develop all types of literacy related to English/language arts—listening,

speaking, reading, writing, viewing, and presenting visual material—cannot be excused by the teachers' own lack of training in various areas of literacy. While their students are learning naturally through all sensory modes—auditory, tactile and visual—secondary English/language arts are not using all those modes to their greatest advantage in instruction to improve their students' literacy.

Implications

Although this study may have limited application because of the small population and limited geographic area for the survey, conclusions drawn are likely to generalize to the state of Kansas and possibility the northern Great Plains area, since Nebraska and the Dakotas have populations that generally have similar make ups to the population studied. Because of the relative homogeneous racial and ethnic population in central Kansas and because of the largely rural nature of the area, large urban centers with racially and ethnically mixed populations may not be able to apply the conclusions drawn from this study. While the conclusions may not generalize beyond Kansas, post-secondary teacher training institutions and public secondary schools may want to consider how to address how they can assist English/language arts teachers with instructing their students in visual literacy.

As evidenced by responses on the survey, training alone, however, is not enough to insure that teachers use visual materials and instruct their students in visual literacy. Both preparatory institution and school districts must help English/language arts teachers realize they will need to modify their teaching styles to incorporate visual literacy concepts into the classroom in order to optimize student learning. Along with training, schools will need to make sure that teachers and students have access to visual materials in the same way that they guarantee that teachers and students have access to textbooks now. Although survey information

indicates that most teachers have computers in their rooms, it did not ask if those computers have Internet access. Making sure that all teachers have Internet access in their classroom will go far in assuring the availability of visual materials, especially if the Internet connection is accompanied by projectors in each classroom that will allow students to see the material on the Internet that the teacher has accessed.

While it is important that teachers have the training, materials, and equipment necessary to use visuals in their instruction, the impact will only be significant when instructors use their knowledge to make sure that their students are literate, alphabetically, technologically, and visually. Creating standards for English/language arts in Kansas that include instruction in interpretation and presentation of visual information has encouraged dialogue about visual literacy among some practitioners. However, measuring achievement on those standards and holding teachers to those standards has received less attention, particularly at the grassroots level in the classroom. As a result, several surveyed either did not know about standards related to visual literacy or were uncertain what was expected of the classroom teacher in addressing those standards. The state will need to emphasize to post-secondary teacher training institutions and public school systems that classroom teachers need to be aware of standards, be trained in how to address those standards, and be held accountable in student achievement of the standards.

Holding teachers accountable for students becoming visually literate will necessitate having a means of assessing visual literacy. Yet, according to those surveyed, they are not asked to test their students on visual literacy. In fact, methods to assess visual literacy have received little attention from most professionals. In English/Language Arts classrooms, assessing visual literacy often consists of providing a visual prompt to which students respond in writing. While this type of assessment has some legitimacy, it does not get at the heart of visual literacy, which

includes viewing, interpreting, and creating visual images. That English/Language Arts teachers continue to fall back on traditional literacy assessment, even when purporting to assess visual literacy, may be problematic for students who are weak in traditional literacy skills. Finding ways to assess visual literacy without relying on traditional literacy skills, will allow students to show their ability in other literacies. Assessing visual literacy using traditional paper and pencil testing makes little sense.

While testing students' ability to interpret visuals may be difficult, English/language arts teachers can easily encourage and assess their students' ability in using visual elements in communication. Expanding options for relaying information through less traditional means such as presentations, videos, magazines, poster displays and other venues that are popular both in other disciplines and at other level in English/language arts could expand students' readiness to enter a world requiring both traditional and visual literacy. Even for those English/language arts teachers unwilling to give up traditional compositions, teaching students to consider visual literacy concepts may include encouraging those students to use visual within their compositions, including charts, graphs, drawings, and photographs. Also, those teachers should make their students aware that formatting, such as bulleting, numbers, column selection, and other easily performed changes, can enhance the message of the composition.

Recommendations

For Research

This study provides incentive to other researchers to explore the differences that may exist in visual literacy instruction between homogeneous and heterogeneous populations and between rural and urban schools. Resistance to and misunderstanding of visual literacy apparent

in the population studied indicates that a study of another geographic area in Kansas may be necessary to determine if the resistance and misunderstanding is localized to central Kansas. Further research into methods that transcend all types of literacy, such as those suggested by Eisenberg & Berkowitz (1990), may stimulate secondary teachers to incorporate more strategies related to visual literacy into their traditional curricula. While English/language arts professional organizations and the state of Kansas standards include instruction in both receptive and expressive components of non-print materials, how understanding and using non-print materials affects students' understanding and use of print material is not clear.

Even though the term "literacy" is used to describe alphabetic, visual, information, and media knowledge, whether these literacies can influence one another is unclear without further research. If such research indeed discovers that instruction in the literacies mentioned complement each other, further study will be necessary to determine how to coordinate and meld instruction in the various types of literacy. Because many of the individuals surveyed in this study indicate concerns about the increased burden of being asked to teach visual literacy in the English/language arts classroom, further study may need to be conducted to determine how to incorporate visual literacy instruction with the traditional literacy instruction already taking place in English/language arts classrooms. With more teachers becoming aware of the varied learning styles and intelligences, as defined by Gardner, discussion on how to blend instruction in these varied areas, including visual literacy, may be timely. Since most people surveyed cite the availability of training, resources, and time as factors keeping them from teaching visual literacy, a study of how teachers can merge visual literacy instruction with their current practice could benefit classroom teachers and their students by addressing the need to help students develop multiple literacies. If further research is able to ferret out how best to coordinate instruction in

multiple literacies in the English/language arts classroom, additional studies will need to be conducted as to how post-secondary institutions, public school systems, state boards of education, and the United States Department of Education can encourage English/language arts teachers to model and instruct their students directly in multiple literacies.

Teacher preparatory institutions will first need to study how to instruct teacher candidates in methods that will address the demands of a society that relies on multiple literacies for information. Because teacher preparatory institutions will only be able to address the needs of future secondary English/language arts teachers, how the public schools can provide training for existing faculty will need to be studied. What equipment best serves teachers in instruction that addresses multiple literacies will be an issue for investigation. State and federal governments should not throw money for equipment and materials at a concern until the best approaches are clearly understood. Only after the optimum methods of training teachers and the best materials and equipment are identified should professional organizations, the states and the federal government review English/language arts standards. If research indicates the importance of instruction in visual literacy and that instruction in visual literacy can complement instruction in traditional literacy, then more stringent standards for teaching visual literacy in the English/language arts classroom will need to be instituted.

With those standards, appropriate ways to assess student outcomes will also be an area to explore. Through the millennia, western culture has become so reliant on alphabetic literacy that people, particularly those in education, often have difficulty understanding how to access students' ability and achievement without using alphabetic means. Questions arise regarding visual literacy in relation to both its nature and how to access it that researchers may need to explore more fully before progress can be made on the educational level. For example, is the

language of visual expression innate in humans? If so, is it possible to teach visual expression, or is it a talent that students either do or do not have? If it is an innate talent, what purpose does access visual literacy serve? Of even more importance, how can educators access visual literacy without relying on other literacies? Is it legitimate to access a students' ability to interpret a visual image by asking that students to write or speak since those methods rely exclusively literacies other than visual literacy—alphabetic and verbal. These questions may be more basic questions that need to be addressed by researchers before we can know what is important for students to learn regarding visual literacy.

If researchers can gain a better understanding of what visual literacy is and how it can be assessed, instituting stringent standards and assessing outcomes related to those standards will bring visual literacy to the awareness of many of the English/language arts instructors who now seem unaware or unclear about what is expected of them in terms of visual literacy instruction. If, however, research indicates that visual literacy instruction does not benefit students or does not complement instruction in traditional literacy, the groups mentioned will need to reconsider standards in visual literacy instruction that are already in effect.

For Practitioners

For the English/language arts instructor, materials and equipment, time, and training in visual literacy instruction are major concerns. These needs, however, are predicated on maintaining English/language arts standards that include instruction in interpretation of information presented visually and in presentation of visual information. Since increasing numbers of students have preferences for visual learning and since many of them generally get information outside of the classroom through visual media, for English/language arts professional organizations, the states and the federal government to abandon standards regarding

instructing students in visual literacy would constitutes burying their collective academic heads in the sand. Yet, if standards regarding visual literacy instruction in the English/language arts classroom remain, it seems apparent that measures need to be taken to assist English/language arts teachers in finding ways to incorporate visual literacy instruction with traditional literacy instruction.

A first step would be to incorporate units on instructing students in visual literacy in methods courses for those training to become secondary English/language arts teachers. While teacher-training preparation often stretches beyond the traditional four years of post-secondary education now, restructuring units in methods courses would not have to add semesters or years to the English/language arts teacher preparation curriculum as full courses on the subject might. Even though such a step would supply new teachers with training in instruction in how to teach visual literacy, public school systems would have to be responsible for supplying training to teachers who are already in the classroom. The state of Kansas could encourage such training by supplying seminars and in-service presentations to school systems at little or no cost to the schools. The cost of materials, equipment, and trainers would be less per presentation if the state were to make the investment than if individual schools contracted for training separately. Seminars and in-service sessions would raise awareness of the importance of visual literacy instruction in the English/language arts classroom.

Beyond training for new and existing teachers, government agencies and professional organizations will need to be more specific about their expectations regarding instruction in visual literacy. Without a clear understanding of what is meant by non-print text, visual language, visual messages, visual discourse, visual media and similar terms, teachers cannot be expected to provide students with instruction that will allow those students to view and present

visual information effectively. In addition to the need for a common, consistent language related to visual literacy, teachers will need guidance on developing student learning outcomes that address visual literacy.

Examples of such outcomes suggested by AT&T (2006) include the following:

LOCATING IMAGES

1. Use a search engine to locate images online.
2. Distinguish between images that are relevant and those that are not relevant to a search.
3. Copy images into a document.
4. Cite sources of images.

SCANNING IMAGES

5. Locate visual details.
6. Analyze an image's larger context to gain insights.

STRUCTURAL COMPARISONS

7. Identify structural elements within a composition.
8. Compare structural elements of two images.

FUNCTION OF IMAGES IN TEXT

9. Recognize that images function differently from text.
10. Realize that an image’s function is dependent on context.

Even when clear outcomes for visual literacy as established, how to evaluate whether students have reached those outcomes is still problematic for the practitioner. Assessments of the outcomes, methods to evaluate the assessments, and standards for achievement must be established. Clearly, unless outcomes and assessments for visual literacy are closely related to

outcomes for more traditional literacies, English/language arts teachers will, indeed, have a formidable task in front of them. The simplest first step seems to be to allow and encourage students to create alternative methods of expression to the traditional composition, such as PowerPoint, posters, Web pages, or video. A next step would be to allow and encourage students to use visual elements and formatting in traditional compositions. Instructors will need to realize that they are not abandoning instruction in traditional literacy to teach visual literacy but are going through an evolution in their teaching that will incorporate multiple literacies into a single form of expression. Western civilization is not likely to abandon alphabetic literacy, but it, along with other literacies may take on different forms. Practitioners must continue to exhibit flexibility in constructing curricula that will prepare their students for the future. If practitioners are able to establish standards, outcomes, and assessments that fit with the model of interrelated, multiple literacies, they may be able to avoid the top-down mandates for assessment that have plagued the public schools in the past decades in relation to traditional literacies.

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Appendices

Appendix A: Letter to Teachers Identified for Survey

Fellow English/language arts teacher:

I am writing to ask you to participate in a survey related to my doctoral dissertation for my PhD in Curriculum and Instruction from Kansas State University. The purpose of the survey is to determine teachers' attitudes toward, understanding of, and use of visual literacy in high school English/language arts classrooms in Kansas. Because I am surveying only English/ language arts teachers in high schools in Saline, McPherson, and Reno counties, I would like to have as many of you to respond as possible.

To complete the survey go to **http://www.CustomInsight.com/survey**. The survey name is "literacies", and the password is "vl". The survey should only take a few minutes to complete. When you are finished with the survey, simply hit the submit button, and the results will be sent. If possible, try to complete the survey by February 15, 2006. After that date, I will send each English department participating $2 for each survey completed for the department to use as it sees fit.

After I have evaluated the surveys, I would like to share the results with any of you interested in my findings. Again, thank you for helping me with my dissertation and adding to the understanding of visual literacy and traditional literacy in the English/language arts classrooms of central Kansas high schools.

Martha S.M. Robertson

Appendix B: Custom Insights Computer Survey Form

Responsibility for visual literacy instruction

Please indicate below your responses to questions about instruction in visual literacy.

1. Teachers should use visual materials their classroom instruction.	☐	☐	☐	☐		☑
2. Teachers should instruct students how to understand visual materials.	☐	☐	☐	☐		☐
3. Teachers should instruct students how to present visual materials.	☐	☐	☐	☐		☐
4. Visual literacy should be taught as a formal class.	☐	☐	☐	☐		☐
5. Instruction in visual literacy should receive as much time as instruction in traditional literacy.	☐	☐	☐	☐		☐
6. All disciplines should teach students how to understand visual materials.	☐	☐	☐	☐		☐
7. All disciplines should teach students how to present visual materials.	☐	☐	☐	☐		☐
8. Administrators should have primary responsibility for instructing students in visual literacy.	☐	☐	☐	☐		☐
9. English/Language Arts teachers should have primary responsibility for instructing students in visual literacy.	☐	☐	☐	☐		☐
10. Visual Arts teachers should have primary responsibility for instructing students in visual literacy.	☐	☐	☐	☐		☐
11. Media Specialists should have primary responsibility for instructing students in visual literacy.	☐	☐	☐	☐		☐

Training in visual literacy.

Indicate the statement or statements below which best describe the instruction you have received in visual literacy. Mark all that apply.

12. **What formal or informal training have you received in visual literacy?** (select all that apply)

- ☐ I was required to take an undergraduate course in visual literacy.
- ☐ I was required to take a graduate course in visual literacy.
- ☐ I took an elective undergraduate course in visual literacy.
- ☐ I took an elective graduate course in visual literacy.
- ☐ A unit in visual literacy was included in my required undergraduate classes.
- ☐ A unit in visual literacy was included in my required graduate classes.
- ☐ A unit in visual literacy was included in my elective undergraduate classes.
- ☐ A unit in visual literacy was included in my elective graduate classes.
- ☐ Visual literacy was mentioned in my required undergraduate classes.
- ☐ Visual literacy was mentioned in my required graduate classes.
- ☐ Visual literacy was mentioned in my elective undergraduate classes.
- ☐ Visual literacy was mentioned in my elective graduate classes.
- ☐ I received no undergraduate training in visual literacy.
- ☐ I received no graduate training in visual literacy.
- ☐ I received training in visual literacy at an in-service or seminar.
- ☐ I learned about visual literacy informally through others.
- ☐ I learned about visual literacy through my own study.
- ☐ I have no training in visual literacy, either formal or informal.

Use of visuals

Please indicate below your responses to the following statements about your own use of visuals in your classroom.

13. I have two-dimensional still visuals—posters, pictures, graphs, charts, maps—in my classroom.	☐	☐	☐	☐		☐
14. I have three-dimensional still visuals—statues, models, globes—in my classroom.	☐	☐	☐	☐		☐
15. I use moving visuals—movies, demonstrations, role-playing—in my classroom.	☐	☐	☐	☐		☐
16. I have a computer in my room for my own use.	☐	☐	☐	☐		☐
17. I use a computer in my teaching.	☐	☐	☐	☐		☐

Student competency in visual literacy

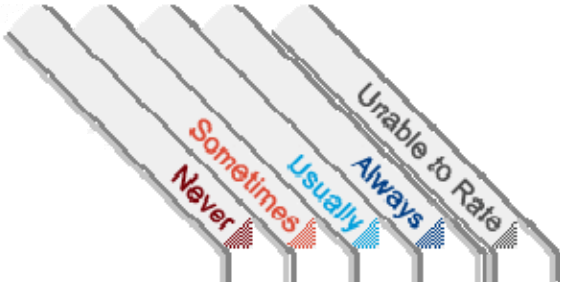
Please indicate below your responses to the following statements about your students' competency in visual literacy.

18. My students are able to use a scanner.	☐	☐	☐	☐		☐
19. My students are able to use digital still cameras.	☐	☐	☐	☐		☐
20. My students are able to edit still photos using a computer.	☐	☐	☐	☐		☐
21. My students are able to use digital movie cameras.	☐	☐	☐	☐		☐
22. My students are able to edit video clips using a computer.	☐	☐	☐	☐		☐
23. My students are able to use a computer for word processing.	☐	☐	☐	☐		☐
24. My students are able to use a computer to access information on the Internet.	☐	☐	☐	☐		☐
25. My students are able to distinguish fiction from reality in visuals.	☐	☐	☐	☐		☐
26. My students are able to distinguish advertising from articles.	☐	☐	☐	☐		☐
27. My students are able to analyze the content of visual images.	☐	☐	☐	☐		☐
28. My students know the limitations of visual images.	☐	☐	☐	☐		☐
29. My students use visuals effectively.	☐	☐	☐	☐		☐
30. My students use headings in their compositions.	☐	☐	☐	☐		☐
31. My students use bulleting and numbering in their compositions.	☐	☐	☐	☐		☐
32. My students use charts and graphs in their compositions.	☐	☐	☐	☐		☐

33. My students use drawings and photographs in their compositions.	☐	☐	☐	☐		☐
34. My students use appropriate fonts in their compositions.	☐	☐	☐	☐		☐

Teacher competency in visual literacy

Please indicate below your responses to the following statements about your own competency in visual literacy.



35. I am able to use a scanner.	☐	☐	☐	☐		☐
36. I am able to use digital still cameras.	☐	☐	☐	☐		☐
37. I am able to edit still photos using a computer.	☐	☐	☐	☐		☐
38. I am able to use digital movie cameras.	☐	☐	☐	☐		☐
39. I am able to edit video clips using a computer.	☐	☐	☐	☐		☐
40. I am able to use a computer for word processing.	☐	☐	☐	☐		☐
41. I am able to use a computer to access information on the Internet.	☐	☐	☐	☐		☐

Instruction in visual literacy

Please indicate below your responses to the following statements about how you instruct your student in visual literacy.

42. I teach students how to “read” visual images.	☐	☐	☐	☐		☐
43. I teach students how to locate or create visuals that enhance the message of their written text.	☐	☐	☐	☐		☐
44. I teach students about elements of document design.	☐	☐	☐	☐		☐
45. I teach students about visual literacy through spontaneous discussion.	☐	☐	☐	☐		☐
46. I teach students about visual literacy using media.	☐	☐	☐	☐		☐
47. I teach students about visual literacy using computers and the Internet.	☐	☐	☐	☐		☐
48. I teach students to use visuals—graphic organizers, charts, graphs—in their work.	☐	☐	☐	☐		☐
49. I have a computer in my room for students to use.	☐	☐	☐	☐		☐
50. I expect my students to use a computer when writing papers.	☐	☐	☐	☐		☐
51. I encourage students to use visuals in their written assignments.	☐	☐	☐	☐		☐
52. I allow students to present their ideas in ways other than formal essays—PowerPoint presentations, websites, visuals with explanation, or other similar media.	☐	☐	☐	☐		☐

Limitation on teaching visual literacy

Please indicate below your responses to the following statement about the limitations on teaching visual literacy.

53. I would spend more time teaching visual literacy concepts if I had the necessary materials and equipment.	☐	☐	☐	☐		☐
54. I would spend more time teaching visual literacy concepts if I had enough time.	☐	☐	☐	☐		☐
55. I would spend more time teaching visual literacy concepts if I had the training.	☐	☐	☐	☐		☐
56. I would spend more time teaching visual literacy concepts if it were appropriate to the subject I teach.	☐	☐	☐	☐		☐
57. Most teachers do not spend time teaching visual literacy concepts because of lack of time.	☐	☐	☐	☐		☐
58. Most teachers do not spend time teaching visual literacy concepts because of lack of materials and equipment.	☐	☐	☐	☐		☐
59. Most teachers do not spend time teaching visual literacy concepts because of lack of proper training.	☐	☐	☐	☐		☐
60. Most teachers do not spend time teaching visual literacy concepts because of objections from administration.	☐	☐	☐	☐		☐
61. Most teachers do not spend time teaching visual literacy concepts because of objections from parents.	☐	☐	☐	☐		☐

Visual literacy and English/language arts

Comments are often the most important part of the survey process. Please try to answer with as much detail as possible.

62. How do you respond to the Kansas English/language arts standards that require instruction in non-print text?

63. How has technology influenced the teaching of traditional literacy?

64. How has technology influenced the teaching of visual literacy?

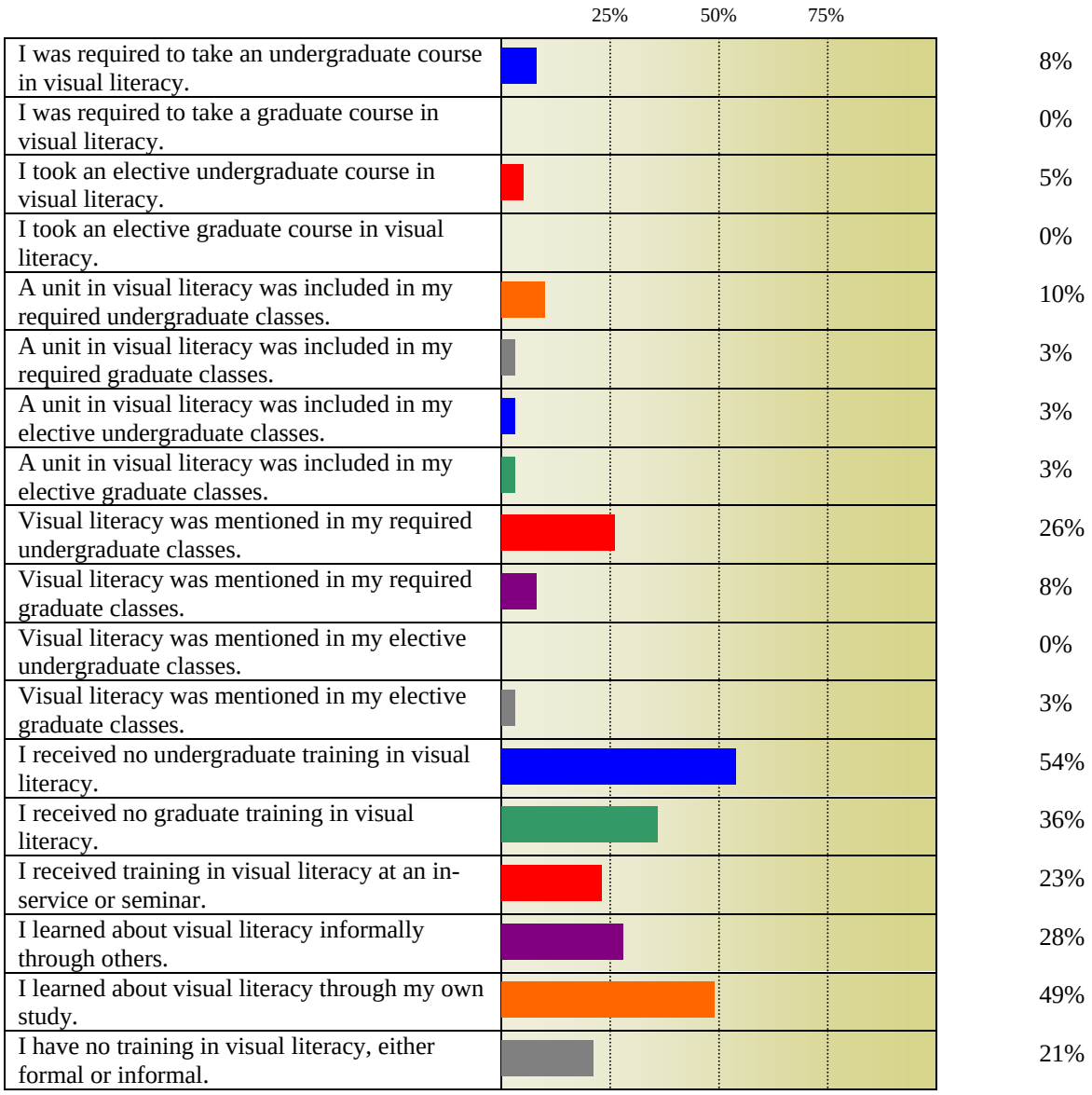
65. Please include any other comments that you have about visual literacy instruction in the English/language arts classroom.

Appendix C: Raw Scores of Responses

Responsibility for visual literacy instruction	Strongly Disagree	Moderately Disagree	Moderately Agree	Strongly Agree	Unable to Rate	mean
1. Teachers should use visual materials their classroom instruction.				0		**3.67**
2. Teachers should instruct students how to understand visual materials.			1	6		**3.56**
3. Teachers should instruct students how to present visual materials.			5	0		**3.39**
6. All disciplines should teach students how to understand visual materials.			8	7		**3.28**
7. All disciplines should teach students how to present visual materials.			0	1		**3.08**
10. Visual Arts teachers should have primary responsibility for instructing students in visual literacy.		5	6			**2.59**
4. Visual literacy should be taught as a formal class.		3	0			**2.51**
11. Media Specialists should have primary responsibility for instructing students in visual literacy.		7	6			**2.41**
9. English/Language Arts teachers should have primary responsibility for instructing students in visual literacy.		5	5			**2.31**
5. Instruction in visual literacy should receive as much time as instruction in traditional literacy.	1		5			**2.31**
8. Administrators should have primary responsibility for instructing students in visual literacy.	0	4				**1.54**

Training in visual literacy.

12. What formal or informal training have you received in visual literacy?



Use of visuals	Never	Sometimes	Usually	Always	Unable to Rate	**mean**
16. I have a computer in my room for my own use.				8		**3.95**
13. I have two-dimensional still visuals—posters, pictures, graphs, charts, maps—in my classroom.				5		**3.87**
17. I use a computer in my teaching.			4	8		**3.26**
15. I use moving visuals—movies, demonstrations, role-playing—in my classroom.			8	3		**3.13**
14. I have three-dimensional still visuals—statues, models, globes—in my classroom.		2				**2.36**

Student competency in visual literacy	Never	Sometimes	Usually	Always	Unable to Rate	mean
23. My students are able to use a computer for word processing.				4		**3.85**
24. My students are able to use a computer to access information on the Internet.				3		**3.85**
34. My students use appropriate fonts in their compositions.			5			**3.08**
26. My students are able to distinguish advertising from articles.			8			**3.03**
25. My students are able to distinguish fiction from reality in visuals.			6			**2.89**
30. My students use headings in their compositions.		2	5			**2.82**
27. My students are able to analyze the content of visual images.		2	3			**2.79**
28. My students know the limitations of visual images.		2	2			**2.35**
29. My students use visuals effectively.		5	3			**2.34**
19. My students are able to use digital still cameras.		0	4			**2.31**
18. My students are able to use a scanner.		4				**2.10**
20. My students are able to edit still photos using a computer.		7				**2.09**
21. My students are able to use digital movie cameras.		3				**2.03**
31. My students use bulleting and numbering in their compositions.		3				**1.97**
22. My students are able to edit video clips using a computer.		6				**1.90**
33. My students use drawings and photographs in their compositions.	1	5				**1.76**
32. My students use charts and graphs in their compositions.	3	3				**1.71**

Teacher competency in visual literacy	Never	Sometimes	Usually	Always	Unable to Rate	mean
40. I am able to use a computer for word processing.				9		**4.00**
41. I am able to use a computer to access information on the Internet.				9		**4.00**
36. I am able to use digital still cameras.				3		**3.28**
35. I am able to use a scanner.		1		6		**2.87**
37. I am able to edit still photos using a computer.		1		8		**2.87**
38. I am able to use digital movie cameras.	2			0		**2.40**
39. I am able to edit video clips using a computer.	8					**1.97**
47. I teach students about visual literacy using computers and the Internet.		0	1			**2.54**
43. I teach students how to locate or create visuals that enhance the message of their written text.		9	0			**2.50**
44. I teach students about elements of document design.		4	6			**2.45**
42. I teach students how to “read” visual images.		5				**2.44**
45. I teach students about visual literacy through spontaneous discussion.		0	1			**2.42**
46. I teach students about visual literacy using media.		1	0			**2.32**
51. I encourage students to use visuals in their written assignments.		9				**2.15**
50. I expect my students to use a computer when writing papers.				7		**3.62**
49. I have a computer in my room for students to use.				7		**3.31**
52. I allow students to present their ideas in ways other than formal essays—PowerPoint presentations, websites, visuals with explanation, or other similar media.		7	3			**2.68**
48. I teach students to use visuals—graphic organizers, charts, graphs—in their work.		4	7			**2.62**

Impediments to Teaching Visual Literacy	Strongly Disagree	Moderately Disagree	Moderately Agree	Strongly Agree	Unable to Rate	mean
59. Most teachers do not spend time teaching visual literacy concepts because of lack of proper training.			3	9		**3.55**
54. I would spend more time teaching visual literacy concepts if I had enough time.			9	7		**3.39**
55. I would spend more time teaching visual literacy concepts if I had the training.			6	7		**3.32**
56. I would spend more time teaching visual literacy concepts if it were appropriate to the subject I teach.			7	4		**3.32**
58. Most teachers do not spend time teaching visual literacy concepts because of lack of materials and equipment.			7	3		**3.23**
53. I would spend more time teaching visual literacy concepts if I had the necessary materials and equipment.			0	2		**3.19**
57. Most teachers do not spend time teaching visual literacy concepts because of lack of time.			5	3		**3.14**
60. Most teachers do not spend time teaching visual literacy concepts because of objections from administration.	7	1				**1.67**
61. Most teachers do not spend time teaching visual literacy concepts because of objections from parents.	2					**1.45**

Open-Ended Questions on Visual literacy and English/language arts

62. How do you respond to the Kansas English/language arts standards that require instruction in non-print text?

COMMENTS:

- Not a big focus, since it is not a big item on the state assessment test.
- My students are exposed to charts and graphs in their research for their senior projects. Because they use "careers" as their chose to research many times the materials are shown in different forms. We also read several different novels throughout the school year (Hamlet, Where the Red Fern Grows, To Kill a Mockingbird). I use books on tapes for them to follow along with, and we finish each book with the video. We actually watched two different versions of Hamlet, one modern and one of the more traditional videos.
- I'm actually torn here. On one hand, I think that in order to reach all learners, we need to present the same information in a variety of ways. If we have visual and auditory instruction along with hands-on opportunities, we can reach more students. However, I do not agree that non-print instruction should REPLACE printed instruction, especially in an English environment where students need to be able to perfect their reading comprehension. Students at this level are using MLA format for their essays; their words need to be powerful so that they don't need to rely on visual gimmicks to make their point. Why would we insist on a standard that takes away the mighty pen and replaces it with a 1,000-word photo? Ridiculous.
- I allow students to do assessments in a variety of ways including projects that visually show the the concepts students need to learn. For example, some students will reconstruct Thoreau's cabin through the reading of the material. Some students will make PowerPoint presentations. Some students will demonstrate concepts through creating videos or draw posters etc.
- I think it's fine.
- Our librarian is helping to instruct the kids in media literacy during our weekly library time.
- I wish what I was expected to do was made clearer.

- Interesting question. Non-print text is any media used to convey meaning in a non-text format--I use some cartoons, pictures and three-dimensional pieces very often to elicit text from students. For example, students in my Sr. English classes must read Beowulf for information about the character Grendel, Then they have to use the descriptive terms from the reading to create a two- or three-dimensional representation of the monster, which they must explain using the descriptive terms. I also use art-work from our library and tell students to look at the picture and then tell the story. They must create the exposition that leads to the visual episode and then provide closure to the story. Some of these are incredible. I also use graphic organizers almost daily in one form or another. So, in answer to the question of how do you respond . . . I respond very well, I think.
- I am a visual learner myself, and therefore teaching with visuals comes naturally. Whether it is a picture, a graph, a flow chart, a time line, or a video, I incorporate some sort of visual with nearly every lesson. As far as teaching visual literacy-- I am deficient in that area. Often I assume that the visual speaks for itself and perhaps abide too closely to "a picture is worth a thousand words."
- We use music and video to compare or analyze theme or concepts whenever possible. Students also turn in projects in music and video form when appropriate. Graphic organization is utilized a great deal in instruction and homework as well.
- Frankly, I was not even aware that instruction in non-print text is required; I just do it.
- I didn't know this was a standard.
- Students create a couple of different non-print presentation each year. One is to demonstrate understanding of an individual choice book they have read. Another is in creating a heritage presentation. In addition, after reading a novel together, students demonstrated understanding through projects incorporating print and non-print media.
- I don't. I teach visual literacy as students have need rather than forcing it into the curriculum. For example, it is perfectly natural to teach visual literacy in journalism class through layout instruction and photography instruction. It is also natural to teach it in speech class where PowerPoint presentations enhance a speech. (You get the idea, I'm sure.)
- I'm not excited about adding more to an already full plate. Nor am I excited about taking more time away from the art, practice, and theory of writing and analyzing literature.

- I spend some time teaching students how to read charts. I also encourage my students by having them create presentations that require a visual aid.
- I believe they are valuable to the curriculum. These non-print standards keep the Kansas education system up to par and up to speed with today's society. Non-print medias flood are world daily and in order to be an educated person you must have instruction in this area.
- I think they're fine, as long as they assess pertinent information. Sometimes students do well on them; othertimes, they're intimidated by them. Since, like in most literature, there's different "reads" to different pieces, I think it's a bit hesitant to have only one "read" on a non-print test assessment.
- I didn't know there was such a standard.
- I am not sure I understand what non-print text is. I would need an example.
- I used to teach a film class. I still use movies in the classroom and frequently discuss the major differences between film and print.
- I try to incoporate visual aides in my presentations and require them to be made and used in student's presentations. I try to prepare the kids for reading charts and graphs prior to state assessments.
- Would those be Speech standards? I don't know of any other. I sound pretty ignorant don't I?
- I'm not really sure what this means!

- Like most teachers, I am frustrated by the amount of information we are expected to cover and I understand that we cannot always spend the time we would like on certain subjects. While it is important that students achieve understaing of non-print, it is often dificult to find the time for the students who don't understand it as easily as others. Those who need more reteaching or more time to consider are often unable to receive that time because of the increasing number of items Language Arts teachers are expected to cover. I think it dovetails nicely with many other courses, and those instructors should be sure to emphasize it as a continuation of the LA process. For example, social studies analysis of propaganda, FACS looks at advertising, labeling, etc. The art and industiral art classes use a variety of diagramatic art. Computer instructions usually include visuals. Many require less interpretation, but they still reinforce the skill of analysis.
- I believe that it is appropriate and needed to require this and have no problem with it in the standards.
- Have not had any experience with doing this.
- The intent of this question is unclear. Do you mean how do I address the standard? Or what do I think about it? I teach my students to read and analyze a variety of media images from magazine advertisements to television commercials, from news photos and film clips to web sites and web pages, from charts and graphs to political cartoons. My students complete assessment projects in which they create and edit their own films, PowerPoint projects/presentations, works of art, and three dimensional models. Students are taught the importance of layout and design in technical writing. I think it is unfortunate that this is one more thing added to the insurmountable tasks already placed on English teachers and that it should be included in the standards for many additional curricular areas. Students in English classes are tested in both reading and writing at the high school level. Since the state assessments have replaced Almighty God and the emphasis of those assessments is on written literacy, that is where we as English teachers must focus our time and energies.
- As well as possible with all the extra duties.
- We work through various techniques using graphic organizers, tables, charts, etc. to enhance concepts.

- The way I respond to all of the standards; learn how they expect to assess them, and tailor instruction so that my children are prepared for that assessment.
- Evaluating Advertisements and persuasion in advertising unit. Art as journal prompts. Videos. Creating webpages/ using moviemaker to create videos. Powerpoint presentations.

63. How has technology influenced the teaching of traditional literacy?

COMMENTS:

- Students today are much more visually oriented - sometimes to the exclusion of traditional print literacy. Teachers have to be much more creative to keep students interested in traditional literature - more activities with visual elements. I do more presentations than essays sometimes.
- I believe it has changed teaching dramatically. Because students are exposed to technology they are able to use more of their senses which really helps students with learning disabilities.
- r u sirius? Technology, with its great potential to help, has actually hindered my students' abilities to decipher correct vs. incorrect usage. Because of chat rooms and Instant Messaging, we have thrown usage out of the window. This lack of quality in writing is pouring into journals, essays, etc. It's frightening. My students spend more time on grammar and usage now than they did 10 years ago.
- Technology is probably one of the most important advances we have in education. The ability to research, create, and expand our knowledge though use of computers, scanners, video camaras, the internet, DVDs, VCRs, CDs, Smart Boards, and a variety of other mediums has made technology almost inexpendable.
- I think it's been great.
- Teachers here are encouraged to use technology as often as possible in our lessons. In theory, technology can be a big asset, but in reality, small schools like ours often don't have the budget to really make it work. For example, our computer lab space is limited, so I often can't do anything that involves computers because the lab isn't available during my class time.

- Our school has laptops for all students. All writing is done on computer. Research is available at the touch of a button.
- Technology has influenced tradional literacy in many ways. First, it allowed anyone who had access to it to be able to create legible, consistent documents of text. As it evolved, it allowed for the easy re-creation of non-text artifacts (pictures or grapic representations) that could be used in a variety of contexts. Today it includes access to reproduction capabilities for almost anything, along with easy, almost instant access to graphic representations of almost anything including both text and non-text representations. Technology in its various forms can be found in almost every home and classroom, therefore, its influence is probably beyond measure.
- Technology has changed the way we teach traditional literacy. Students need, want and expect visual stimulation. As long as they have technology to accompany the text, my students are much more willing to dive into an assignment.
- Technology is moving faster than teachers/schools can keep up. I have the ideas for using technology in the classroom, but we have no funds to purchase it and no formal training in how to implement it. I'm still waiting for my overhead projector screen to get fixed; I've been asking for three semesters now. I think technology use would decrease the amount of time spent with words and paper in front of students, which could be a good thing indeed.
- Teaching literacy has been enhanced and energized by technology. Students and teachers are able to approach literacy through serveal differnt ways.
- It is easier for kids to score well on compositions, because they have spell check and grammar check on their computers. However, I worry that they are not learning the grammar concepts, just changing their errors to whatever the computer will accept.
- Technology has greatly enhanced the student's ability to "see" literature through the use of visuals. In addition, it has enabled the student to present their ideas in a way that is different from the traditional essay. Students are very good at using PowerPoint and they are coming along in using digital cameras.

- I use power point to demonstrate many grammar functions, revising their writing, incorporating better writing devices. I also use it to demonstrate and review reading skills, and to sometimes to present visual enhancements for our reading. Each week we also have visual brain teasers with a message that students try to solve and write the solution in their fournals.
- Tech has vastly changed the way I teach literacy. Literacy at the secondary level is acquired through reading practice. We read spark notes on-line, (Imagine that.) and some students read Hamlet at the "No Fear Shakespeare" site. The same is true for "Huckleberry Finn," "A Midsummer Night's Dream," and "Beowulf." (Students, if they desire, can choose to read an illustrated version of "Beowulf" on-line.) Students are PowerPoint savvy and use PowerPoint for speeches.
- Immediate access for research; word processing
- I love the power point system. It is great for quick quizes and notes.
- It has enhanced it greatly.
- Positively so.
- One example is that we have online discussion forums for some of our novels.
- It brings it to life.
- Some texts are available on-line. I required that papers be typed.
- Personally I think that students' writing and reading has been harmed. Some things are great, if used to enhance traditional literacy, not take the place. For example, the cut and paste function has killed student's ability to summarize information. It is way to tempting for many of them to cheat-not that they all do, but it has harmed traditional literacy overall. Also, the web has made avenues available for spark notes and videos to be accessible. This makes kids less apt to read and comprehend texts.
- We have more "stuff" available. It is very easy for a student to get information they can use because so much is accessible at so many different levels. That being said, there is much clutter that slows many students to the point where they accomplish almost nothing more than clicking a mouse for 40 minutes (or however long you care to have them fritter away).

- This question depends entirely on the student. Some students have enhanced their learning because of technology. Others (too many) have become lazier and do not assimilate information as well, nor understand the content as well since they can just print the information, glance at it, and then try to incorporate it without having as much background.
- In some respects, it has made it easier. We use a VPL (virtual prescriptive learning) A+ program that helps with literacy, making lessons more individual for each student.
- Many students seem to rely on spell check too much. Homophones are consistently incorrect, and the computer can't always catch it. Students have more access to helps like Spark Notes and have less patience with reading entire works of literature. They want the answers immediately from Google--no waiting! Becuase of this they often miss out on some wonderful literary experiences.
- I think it has helped mostly, but there are instances where technology may have a negative effect on traditional literacy.
- More and easier access to finding examples and/or information. Better ability to write and edit papers.
- Remember how students used to think if they saw it in print, it must be the truth? Now they think if it is on the internet it must be truth. On the internet, students are bombarded with misinformation, both written and visual, and we must continually work with them to develop the tools necessary to discrimate between what it is reliable and what is unsubstantiated or outright lies. Teachers have discovered they must teach composition in a different way (usually through in class writing and not homework, for example) to help prevent against a growing trend at "cut and paste" plagiarism. On a more positive note, the technology/equipment available in my building allows students a variety of creative outlets for demonstrating learning; we have digital cameras which allow students to take still shots as well as films, and we have i-Movie and MovieMaker available for editing. We have a computer system which allows students and teachers the opportunity to show PowerPoint presentations and web site or pages on large screen televisions in the classroom. The internet allows them to make connections with professionals as well as classrooms across the country and/or world. Many students in our school are assigned to post to blog sites related to the content of their coursework which generates an entirely different kind of conversation than the ones that develop with the confines of a traditional classroom.

- Made it more enjoyable for students.
- It has finally moderized it. It is the direction our students are heading whether education does or not!
- It has made information more readily available, reducing the amount of time needed to gather materials and prepare for classes.
- It provides more choice, variety, and opportunity.
- Kids are more interested!

64. How has technology influenced the teaching of visual literacy?

COMMENTS:

- Technology can be a great tool - if you know how to use it. I would love to do more things like digital movie editing and digital photos, but our school does not have the equipment or the money to purchase it.
- Again, I would have to say that the more ways we have to teach our students the better chance they have to learn and retain the information.
- With a wealth of information at our fingertips, it has helped immensely.
- I believe technlogy has made visual literacy expand a great deal giving students more one on one instruction, while at the same time allowing students to become more diversified.
- I think it has helped different learning needs.
- Technology allows more access to visual literacy.
- There are more possibilities available with laptops, etc.
- See the previous answer.

- I think it has increased the teaching of visual literacy but not at the pace possible. $$$
- These are visually-oriented kids; they have been raised that way. I think it almost gives teachers more credibility with students when they see that the teacher can handle the same types of technology that they are well-versed in.
- I use PowerPoint EVERY day. It is much better than using an overhead transparency. I also use video clips or rarely an entire video to supplement a unit of literature. I also sometimes use images from google or that have been taken on my own digital camera. All of these make a lesson plan much more interesting to the students.
- It has not.
- I t makes the teaching of visula liteacy much more hands on. It makes my job easier because I can use examples.
- Again, it has enhanced it greatly.
- Much more so, but we can't just toss the other aside, when assessments at the college level haven't yet progessed here.
- Not sure.
- I thought I just answered that.
- It has created some horribly boring powerpoint presentations.
- I think it makes it easier, because it is more fun for students to do hands on things, and computers allow them to make them in neater ways.
- It has made a tremendous amount available. If we read a story about Arawak Indians it is very easy to Google up drawings of art, architechture, etc. to show how they lived (just one example that I happened to use today) you can easily show it on screens or have the kids Google up info on the school's computers.
- Technology has definitely improved any aspect of visual literacy, especially since our students often know more about the capabilities of computers, digital cameras, etc.

- This is the same question as #63!
- Greatly improved it.
- Allowing them the use of "visuals" for their papers/presentations if they so desire.
- We can easily access news photos and films of current interest on the internet and on Safari. We can easily access a variety of great works of art through the internet. We can easily access current political cartoons. Overall, it is much easier to access the materials needed to teach visual literacy.
- ilmproved.
- It has created multiple opportunities.
- Impressive visual components are now available to most students; in addition, this technology is now so much a part of my students' lives, that they come to school with significant skills in the preparation and presentation of technologically enhanced projects. There is little to nothing they need to be taught by us in that regard.
- More resources
- Made it MUCH easier!

65. Please include any other comments that you have about visual literacy instruction in the English/language arts classroom.

COMMENTS:

- I think visual literacy is becoming more and more important. Students are not able to properly distinguish truth from fiction when viewing information from media sources. If it's on the Internet, it must be true. They also need more instruction on how to read propaganda materials.
- I have found that students perform best when visual literacy is used as a possible form of assessment as well as instruction and discussion. It helps to accomodate many learning styles.

- I still need a clearer working definition of what visual literacy means.
- Strictly focusing on the teaching only of text is as archaic as requiring students to study only Latin. The world has grown past it. While it may be important to teach at some level, it can no longer be the only thing that is taught. We live in a culture that is rich with images and the success or failure of individuals within that culture will be dependent upon their abilities to not only interpret but also to communicate in the "graphic" language of the culture. We, as educators, have a responsibility to do that.
- Give me the equipment and training, and I'll do it with a smile.
- It really helps my visual learners; we do a survey at the beginning of the year to determine which way each student learns best.
- Teachers need to be formally taught about using PowerPoint effectively. Many use fonts or colors that are too hard to read, they cram too much on a slide, or they add too many bells and whistles to the presentation that detract from the message. A number of colleges are offering weekend classes in using visual literacy media that have been very helpful (Ottawa University is excellent).
- It helps me connect with visual learners
- It is not really a priority in our building, but I think most teachers do try to incorporate it. We do have some curriculum objectives in place in language arts for the state standard. I know students prefer to do visual presentations over writing, but they definitely need to be writing. I know ALL students could use training in effective PowerPoint making.
- I believe that a film class is a must for any school that has the space and resources for it. It can be a fine arts elective or a language arts elective. Our students watch many films, but few have a real grasp of film history or techniques.
- I wish I had the training and the equipment to make quality video that could be e-mailed or downloaded to school website.
- I think I would benefit with more training in this area. Students are still predominantly taught traditional literacy. They would benefit from more visual literacy, but I would like to hear more things that are important to teach in this area.

- With more time and more equipment could do much more
- time time time time time time. Maybe we need to double the number of hours students spend in English classes in high school. I think I am a pretty effective teacher and an optimistic one, but I am beginning to wonder how I will ever accomplish all the tasks placed on me by the local curriculum, state mandates, and the crucial need to adequately prepare juniors for what amounts to three weeks of class time lost to testing.
- Would do more if there were time.
- It is a tool with which to enhance instruction. Nothing more, nothing less.
- Right now, in our ancient PC lab, trying to produce digital stories and sometimes even powerpoints, is quite a chore. A Mac lab with iMovie would certainly bump up our visual literacy!

Appendix D: Demographics of Area Surveyed

SCHOOL	PARTICPANTS	TEACHERS	ENROLLMENT*	Estimated Total Enrollment	Approximate Student/ Teacher Ratio	CLASSIFICATION*	CITY	POPULATION**	COUNTY	POPULATION**
Hutchinson	7	13	1019	1350	104	6A	Hutchinson	40787	Reno	64790
Salina South	3	10	821	1090	91	5A	Salina	45679	Saline	53597
Salina Central	9	10	764	1015	85	5A	Salina	45679	Saline	53597
McPherson	3	8	626	830	92	5A	McPherson	13770	McPherson	29554
Buhler	5	7	485	645	72	4A	Buhler	1358	Reno	64790
Smoky Valley	2	5	239	315	63	4A	Lindsborg	3321	McPherson	29554
Haven	1	4	223	300	75	4A	Haven	1175	Reno	64790
Nickerson	1	4	218	290	73	4A	Nickerson	1194	Reno	64790
Southeast of Saline	3	4	193	250	63	3A	Gypsum	414	Saline	53597
Inman	3	3	112	150	50	2A	Inman	1142	McPherson	29554
Moundridge	1	2	105	140	70	2A	Moundridge	1593	McPherson	29554
Ell-Saline	0	2	101	135	68	2A	Brookville	259	Saline	53597
Canton-Galva	0	2	95	125	63	2A	Canton	829	McPherson	29554
Fairfield	1	2	87	115	58	2A	Langdon	72	Reno	64790
Pretty Prairie	0	2	79	105	53	1A	Pretty Prairie	615	Reno	64790
Total	39	78	5167	6855	87.88			112208		147941

*Enrollment and classification reflect information from the Kansas High School Activities Association. Enrollment numbers are only for students in grades 10-12.

**Population figures are from the 2000 U.S. Census.