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# Beliefs About Technology and the Preparation of English Teachers: Beginning the Conversation

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## Preface

The May 2005 National Council of Teachers of English (NCTE) Conference on English Education (CEE) Leadership and Policy Summit brought together over 75 past, present, and future leaders of CEE from across the United States to Georgia State University to rethink issues related to the preparation and continuing professional development of English language arts teachers and teacher educators (see the [Leadership and Policy Summit home page](#)). [**Editor's note:** URLs for hotlinks can be found at the end of this paper in the [Resources](#) section.]

The goal of the working meeting was to assemble a collective knowledge base and a series of written position papers to guide future policy efforts of English teacher preparation and development in this country. For more details on the summit itself, see "[Reconstructing English Education for the 21st Century: A Report on the CEE Leadership and Policy Summit](#)," co-authored by Suzanne Miller, CEE Chair, and Dana Fox, CEE Leadership and Policy Summit Chair.

As Miller and Fox (2005) explain,

The CEE Summit was not merely an intellectual retreat but a [working meeting](#) consisting of small group sessions for discussion and writing as well as plenary sessions for critical conversations on vital issues and reporting out to whole group. Collaborating in small thematic inquiry groups, [invited participants](#) from various educational institutions across the United States worked together electronically for two months prior to the Summit and then face-to-face in Atlanta for three days to develop a framework of critical CEE issues and ideas and to begin to develop an action agenda.

The following article represents the initial draft of one of the position papers resulting from the work of participants in the “What do we know and believe about multimodal literacies and digital technologies in English education?” thematic strand group of the CEE summit. This initial beliefs statement is being co-published online by both the English section of *Contemporary Issues in Technology and Teacher Education* (CITE Journal), and CEE. As such, the original version is also located on the [NCTE CEE Web site](#).

As part of the rationale for this tentative beliefs document being published in the CITE Journal, the participants and authors in the CEE Summit multimodal literacies and digital technologies strand are inviting and encouraging short responses to this initial draft in the form of commentaries, which will be reviewed for publication in a commentary strand linked to the original article. The commentary feature takes advantage of an interactive medium to develop an ongoing, peer-reviewed dialog that, in this case, will be used to inform the revision of this tentative beliefs statement about technology and the preparation of English teachers.

Commentaries for this call for submissions should be submitted for review by February 1, 2006, and they may be submitted online by clicking on the submissions link at the top of this page or by using the following direct link: <http://site.aace.org/newpubs/index.cfm?fuseaction=Info.CITEEntrance>. Reviews for these commentaries will be expedited, and commentaries accepted for publication will appear in the March 2006 issue of the CITE Journal.

### **Introduction**

English educators are charged to prepare preservice and in-service teachers to consider not only the ways in which we engage in meaning-making by using a variety of representational, interpretive, and communicative systems, but also to consider the synergistic relationships that exist between readers, writers, texts, contexts, and the situations in which texts, in their many forms, are written and read. Pope and Golub (2000) and Young and Bush (2004) provide important insights into preparing current and future English language arts teachers to use technology effectively, including methods for evaluating technology applications for their classrooms. However, challenges continue to mount. Today, new technologies are changing the types of texts we and our students create and interpret even as they are influencing the social, political, and cultural contexts in which our texts are composed and shared. Since these technologies are influencing the development of individuals, institutions, and communities (and since individuals, institutions, and communities are shaping these technologies and their uses), it is essential for English educators to turn a critical eye toward the benefits and affordances; the limitations and liabilities of integrating these newer technologies into our teaching.

Andrew Feenberg (2002) and Bob Yagelski (2005), among others, have warned educators not to conflate the adoption of newer technologies with progress. In other words, both men caution us not to view the integration of newer technologies into English language arts and literacy teaching as scaffolding innately and universally desirable outcomes—or as determinist. The development of new technologies and the decision to integrate them into teaching and learning lives is neither a foregone conclusion nor following a predetermined trajectory. Teachers, individually and collectively, have the capacity and the responsibility to influence the development, modification, adoption, and/or rejection of newer technologies. In order to make these critical decisions, they will need to understand not only how to use these technologies, but also the benefits and costs their adoption and integration into English language arts and literacy teaching have the

potential to create for teachers, students, and the broader community. Since best practice in teaching requires that teaching be specific to individual students, classrooms, and communities, such decision-making will require additional research on the classroom at local as well as national levels.

The impact of these new technologies has been sufficiently pervasive that a document of this length can only be suggestive of the issues that these technologies raise for educators. We will not, for instance, take up such serious issues as childhood obesity that often results, at least in part, from more hours spent at the computer terminal than in outdoor play, or the gender gap between the interest of young women and young men in computer tasks that go beyond word processing and surfing the Internet. Although we will touch on them, we can't do justice to such grave problems as the continuing digital and didactic divides that follow race and class lines, or the ability of the ruthless to use newer technologies to exploit others, particularly children and the elderly. We will, however, identify some of the major issues our profession will need to consider if we are to offer the best possible educational opportunities for our students and their students. In our discussion, we use a number of terms that warrant further explanation and, as such, we offer the following definitions:

**Focus Area:** Defining terms, defining purposes, defining the outcomes of an exponentially increasing rate of innovation. We are struggling to develop a shared language for interrogating the ways in which newer technologies are influencing our conceptions and performances of best practice in English language arts/literacy education.

**Implications:** Multimodal, multiliteracies, newer technologies, new media, new literacies; on-line courses, virtual courses, hybrid courses; technology as tool, technology as literacy, technology as culture. The word "technology" encompasses so much that it carries little meaning. As we continue to parse it to make it more specific, our conversations about its benefits and liabilities will become more useful.

**Belief Statements:** We have not yet reached consensus on what we are talking about when we talk about integrating "technology" into teacher preparation. In order to enhance our readers' ability to offer beneficial critique of our work, we offer in the annotations below, our definitions for specialized terminology we are using in this document.

**Annotations—[Wikipedia](#):**

**Cybernetics:** This discipline intersects neurology, electronic network theory, and logic and studies communication and control in living beings or machines.

**Digital Storytelling:** Digital Storytelling reflects both a broad reference to the emergent new forms of digital narratives (Web-based stories, interactive stories, hypertexts, and narrative computer games), as well as the specific approach of creating short digital films developed by the Center for Digital Storytelling.

**Digital Technologies:** A digital system is one that uses numbers, especially binary numbers, for input, processing, transmission, storage, or display, rather than a continuous spectrum of values (an analog system) or non-numeric symbols such as letters or icons. The distinction of "digital" versus "analog" or "symbolic" can refer to method of input, data storage and transfer, the internal working of an instrument, and the kind of display. The word comes from the same source as the word digit and digitus: the Latin word for finger (counting on the fingers) as these are used for discrete counting. The word *digital* is most commonly used in computing and electronics, especially where real-world information is converted to binary numeric form as in digital audio and digital photography. Such data-carrying signals carry either one of two electronic or optical pulses, logic 1 (pulse present) or 0 (pulse absent). The term is often meant by the prefix "e-", as in e-mail and ebook, even though not all electronics systems are digital.

**Grammars:** Grammar is the discovery, enunciation, and study of rules governing the use of language. The set of rules governing a particular language is also called the grammar of the language; thus, each language can be said to have its own distinct grammar. Grammars evolve through usage and human population separations. With the advent of written representations, formal rules about language usage tend to appear also. Formal grammars are codifications of usage that are developed by observation. As the rules become established and developed, the prescriptive concept of grammatical correctness can arise. This often creates a gulf between contemporary usage and that which is accepted as correct.

**Instant Messenger (IM):** Instant messaging requires the use of a client program that hooks up an instant messaging service and differs from e-mail in that conversations are then able to happen in realtime. Most services offer a "presence awareness" feature, indicating whether people on one's list of contacts are currently online and available to chat. This may be called a "Buddy List." In early instant messaging programs, each letter appeared as it was typed, and when letters were deleted to correct typos this was also seen in real time. This made it more like a telephone conversation than exchanging letters. In modern instant messaging programs, the other party in the conversation generally only sees each line of text right after a new line is started. Most instant messaging applications also include the ability to set a status message, roughly analogous to the message on a telephone answering machine.

**Internet:** The Internet, or simply the Net, is the publicly accessible worldwide system of interconnected computer networks that transmit data by packet switching using a standardized Internet Protocol (IP) and many other protocols. It is made up of thousands of smaller commercial, academic, domestic and government networks. It carries various information and services, such as electronic mail, online chat, and the interlinked web pages and other documents of the World Wide Web.

**LCD Projector:** An LCD projector is a device utilized for displaying video images or data. They are the modern equivalent to the slide projector and overhead projector used in the past.

**Massively Multi-player On-line Game:** A massively multiplayer online game (MMOG) is a type of computer game that enables hundreds or thousands of players to simultaneously interact in a game world they are connected to via the Internet. Typically this kind of game is played in an online, multiplayer-only persistent world. Some MMOGs are played on a mobile device (usually a phone) and are thus Mobile MMOG or MMMOG or 3MOG.

**Media Studies:** Media studies is a social science that studies the nature and effects of mass media upon individuals and society, as well as analyzing actual media content and representations. A cross-disciplinary field, media studies uses techniques and theorists from sociology, cultural studies, psychology, art theory, information theory, and economics.

**Modes:** In linguistics, mode is the channel of communication such as spoken, written or signed.

**MOOs / MUDs:** In computer gaming, a MUD (multi-user dungeon, dimension, or sometimes domain) is a multi-player computer game that combines elements of role-playing games, hack and slash style computer games, and social chat rooms. Typically running on a bulletin board system or Internet server, the game is usually text driven, where players read descriptions of rooms, objects, events, other characters, and computer-controlled creatures or non-player characters (NPCs) in a virtual world. They may interact with each other and the surroundings by typing commands that resemble a natural language, usually English.

Traditional MUDs implement a fantasy world populated by elves, goblins, and other mythical beings with players being able to take on any number of classes, including warriors, mages, priests, thieves, druids, etc. The object of the game is to slay monsters, explore a world rich in fantasy and with adventure, and to complete quests. MUDs are typically fashioned around the dice rolling rules of the Dungeons & Dragons (D&D) series of games.

MUDs typically have a fantasy setting, while others are set in science fiction-based universe. Still others, especially those which are based on MOOs, are used in distance education or to allow for virtual conferences. MUDs have also attracted the interest of academic scholars from many fields, including communications, sociology, law, and synthetic economies.

**Multimedia:** Multimedia literacy is a new aspect of literacy that is being recognized as technology expands the way people communicate. 'Multimedia' is the use of several different media to convey information (text, audio, graphics, animation, video, and interactivity). As personal computers and their software become more powerful they have the capacity to record and edit sound, still images and video and manage interactivity. This places multimedia creation in the hands of any computer. As multimedia becomes a more prevalent form of communication it becomes important to understand the literacies of "reading" and "writing" using multimedia, and for these skills to be taught in schools and other education institutions.

**Multimodal:** A multimodal user interface provides the user with more than a single mode of interaction. The most common such interface combines a visual modality (e.g., a display, keyboard, and mouse) with a voice modality (speech recognition for input, speech synthesis and recorded audio for output). However other modalities, such as pen-based input or haptic input/output, may be used. Multimodal user interfaces are a research area in human-computer interaction. The advantage of multiple modalities is increased usability: the weaknesses of one modality are offset by the strengths of another. On a mobile device with a small visual interface and keypad, a word may be quite difficult to type but very easy to say (e.g., Poughkeepsie).

**New Literacies:** For the contemporary world, literacy now comes to mean more than just the ability to read, write and be numerate. It involves, at all levels, the ability to use and communicate in a diverse range of technologies. Since the computer became mainstream in the early 1990s, its importance and centrality in communication has become unassailable. We should now, properly, speak of "literacies". These literacies always involve technology and the ability to use technology to negotiate the myriad of discourses that face us in the modern world. These literacies concern using information skillfully and appropriately, and are multi-faceted and involve a range of technologies and media. One such group of literacies that is growing in significance as personal computers become more powerful is multimedia literacy.

In sum, today's students need to cope with a complex mix of visual, oral, and interactive media as well as traditional text. People of lesser education or older people may see themselves falling behind as the informational gap between them and the people literate in the new media and technologies widens.

**New Media:** New media usually refers to a group of relatively recent mass media based on new information technology. It is based on computing technology and not reducible to communication in a traditional sense. Most frequently the label would be understood to include the Internet and World Wide Web, video games and interactive media, CD-ROM and other forms of multimedia popular from the 1990s on. The phrase came to prominence in the 1990s, and is often used by technology writers like those at Wired magazine and by scholars in media studies. The term has garnered negative connotations due to techno-utopian claims by new-media proponents about the revolutionary social and personal benefits of new media; the claims of revolutionary transformation of people's lives were widely seen as unjustified. All the same, new media have only grown in popularity, and their current ubiquity is slowly causing social changes; their initial proponents' error may have been in the speed with which they claimed media would transform society, rather than the prediction itself.

**Personal Digital Accessory (PDA):** Personal digital assistants (PDAs or palmtops) are handheld devices that were originally designed as personal organizers, but became much more versatile over the years. A basic PDA usually includes a clock, date book, address book, task list, memo pad, and a simple calculator. Many PDAs can access the Internet

via wireless or mobile 'phone technology. One major advantage of using PDAs is their ability to synchronize data with a PC or home computer.

**Podcast:** Podcasting is a method of publishing audio and video programs via the Internet that lets users subscribe to a feed of new files (usually MP3s). It became popular in late 2004, largely due to automatic downloading of audio onto portable players or personal computers. "Podcasting" in its strictest sense is distinct from other types of online media delivery because of its subscription model, which uses a feed (such as RSS or Atom) to deliver an enclosed file. Podcasting enables independent producers to create self-published, syndicated "radio shows," and gives broadcast radio programs a new distribution method. Listeners may subscribe to feeds using "podcatching" software (a type of aggregator), which periodically checks for and downloads new content automatically.

**Semiotics:** Semiotics—also known as semiology—is the study of signs, both individually and grouped in sign systems, and includes the study of how meaning is transmitted and understood.

**Streaming media:** Media that is consumed (read, heard, viewed) while it is being delivered. Although it is generally used in the context of certain content types ("streaming audio," "streaming video," etc.), streaming is more a property of the delivery systems employed to distribute that content. The distinction is usually applied to media that are distributed over computer networks; most other delivery systems are either inherently streaming (radio, television) or inherently non-streaming (books, video cassettes, audio CDs).

**Text Messaging:** Short message service (SMS) is a service available on most digital mobile phones that permits the sending of short messages (also known as text messages, messages, or more colloquially SMSes, texts or even txts) between mobile phones, other handheld devices and even landline telephones.

**Visual Literacy:** Visual literacy is the set of skills involved in the interpretation and criticism of images. It is a field of study in academia, drawing on art history and criticism, information design and graphic design, and computer interface usability. It is also a goal of education paralleling linguistic literacy. The basic skills of visual literacy include the vocabulary of concepts necessary for understanding and discussing images.

**Web log (Blog):** A weblog or blog (derived from web + log) is a web-based publication consisting primarily of periodic articles (normally, but not always, in reverse chronological order). Although most early blogs were manually updated, tools to automate the maintenance of such sites made them accessible to a much larger population, and the use of some sort of browser-based software is now a typical aspect of "blogging."

**Wi-Fi:** Wi-Fi (sometimes written Wi-fi, WiFi, Wifi, wifi) is a trademark for sets of product compatibility standards for wireless local area networks (WLANs). Wi-Fi, short for "Wireless Fidelity," was intended to

allow mobile devices, such as laptop computers and personal digital assistants (PDAs) to connect to local area networks, but is now often used for Internet access and wireless VoIP phones. Desktop computers can use Wi-Fi too, allowing offices and homes to be networked without expensive wiring.

**Wiki:** A wiki is sometimes interpreted as the abbreviation for “what I know, is,” which describes the knowledge contribution, storage, and exchange up to some point. A wiki is a Web application that allows users to add content, as on an Internet forum, but also allows others (often completely unrestricted) to edit the content. The term wiki also refers to the collaborative software (wiki engine) used to create such a website (see wiki software). In essence, the wiki is a vast simplification of the process of creating HTML pages, and thus is a very effective way to exchange information through collaborative effort.

**World Wide Web:** “WWW,” “W3,” or simply “Web” is an information space in which the items of interest, referred to as resources, are identified by global identifiers called Uniform Resource Identifiers (URIs). The term is often mistakenly used as a synonym for the Internet, but the Web is actually a service that operates over the Internet.

**Zine:** A zine—a contraction of the word fanzine—is most commonly a small circulation, non-commercial publication of original or appropriated texts and images. Zines are written in a variety of formats, from computer-printed text to comics to handwritten text. Zines are seldom copyrighted and there is a strong belief among many zine creators that the material within should be freely distributed.

Building on the categories above and for the purposes of this paper, we have decided to organize our beliefs about technology and teacher preparation in relation to four major foci:

1. Newer technologies v. newer literacies.
2. The influence of newer technologies on theories informing our thinking about text, language, and literacy.
3. Composing with multimodal and multimedia technological tools.
4. The political, economic, and socio-cultural influences operating under the practice of new literacies with new technologies.

Each focus section will include some, if not all, of the following: a description of the focus, implications, belief statements, annotations, a consideration of what these beliefs might mean for teaching and for teachers.

### **Focus 1: Newer Technologies v. Newer Literacies**

Focusing on teaching new technologies rather than English language arts/literacy learning is shortsighted, since many newer technologies have relatively short lifespans. On the other hand, many new literacies and modes of inquiry require direct instruction on the use of hardware, peripherals, software, and interfaces.

**Belief Statements:**

- As Neil Postman (1996) invited us to do a decade ago, English educators need to become more vocal about their conceptions regarding the ultimate objectives of language and literacy education.
- Time to prepare for teaching and time with students are finite resources. With their ultimate objectives in mind, English educators might consider what is gained (including the affordances that are only available through the effective integration of technology into our teaching) and lost (including the limitations of technologies to help us achieve our objectives) in committing time to teaching and learning new technologies and literacies. Yet, as Guenther Kress and Theo Van Leeuwen (2001) reminds us, we are at the early stages of understanding the influence of multi-modality on our lives, meaning-making and learning:

. . . [Giving preferential attention to one mode or another, or multiple modes] depends on your interest, on who you are and what you do, what will put most weight on the scale, the things that were or the things that will be, the losses or the gains. But what is lost may return, and what is gained may yet turn out to be a loss. The new technologies' emphasis on multi-modality, three-dimensionality and interactivity can be seen as a return of many of the things that were lost in the transition from "orality" to "literacy," as a "secondary orality," in other words (Ong, 1977). But the search for immersion, 3D virtual reality and interactivity, and the advent of "cyberculture," may also signify the most profound loss of embodiment we have seen yet. . . (p. 92).

- English educators need release time and access to newer technologies in order to critically and productively evaluate their potential.
- Preparing English educators to model effective integration of technology into their teaching will be of little use if their students and their students' students don't have adequate access to those technologies.

**Annotation:**

Newer technologies present a conundrum for many English educators. Most teachers would agree that the best teaching is student centered, outcomes oriented, theoretically sound, contextually appropriate, and research based. The difficulty English educators face is in effectively evaluating the potential of newer technologies unless they commit to personal explorations. These new technologies have spawned a wide array of new venues, semiotic systems, genres, and issues for English educators and their students, and the learning curves for each (for instance, teaching in online environments, developing a better understanding of visual literacy, composing Web sites, or studying new intellectual property laws) is usually steep. Existing research on the impact of newer technologies on students' literacy tends to be anecdotal and descriptive rather than definitive and prescriptive.

A document of this length cannot address the multitude of ways in which newer technologies or repurposed older technologies have changed our lives. Pat Sullivan (1991) views these implications as so serious that she encourages us to think of newer technologies as "change agents" rather than tools; Walter Ong (1982) suggests that we consider the ways in which these technologies change the way our students compose their thinking; and Jim Porter (2002) reminds us to consider the ways in which the

technologies we have used have shaped our ideologies—including our perceptions of the values and limitations of newer technologies.

**Implications for Teaching:**

Technologies we have used have shaped our ideologies—including our perceptions of the values and limitations of newer technologies. The following belief statements are an attempt to suggest the possible changes that consideration of such technologies might stimulate.

**Belief Statement:**

- Newer technologies have altered the space in which the study of meaning-making and meaning-makers occur and these changes have important implications for teachers, learners, and communities.

**Annotation:**

Formerly, the K-16 students' study of literacy and language was largely faculty driven and occurred primarily in classrooms (and to a lesser extent as independent study in students' homes, libraries, and museums). Today, newer technologies have created additional sites for teacher and student learning. Students have a far wider array of "spaces" in which they can participate as active learners. These include, for instance, online and hybrid courses offered by individuals, schools, educational consortia, universities and bookstores; Web sites, wikis, and blogs created by professionals in various fields as well as by enthusiasts and other students; and a growing array of games. We were amazed at the ability of our students to master geography as they played *Where in the World is Carmen Sandiego?* decades ago. Many of our students have had the experience of entering an alternative, persistent work where they assume alternative personalities, address new challenges, and receive new rewards. In many instances, students are engaged in these worlds with peers from many other countries. This is an area, Gee (1993) reminds us, that has great potential, but has not yet been sufficiently studied.

Frequency and duration of contacts between English educators and their students and in-service teachers and students can increase in both frequency and duration through the use of newer technologies. These new instructional sites offer English educators and their preservice students opportunities to engage with in-service teachers and students in a wider variety of community settings (urban, suburban and rural; high, middle, and low-income; racially homogenous and diverse) and courses (in writing, literature, and/or drama courses; and in disciplines other than English) than they could experience in real time and face to face.

These new technologies, however, offer new challenges. Many teacher educators do not have access to newer technologies, and, if provided access, will also require professional development opportunities that allow them not only the opportunity to learn functional aspects of the technology, but also opportunities to think critically about pedagogical concerns (with whom, when, where, how, why, and to what extent to use them), and about the intellectual, social, cultural, political, and economic impact of using them.

These newer technologies will allow English educators to follow cohorts of new teachers during their induction years and to provide additional support at the point of need during this critical period of a teacher's career. In addition to the widely adopted listservs for continued professional development, new videoconferencing interfaces may go far to

address some of the many reservations that faculty have had regarding on-line courses and distance learning. With an opportunity for all students and the teacher to interact synchronously and to view simultaneously real-time audio and video of one another as well as a shared whiteboard on which they can all write and share software they all can use may mediate some of those concerns. Those who value the informal or co-curricular learning opportunities that students who can afford to become residents of college campuses enjoy will be challenged to imagine how to create new informal, co-curricular opportunities for students who study and learn primarily or exclusively in these new spaces.

As some courses move on-line or become hybrids of on-line and face-to-face teaching, educators are finding that students who enjoy ubiquitous computing also expect a ubiquitous faculty. As teachers increase the means and methods through which they make themselves available to their students, they will need to consider at what cost that availability comes:

- Tutoring
- Involves more parties (takes an entire village, parents, community members)
- Web sites for the classroom
- Expectations that change in on-line environments sponsored by faculty compared to their personal use
- E-mail decline in civility, how affecting people out of this space; rudeness of talking on phone in public space; parentis en locus,
- Classroom Web sites (expectations of teacher responses)

### **Focus 2: The Influence of Newer Technologies on Theories Informing Our Thinking About Text, Language, and Literacy**

Theories to inform our thinking about text, language, literacy, as influenced by the latest technologies, is another important consideration. Areas related to this focus would include, for instance, semiotics, grammars of newer literacies, and languages being developed by newer technologies.

#### **Implications for Teaching:**

These theories inform our thinking about learning, teaching, and our ways of thinking about text, language and literacy in general.

#### **Belief Statements:**

- Digital technologies change print-based concepts of text.
- Digital technologies change print-based concepts of reader.
- Digital technologies require new literacy strategies.

#### **Annotation:**

Digital texts both imitate and expand existing print forms. Some digital texts share common forms and common purposes: the online newspaper, for example, is similar in many ways to its print-based counterpart. At the same time, digital texts possess characteristics that are unique to the digital medium, challenging our ideas about what texts are and how they work. More specifically, digital texts may be hypertextual and multimodal, linking to a multitude of other texts; they are dynamic, changing content in

real time. Also, they are indeterminate, with no definite beginning or end, and multimodal, incorporating visual, auditory, and other non-verbal elements. New digital genres, such as web pages, web logs, multi-user virtual environments like MOOs and MUDs, and collaborative writing platforms like wikis and threaded discussions are evolving and new digital grammars emerge with each new form.

Translating print texts into digital format also alters the ways they transmit meaning and the ways in which they are accessed. As publicly accessible online archives make more and more texts available—from fiction to non-fiction, from classic to contemporary, from the academic to the mainstream—our study of texts will continue to change. Online archives have the potential to resituate print works within rich multimedia contexts, to expand the boundaries of texts through links to biographical, historical, and other connective texts, and to widen the canon to include previously marginalized writers and genres formerly underrepresented in the print medium.

Like the reader of print texts, the reader of digital texts takes an active role in the creation of meaning. Digital texts can expand this role by allowing the reader to follow non-linear reading pathways, by encouraging the reader to intervene in and expand the text, and by presenting the reader with rich opportunities for meaning making through multimodal content, such as video, audio, and other elements. Through these interactive processes, readers of digital texts become more “writerly” readers, collaborating with the author to co-create the text. More importantly, new media for digital texts asks for, and to a large degree, demands interactivity in order to be fully realized as a civic discourse.

In reading digital texts, readers use a wide range of new literacy strategies to create meaning. Increasingly, information is taking on new forms that incorporate images, video, sound, and other non-textual elements. Such multimodal texts require readers to recognize, evaluate, and make meaning within these variant modes of representation. As digital information resources grow incomprehensibly vast, readers must know how to locate, evaluate, synthesize, cite, and use information judiciously and with integrity. Reading a single report on one news Web site, for example, may involve manipulating icons, viewing related streaming video, listening to audio, participating in an instant poll, and identifying and following links to related information.

At the same time, reading digital and multimodal texts requires conventional literacy strategies necessary to all reading acts. Such strategies are based on the belief that that reading is a personal, meaning-driven process, and that readers actively create meaning as they read. While technology applications have the potential to reinforce reductive literacy strategies, as in skill-and-drill phonics software, they also have potential to support richer and more holistic views of reading by helping readers to envision and partake in the world of the text, by encouraging students to make intertextual, intratextual, and extratextual connections, and by offering sophisticated means of textual analysis and critique.

Lastly, like the print media, new media reinforce the values and ideologies that are embedded within our language and society at large. Readers must recognize and respond to these cultural subtexts, not only in computer-mediated texts, but in film, television, music, and other popular media as well.

### **What Does This Mean for Teaching?**

Technology integration in any content area is most effective when the instructor, an expert in his or her discipline, makes important connections between the objectives and

pedagogy of his or her content area and the available technology tools. This process involves asking how technology can support and expand effective teaching and learning within the discipline, while simultaneously adjusting to the changes in content and pedagogy that technology by its very nature brings about. Within the English language arts, this means:

- At the K-12, undergraduate, and graduate levels, English educators must integrate digital texts into the curriculum, drawing on a wide range of databases, archives, web sites, web logs, and other online resources. Ideally, these digital texts should represent the wide range of texts that available online, including print-based genres (e.g. poetry), new digital genres (e.g. the weblog or wiki), hybrid forms (hypertext editions of print works), and multimedia texts.
- At the K-12, undergraduate, and graduate levels, English educators must encourage students to recognize, analyze, and evaluate connections between print and digital texts, as well as recognize what a reader of print and digital texts needs. At the same time, teachers must challenge students to expand print-based models of text and reader to incorporate new digital genres. Exploring the connections between print and digital texts also means understanding how digital and print texts compliment each other, as their conjunction and juxtaposition offer new meanings and enriched experiences for readers.
- At the K-12, undergraduate, and graduate levels, English educators must prepare students to read new media using a range of new literacy skills, including information literacy strategies, multimodal literacy strategies, critical literacy strategies, and media literacy strategies.

### **Focus 3: Composing With Multimodal and Multimedia Technological Tools**

Composing processes with multimodal and multimedia technological tools in efforts to create various types of text, including hypertext, hypermedia, Web design, PowerPoint presentations, digital literacy portfolios, and digital video documents, will continue to evolve and effect how we go about the teaching of writing, producing text, and communicating.

#### **Implications for Teaching:**

A careful consideration and analysis of composing processes and products that include multimodal literacies and multimedia technology will better inform our learning, teaching, and ways of thinking about composition, composing processes, and conceptions of an expanded, multimodal notion of text and meaning-making.

#### **Belief Statements:**

- Composing processes occur within multimodal and multimedia technologies.
- The composing process yields a variety of legitimate and effective products, outcomes, and artifacts that go beyond the printed page, including hypertext, hypermedia, Web design, digital literacy portfolios, PowerPoint presentations, and digital video documents.
- Using multimodal literacies and multimedia technologies has the potential to make the composing process and the subsequent texts produced more dynamic, interactive, generative, exploratory, visual, and collaborative. Composing in multimodal and multimedia technologies includes important considerations of visual, design, and performance aspects, and is not limited to print text to convey meaning.

- Composing in multimodal and multimedia technologies creates opportunities to reinvent and enhance notions of audience, purpose, genre, form, and context. It also has important implications for mechanics, usage, grammar, style, and evaluation.
- Composing processes in multimodal and multimedia technologies provide opportunities for collaboration and partnerships that occur with students and teachers across classrooms, schools, communities, states, and the globe.

**Annotation:**

The composing process yields a variety of legitimate and effective products, outcomes, and artifacts that go beyond the printed page, including hypertext, hypermedia, Web design, digital literacy portfolios, presentations, and digital video documents. Using multimodal literacies and multimedia technologies has the potential to make the composing process and the subsequent texts produced more dynamic, interactive, generative, exploratory, visual, and collaborative.

Composing in multimodal forms and with multimedia technologies includes important considerations of visual, design, and performance aspects since it is not limited to print text to convey meaning. This creates opportunities to reinvent and enhance notions of audience, purpose, genre, form, and context. It also has important implications for mechanics, usage, grammar, style, and evaluation.

Composing processes in multimodal and multimedia technologies provide opportunities for collaboration and partnerships that occur with students and teachers across classrooms, schools, communities, states, and the globe.

New and innovative technology has created changes and challenges in education, and it suggests new ways of teaching and learning, including how we teach composition. A greater respect for and emphasis on the importance of multimodal literacies and emerging multimedia technologies is reshaping current theory and practice in composition processes and products. Modalities such as print, still images, video, and sound, along with the arts, and popular culture all have the potential to inform, enhance, and transform the composing process. Music, art, print, dance, video, photography, sports, and games might be tools used to facilitate the composing process, or they might be some of the products and/or artifacts created within the composing process.

With the growing range of texts available to students today, literacy skills have expanded to reading images, codes, and sounds in addition to words. Greater emphasis must be placed on how various forms of technology, media, and modalities shape students' encounters with and creation of texts, as well as the meaning they are deriving from and/or creating with them. The various networks available to students today allow them to explore a variety of texts and meanings in almost infinite ways, depending on how they access, modify, generate, send, and archive print and multimedia texts. Computer technology, especially Web-based applications, create innovative possibilities to combine multiple literacies, modes, and technologies in compelling ways and reinvent notions of text, audience, purpose, context, performance, and genre that consider, but also extend and make dynamic, traditional print media.

As communication tools continue to evolve and expand to include modes beyond print alone, "writing" reaches a broader sense of "composing" that extends beyond pen and paper; even word processing includes elements of design, as well as texts featuring multiple genres and modes of expression. Rather than limiting composing to a linear

process, multimodal literacies and multimedia technology make use of hypertext and create opportunities for interactive reading with multiple points of entry into and exit from a text. Rather than being limited to creating a linear print-based text, students can compose an interactive, multidimensional hypertext. Composing with multimodal and multimedia technologies also provide expanded opportunities for students to collaborate on individual and jointly-written texts, many of which can be shared with a much wider audience, including other classrooms, schools, and communities across the country and the globe.

As teachers of writing, we must be prepared to facilitate a more textured and complex approach to the composing process. While a research project from the past might be solely comprised of a third person expository essay, a similar project composed today might include some version of the traditional essay along with multimedia components, such as sound, image, and video clips, and multiple modes of expression, such as music, artwork, poetry, and first person narratives of historical fiction, all providing different perspectives on the topic under study. Furthermore, students are able to construct deeper critical insights and meaning-making in the choices they make in terms of specific artifacts they include, those they create themselves along with those of others they choose to include and cite. The links they make, internal and external, as well as the choices they make in terms of design and formatting, all contribute to meaning. In other words, multimedia texts that make use of technological innovations and integrate multimodal literacies provide a broader and more dynamic representation of ideas than afforded by the limitations of print; they also provide boundless, creative ways of connecting various forms of expression and, in turn, help to forge critical new understandings and meaning-making.

### **What Does This Mean For Teaching?**

- Writing instruction must evolve to incorporate and accommodate new and emerging technologies, including the use of hypertext and the integration of multimodal literacies and multimedia technologies. However, this does not mean that we exclude what we know and understand about a best practices approach to teaching writing effectively.
- With respect to multimodal literacies, instruction in the composing process needs to include a careful consideration of why people choose various modes to express themselves (i.e., writing using print versus using images to convey ideas based on the characteristics of these different modes).
- As with all writing instruction, process is a key issue with multimodal texts, not just the product. The process of choosing, using, and creating texts becomes even more important with new and emerging technologies, especially as students make connections between and juxtapose multimodal texts.
- Technology should not replace the writing teacher; however, teachers will need to embrace new and emerging technologies with respect to teaching composition and coaching students' development of effective writing processes and products.
- Instruction in the composing process will need to be expanded to include a focus on design issues, especially with regard to creating links and realizing the meaning derived from this process. Hypermedia will require students to use multiple modes and multimedia to create new meaning in which they demonstrate the ability to combine together relevant oral, print, visual, and digital texts in writing.

- The composing process will need to expand to include decisions about which artifacts students should choose to integrate into their writing to demonstrate best what they know about and wish to represent about a particular topic. Part of this expansion will also include important decisions about the forms of text that will best represent those artifacts, ranging from print to non-print media and multiple forms of expression.
- Instruction in the composing process will require greater flexibility given the constant and perpetual change that technology brings to writing in all of its various forms. This is evidenced by recent growth in the use of web-based innovations like blogs, wikis, and podcasts. Similar innovations will surely follow and continue to proliferate and influence students' communication habits.
- Instruction in the composing process has always emphasized the importance of collaboration, especially in terms of conferencing and providing feedback. Teaching and learning with regard to the composing process will benefit from enhanced collaboration between and among students, but also between and among teachers and students, including teachers and students from schools and communities outside of the immediate classroom.
- The evaluation of the composing process and the subsequent texts produced that integrate multimodal literacies and multimedia technologies will be complex and require teachers to work carefully with colleagues and students to create fair, effective, and valid forms of assessment. Evaluation will need to consider not only process and product, but also design elements, choice of artifacts, and critical connections and meaning-making. As such, it is important to recognize and respect the unique role that teachers of writing play in the assessment of student writing—a role that cannot be relegated to or replicated by software programs designed to grade student writing through analysis characterized by prescribed pattern recognition.

**In order to provide opportunities for students to engage in composing processes that make use of multimodal and multimedia technologies, teachers need to minimally understand:**

- the values, possibilities, pedagogies, and constraints of multi-modal literacies and multimedia technologies;
- the range of new modes and texts that have emerged with new and emerging technologies;
- the importance of continually updating knowledge of teaching composition given the continually evolving nature of technology;
- the added importance of recognizing and emphasizing context with regard to writing that new and emerging technologies dictates; in other words, audience, purpose, form, and meaning become even more important with the new opportunities provided by composing with new and emerging technologies and expanding notions of text;
- design principles for multimodal and multimedia texts; and
- theories about the relationships between print and other modalities.

#### Focus 4: Political, Economic, and Socio-Cultural Influences

The political, economic, and socio-cultural influences operating upon the practice of the new literacies with the new technologies is one of the most important considerations in education.

##### Implications for Teaching:

What are the implications of these sociocultural, political, and economic influences for learning, teaching, and our ways of thinking about learning as a social practice?

##### Belief Statements:

- In our society, issues of gender, class, race, ethnicity, and other demographics are intricately intertwined with equitable access to technology and, therefore, discussions of social, economic, and political power.
- The practice of new literacies is dependent upon access to material and human technological resources.
- Use of new technologies encompasses ethical considerations involving fair use, intellectual property, and privacy.
- Communicating with technologies is an interactive process involving an awareness of the needs, agendas, backgrounds, and identities of both senders and receivers.

##### Annotation:

Thomas Friedman (2005), in his New York Times bestseller, *The World is Flat*, observes that,

... it is now possible for more people than ever to collaborate and compete in real time with more other people on more different kinds of work from more different corners of the planet and on a more equal footing, than at any previous time in the history of the world—using computers, e-mail, networks, teleconferencing, and dynamic new software. (p. 8)

What new knowledge, skills and dispositions will be needed by American students if their futures will connect them on-line, in virtual environments, with students from around the world? How likely do we think it is that Friedman is right? How would our teaching change?

Increasingly, full participation in our globalized world demands extensive experience with new literacies and the innovative thinking and flexible communication that grow from technological expertise. With that in mind, when frequent access to newer technologies and to the teachers who have the knowledge, skills, and disposition to integrate these technologies into their pedagogy follows racial and/or class lines, the situation threatens to widen the gap between privileged and marginalized student populations. Such inequities result in more than a lack of computer skill. As Friedman suggests, communication will occur most often in the future in digital environments. Since it is through communication that we exercise our political, economic and social power, we risk contributing to the hegemonic perpetuation of class if we fail to demand equal access to newer technologies and adequately prepared teachers for all students.

Many teachers and students do not have adequate access to hardware and software in their schools and classrooms. Frequently, the available technology is essentially obsolete since the processor speed or memory capacity is inadequate for current and supported software and insufficient for multimodal composing. In other cases, the technology is broken and the school lacks the funds or sufficient instructional technology support to repair it. Restricted access or difficulty scheduling visits to computer labs make teaching lessons that would extend beyond a single class period impossible.

Adequate access involves more than up-to-date and well-maintained hardware and software; it also includes Web connectivity with a bandwidth capable of uploading and downloading complex texts in reasonable amounts of time. It includes access to such peripherals as digital cameras, scanners, LCD projectors, microphones, digital recorders, and camcorders. It involves classrooms that are laid out and furnished with this type of composing in mind, providing the right type of tables, chairs, outlets, and space for students work.

Well-informed teachers are also not measured solely by their ability to manipulate the equipment and software named above. Current and future teachers need familiarity with methods of obtaining opportunities for their students by finding and evaluating freeware, share ware and open source software and interfaces. They can benefit their students by developing and then teaching their students to develop expertise in evaluation of search engines and critical analysis of Web site credibility. Well-prepared teachers, with a deep and broad understanding of language, linguistics, literature, rhetoric, writing, speaking, and listening, can complement those talents by studying additional semiotic systems that don't rely solely on alphabetic texts.

New literacies will also challenge conventional notions of authorship and ownership of intellectual and artistic property. We already see students unwilling to stop pirating music and movies, and many feel that plagiarism has reached epic proportions in this country since editing tools combined with access to the Internet and effective search engines make it easy to cut and paste information from one document to a nother document, blurring for students, and sometimes for their teachers, the distinction between the creators, users, and owners of intellectual and artistic property. Not only will teachers need to understand "fair use" policies, they are likely to need to integrate units on ethics back into the curriculum to complement those units on rhetoric.

Technology has also changed the nature of privacy, personal space, and identity. In contrast to print-based writing, technology allows for vast distribution of any text. Therefore, its audience can be global. Anyone who has access to the Internet can potentially read Web posting, even those readers for whom it is not intended. Students should be counseled not only on the risks to their physical safety, but also on the ways that the texts they are composing today, and believe they have eliminated, often have lives beyond their computers, and may reappear in the future at a most inopportune time.

Students invited to study rhetoric and ethics in conjunction with new media and literacies might be well served to learn methods of critically analyzing the ways in which others are using multiple semiotic systems to convince them to participate, to buy, to believe, and to resist a wide range of appeals. Ancient methods of persuasion have been enhanced through artful use of music, color, animation, voice over, and tempo. Since students with limited incomes are often on ad-supported "free" Internet sites, these might become wonderful sites in which to explore and analyze persuasive appeals. In addition, interacting in such highly commercialized spaces has also begun to have a negative impact upon personal identity of their users, who may put economic interests over other interests in their search for information and truth.

Successful communicating with technologies involves the ability to consider communicative events from multiple cultural, social, and ideological perspectives, and use those perspectives for effective meaning-making and culturally responsible dialogue with others. It also implies the process of uncovering one's own cultural, social, political and personal (e.g. age, gender) backgrounds and understanding how these backgrounds can and often do influence one's own ways of communicating and interacting with others in virtual and face-to-face encounters. In short, digital communication is an interactive process, involving dialogue and learning for both the sender and receiver.

Unlike face-to-face communication, digital communication does not always allow for nonverbal signals such as voice tone, facial expression, or body language, to help the writer clarify intended meanings. Language and cultural differences among members from diverse and multinational online communities pose additional challenges to interaction in virtual spaces. For these reasons, online messages can lead to miscommunication and misinterpretation.

Internet communication and interaction is not always a safe and pleasant experience for its users. Instances of anti-social behavior in online communication such as using hurtful language and discriminating among certain members of virtual communities have been reported. The Internet space also allows their members to construct and act out identities that may not necessarily be their real selves and thus lose a sense of responsibility toward others. However, while any act of online communication involves a degree of risk, the vast majority of Web interactions occur without endangering the safety of participants.

### **What Does This Mean for Teaching?**

- Teachers, teacher educators, and prospective teachers must be both knowledgeable about and sensitive to issues of equity and diversity in access to technology and technology expertise in their schools and in their students' lives. In planning instruction and homework assignments, they must be mindful of their students' technological access and expertise, so that everyone, regardless of gender, economic, social, ethnic, or linguistic backgrounds, have equal learning opportunities. Care must be taken in the distribution and use of, as well as attitudes toward technology, so that the computer-learning environment, in physical or virtual world, becomes a friendly and supportive space for all to actively shape their identities.
- Teachers must discuss issues of equity and diversity with their students, helping them not only to understand their origin in the larger social, political, or economic contexts, but also encouraging them to consider these issues in their own interactions with technology and other technology users within and beyond the classroom. Through such conversations students can begin to develop a stronger sense of social acceptance for all participants in technology-supported physical and virtual environments, irrespective of gender, race, class, or political persuasion. Creating the terms for such an environment can provide a democratic forum, to which everyone has an equal opportunity to contribute.
- Ubiquitous access to sufficient and up-to-date technology—including high-speed Internet access—for all students must become a priority for policy makers, schools, districts, businesses, and the community at large. Ideally, resources should be appropriate for being located in classrooms since technological integration works best in the context of actual learning environments, not in computer labs. Thus, one-to-one computing integration is the ideal option for technology integration.

- Professional development for teachers and teacher educators must be ongoing, stressing purposeful integration for the curriculum and content, rather than merely technical operation. It also needs to provide institutional and instructional support systems to enable teachers to learn and experiment with new technologies. Offering release time, coordinating student laptop initiative programs or providing wireless laptop carts for classroom use, locating computer labs in accessible places to each teacher, scheduling lab sessions acceptable for each teacher, and providing alternative scheduling for professional development sessions so that all teachers can attend, are a few examples of such systems. Finally, teachers and students must be provided with technical support as they work with technology. Such assistance must be reliable, on-demand, and timely for each teacher and student in each classroom.
- The overlapping processes of writing and publishing in a Web-based environment have important implications for the English classroom. Teachers not only have to help students to understand the seamless nature of these two processes, but also involve them in effectively writing, distributing, and publishing their work. They also have to discuss with their students ethical and legal problems associated with web publishing. Part of that conversation should involve assisting students in developing their own ethical stances as writers, publishers, and readers of electronic texts and as participants in electronic discussions.
- Teachers and teacher educators must address plagiarism, ownership, and authorship in their classrooms. Designing assignments that are unique and, therefore, impossible to replicate (e.g. compositions that blend personal writing and information gathering) is the best defense against plagiarism. During the information gathering process, teachers can highlight questions such as: Where did you find information? Who owns it? How are you going to use it? How will you acknowledge it? How much will you cite? Teachers must also keep current with applications that arise from developing technologies.
- Teachers and teacher educators must help students develop strategies to assess the quality of information and writing on the Web by identifying rudimentary indicators (e.g., the authority and expertise of the author, date of publication, or citations for major claims or facts). In addition, students should have experience critiquing the stylistic techniques and analyzing the agendas of commercial sites.
- There should also be a unified school's policy about fair use, intellectual property, privacy, and conduct, readily available to students, teachers, and parents. Such a policy should explain how the Internet works, information it can provide students, acceptable and unacceptable use of the Internet, proper use of personal names, photographs, and any identifiable personal information that students can safely share with online stores, websites, and chat room members. It should explain to students the concepts of authorship, ownership, and intellectual property. Additionally, such a policy should provide students with ways to manage commercial cookies and avoid sites with any information that looks suspicious. Finally, it should describe penalties for each violation of the policy.
- Teachers and teacher educators must help students develop netiquette—etiquette on the Net—for interaction in a virtual space (e.g., sensitivity to a wide range of response and interpretation of messages among members of diverse and multilingual communities). Such netiquette is thus not only about courtesy; more

importantly, it is about tolerance and acceptance of people with diverse languages, cultures, and worldviews.

- Teachers and teacher educators must examine with students the social processes through which humans grow individually and socially, and they must expose the potentially negative consequences of one's individual actions. In doing so, teachers and educators will be able to reinforce the concept of learning as a social process, involving negotiation, dialogue, and learning from each other, and as a thinking process, requiring self-directed learning as well as critical analysis and synthesis of information in the process of meaning-making and developing informed perceptions of the world.

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**Note:**

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Participants and authors in the “What do we know and believe about multimodal literacies and digital technologies in English education?” thematic strand group of the CEE Summit included:

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\* Did not attend the CEE Summit but participated in online discussions.

**Resources**

Invited Participants List - <http://www.ncte.org/groups/cee/meetings/122847.htm>

Leadership and Policy Summit Home Page -  
<http://www.ncte.org/groups/cee/featuredinfo/122844.htm>

NCTE CEE Web site - <http://www.ncte.org/groups/cee/positions/122936.htm>

Reconstructing English Education for the 21st Century: A Report on the CEE Leadership and Policy Summit - <http://www.ncte.org/groups/cee/featuredinfo/122846.htm>

Wikipedia - [http://en.wikipedia.org/wiki/Main\\_Page](http://en.wikipedia.org/wiki/Main_Page)

Working Meeting Schedule - <http://www.ncte.org/groups/cee/meetings/122848.htm>



## CONFERENCE ON ENGLISH EDUCATION

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This statement approved by the CEE Executive Committee and found to be consistent with CEE positions on the education and continuing professional development of English language arts teachers and teacher educators. CEE is a constituent group of the National Council of Teachers of English. This document was developed in part as a result of the 2005 Conference on English Education Leadership and Policy Summit.

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