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Media Literacy Education

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Abstract

This study offers an analysis of media literacy practices and techniques used at local public middle and high schools in Colorado. Media literacy is an emerging field in education that blends literacy skills such as critical analysis and evaluation with an inquiry-based questioning process that encourages students to process information using cognitive, moral, aesthetic and emotional dimensions. This inquiry-based process is not a new educational approach; it has been used to critically evaluate literature for centuries. However, media literacy scholars argue that applying inquiry-based approaches can enhance learning across all grades and content levels by applying new methodologies.

The literature reviewed suggests that the effectiveness of media literacy approaches in schools is influenced by social factors. Potter (2001) argued that students bring their own background and perspectives to the learning environment and for this reason, he believes media literacy must be measured based on a continuum and not a category; because there are different degrees of media literacy based on the strength of perspective and knowledge structures. According to Potter, people’s regular routines are largely conditioned by the media, enabling producers of mediated messages to shape and frame what is important. A 2003 empirical study by Hobbs and Frost found that an experimental media literacy curriculum can be used to enhance traditional literacy skills and meet traditional educational goals. The authors found that students in the media
literacy treatment group scored higher than the control group in reading comprehension and viewing comprehension and recognized the longer paragraphs and fewer spelling errors of the treatment group as representing superior development in writing skills. The overall analysis of the non-fiction informational messages showed that the media literacy treatment group was better prepared to analyze media messages in regard to construction techniques, point of view, omitted information, comparison and contrast and identification of message purpose.

Thoman and Jolls (2004) promote the consideration of key questions and an inquiry-based approach in analyzing and critically understanding media messages. The scholars argue that using key questions to evaluate messages promotes higher order thinking by identifying concepts and fallacies within mediated messages, focusing on the learning process and not the content. Although the question set was designed to be used with media content, the authors define media very broadly to include books and other materials prevalent in classrooms. According to Thoman and Jolls (2004) the inquiry process calls for multiple interpretations of messages, which requires observation and critical thinking. These skills can illuminate bias, challenge stereotypes and uncover the motivations of producers, exposing implicit and explicit meanings. According to the scholars, the habitual application of an inquiry-based line of questioning encourages students to think for themselves, helping them control the interpretation of what they see.

The literature reviewed established that media literacy is a fervent topic amongst education scholars and inquiry-based approaches can prepare and empower students to live in an information-rich world. However, little to no research evaluates local practices
in Colorado compared with national media literacy initiatives, and I established my 
research questions based on this gap. The goals of this study were twofold: First, archival 
data from national media literacy organizations were researched and evaluated to outline 
some best practices in introducing media literacy into any curriculum. State and district 
documents designed as a framework for the implementation of technology and 
information literacy were evaluated for key terms and concepts. This evaluation 
suggested that although some concepts overlap between information and media literacy, 
such as critical evaluation, independent learning, and information analysis, there is also a 
gap between these two concepts. Important media literacy concepts including discussion, 
creation, and production are missing from the information literacy skill sets.

One possibility on the district level is defining information literacy skills to the 
same degree that technology literacy skills are defined to help promote an inquiry-based 
approach. Evaluating information literacy separately from technology takes the focus off 
technology and establishes measurable concepts and definitions of information literacy. 
In addition, one might think about integrating key questions as a framework to promoting 
critical evaluation of all subject matter. This includes questions like: who created the 
message; what is communicated or implied by the message; when was the message 
created; where is the message being directed; how did the producers use creative 
techniques to capture attention; and why is this message being sent. Some teachers 
reported already using these questions and many agreed that this type of inquiry increases 
students’ overall literacy. Using the key questions as a framework for classifying 
information literacy might help characterize information skills.
The archival data, in conjunction with Potter’s (2001) theoretical concepts of media literacy development, were used to create a survey issued to all middle and high school teachers in the Denver and Eagle County districts. The survey was constructed under the assumption that teachers are already using media content in their classrooms. The purpose of the questions was to understand what media resources are available to teachers and how they apply these resources to their particular curriculum. The survey questions teachers about their perceptions of media use and discussion in the classroom. Teachers were surveyed about the benefits and challenges of using media in the classroom, including self-censorship to avoid negative backlash. Perceptions were measured by asking scaled questions that assess current practices, available resources, and inhibiting factors. Teachers’ experience and perceptions of media use and discussion was evaluated within the context of the Colorado Information Literacy Standards, specific district technology and information literacy plans, and national approaches to integrating media literacy education.

In an effort to position this project in the context of larger educational changes, the quantitative and qualitative responses from the survey offer specific examples of how local teachers use media to help students learn and understand differently. The survey results revealed that although media is perceived positively by teachers as a teaching tool, respondents were more likely to consider the cognitive dimension of information and media analysis. Employing the use of key questions to frame both mediated and non-mediated information addresses the moral, emotional, and aesthetic dimensions of media literacy, broadening student perspectives and knowledge structures. This critical
evaluation process takes the focus off media content, and emphasizes the process by which students acquire information.

Participants suggested that they use media most often to encourage participation and teach different perspectives, and the quantitative survey responses indicated that a lack of resources is the most common reason teachers avoid using and discussing media content in their classrooms. This is why the media literacy approaches are effective: They do not require any technology resources. Qualitative, open-ended survey responses revealed that many teachers also felt inadequately trained to use technology in the classroom. For this reason, schools might consider creating an orientation for teachers about the technology resources available in their schools. Successful orientations might cover the set up, use and disassembly of technology resources and could be taught by mentor teachers who are competent users of technology and comfortable using it as a teaching tool. Finally, constructing an inventory of available technology in each school would offer teachers a tangible reference list and could also facilitate the maintenance of technology resources.

significant differences were discovered between the districts regarding their agreement with statements about encouraging debate in relation to controversial content. Also, while most teachers listed a lack of resources as their main reason for avoiding information use, Eagle County teachers reported that inappropriate content inhibited their media use most often. For this reason, local districts might consider more critical perspectives when examining and teaching with media content. By focusing on critically evaluating media content, teachers stress inquiry-based learning skills and not media
subject matter For example, defining media as an information source and outlining other information sources accessed by students including textbooks and traditional non-mediated materials helps students develop awareness of credibility and bias in information sources. This may include an understanding of the role of media industries as a unique information source within a democracy that is governed by distinct rules and regulations. One possibility the districts might consider is creating a resource center for teachers who wish to use media literacy approaches in their classrooms, which will facilitate the availability of resources. This could be set up in the library or faculty lounge, and promotes sharing and compilation of useful resources. Establishing a media literacy library might encourage teachers unfamiliar with media literacy approaches to participate. The development of a resource center could encourage staff development programming to more regularly consider media use and discussion. It also gives teachers access to appropriate media content.

Finally, the districts might consider outlining the specific technology skills expected of students in the district documents, offering a reference list that can serve as a measurement tool. Although this doesn’t fall into the realm of this research, it is of interest that in Eagle County, the staff and teacher skills are specifically defined, while student skills are not. DPS did not list technology skills expected of staff or students. Establishing a framework of what skills are expected of students at each grade level provides the district with measurable concepts that can be evaluated and updated based on emerging technology and student needs. By taking the focus off of technology and technology-based skills, the district plans could shift gears to an inquiry-based
framework, which would minimize the lack of resources or technology proficiency reported by teachers. By emphasizing the importance of information skills and distinguishing them clearly from technology-based skills, the Denver and Eagle County districts would encounter less difficulty in securing staff proficiency.

These recommendations are based on the gaps that emerged in the quantitative and qualitative survey data. These recommendations synthesize the overlaps and identify gaps between media and information literacy skill sets, and came to fruition based on the voices of Colorado teachers. They can be implemented in any school or grade level. Although media literacy approaches focus on media as an information source, the 12 Basic Principles define media broadly to include many communication forms from books and magazines to recorded music and the Internet. For this reason, information literacy skills could be developed through the application of media literacy approaches that do not overlap with themes prevalent in the CILS. The findings of this study reveal a need for both district documents to be restructured to define separate goals, objectives, strategies and tactics for the technology and information literacy components of the plans.

The survey response rate (17 %) was a limiting factor in this research. The diversity of size in the two districts researched affected the demographic diversity of the sample, resulting in a higher percentage of respondents from DPS. Further research is needed to determine whether the significant differences between the two districts apply to other regions of the state. Although the aims of this research focused on teacher perceptions and practices, future research might measure the affects on students. Implementing an experimental media literacy curriculum similar to that conducted by
Hobbs and Frost (2003) on a local level would be an effective way to measure whether the integration of media literacy approaches continues to enhance student literacy. Advances in technology have caused a shift in education, requiring that students gain proficiency in computer and technology skills; however school resources are a limiting factor. By expanding the skill sets to include media literacy, schools can cultivate the critical thinking skills necessary for students to succeed in the 21st century, both independently and in the classroom.
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Chapter One: Introduction

The past decade has brought numerous changes in technology, causing revolutionary modifications in personal and professional communication methods. Cell phones have replaced land lines, and email has taken the place of ‘snail mail’ and faxes in businesses. College students have virtually retired their pens and notebooks, and computers are the preferred (if not required) means of note-taking in higher education. Print-bound encyclopedias are more useful doorstops than references, as the Internet hosts a plethora of research materials that can be updated continuously with current information. This evolution has occurred so quickly that it is difficult, if not impossible, for teaching professionals to keep up with the changing technologies. Indeed, there is presently a divide among many educators over how to address the changing learning landscapes of the information age that students and teachers are required to navigate. In his article “New Media and New Literacies: Reconstructing Education for the New Millennium,” Douglas Kellner (2002) argues that literacy involves gaining competencies in effectively using socially constructed forms of communication and representation (p. 92). He continues by describing literacy as a constructed educational and cultural practice that is governed by rules and conventions. Over the past decade, the technological revolution has caused literacy to evolve and shift from more traditional practices of analyzing written text to understanding the messages and images of the modern world.
Since the beginning of formalized education, *literacy* has meant having the skill to interpret words or messages (Thoman & Jolls, 2004, p. 18). *Traditional literacy* learning involves developing the skills and knowledge to read and interpret text and to write at a competent level. More in-depth definitions of literacy outline the ability to access, analyze, evaluate and communicate information (DeBenedittis, 2003). Traditional literacy skills are embedded in standardized education in the United States and considered a necessary foundation for developing adequate communication skills.

Although traditional literacy is generally associated with print-based communication and the ability to read and analyze written messages, the increasingly visual nature of society and complexity of media messages demand that attention be given to images, brands and symbols, in addition to text.

The purpose of media literacy education is not to prevent or reduce media use, but to encourage the informed use of media. *Media literacy* emphasizes both analyzing mediated messages and creating media (Buckingham, 2003). This is accomplished by empowering students with the skills to interpret messages through questioning the identity and intentions of the producer and noting specific techniques used to construct the message. In order to promote informed media use amongst students, it is necessary to develop media literacy approaches that allocate class time across the curriculum for students to critically engage with a variety of mediated messages. Some educators and scholars promote collaborative student-centered activities such as media production and critical analysis as a key dimension of media literacy education. Just as traditional literacy skills are useful in interpreting conventional texts and empowering young people
to contribute meaningfully as citizens, media literacy skills are necessary for people to interpret mediated texts and use media intelligently, evaluate media content, investigate media effects, learn from media, and resist media manipulation (Kellner, 2002, p. 93).

Many media literacy scholars identify this critical questioning and interpretation process as fostering *inquiry-based skills*. This approach to learning is not new; educators have been using the inquiry process to teach literature for centuries. However, media literacy scholars argue that using media literacy approaches can enhance inquiry-based learning across all grades and content levels by applying new methodologies, which are explored in greater depth in the Literature Review. Media literacy scholars have created inquiry-based question sets that stress an understanding of why messages are created—who they target, what methods are used to reach specific audiences, and identifying the intentions of producers. Furthermore, whereas traditional literacy skills are taught in alignment with specific subjects, media literacy can be developed across all subjects by teaching students to be critical users of media. By incorporating media literacy principles into standard curriculum, students will learn the same subject matter through multiple experiences, increasing their retention of the material. The incorporation of media literacy principles will promote critical thinking skills outside the classroom, by allowing students to recognize different representations within a topic.

Cultural factors, such as increasing diversity, have changed concepts of cultural knowledge and made the ability to understand a wide range of diverse messages a necessary component of communication. This requires a different type of *cultural literacy*, which Hirsch (2002) defines as an active understanding of messages, written or
otherwise, which requires shared knowledge for which there are no rules or conventions, as suggested by Kellner (2002). In other words, individuals use experience as a foundation for understanding, and when people know a lot of words (vocabulary, definitions, syntax, grammar), they know a lot of things. According to Hirsch (2002), the ability to understand a wide range of diverse messages is a true measure of cultural literacy. Concepts of cultural literacy can overlap with media literacy by considering how different cultures might view a message differently, or thinking about how messages are created to target specific cultures.

This type of cultural consideration has been given to canonical texts for centuries in language arts and history courses. Traditional literacy skills often revolve around reading comprehension and the ability to formulate a written response or critical analysis; however, attention is also paid to the identity and intentions of the author. Studying the writing style and specific techniques used to construct literature is necessary to thoroughly evaluate a text. The same concepts can be applied in the analysis and interpretation of media messages. The exponential growth of media in recent decades has created diverse roles for mediated messages, ranging from a form of entertainment to an information provider, and the lines between these roles are often blurred. The importance of applying literacy skills to mediated messages is magnified by the fact that technology use and access has continued to grow across all ages, both inside and outside the classroom. The ability to access, evaluate and communicate with media messages must be taught as a fundamental, life-long learning skill that will continue to grow and develop individually.
Computer literacy evolved out of technological advancements beginning with the printing press and spanning centuries to the modern-day laptop. *Computer literacy* is the technical component: the ability to use computers to research and access information, express thoughts and opinions through text, and distribute messages electronically. While computer literacy and media literacy skills overlap slightly, computer literacy requires the ability to find, retrieve and distribute applicable information, while media literacy’s foundation is in the critical understanding of media messages and the ability to create messages. However, access to information is an important component of both media literacy and computer literacy. Recognizing the specific role of media outlets and using computers to access information or distribute a message illustrates where concepts of media literacy and computer literacy overlap. The ability to access and distribute the printed word as a result of computers has also caused traditional literacy skills to evolve. Students can read entire texts online and conduct Internet research, allowing them to access applicable information more efficiently, but only if they have the computer literacy skills to search information sources competently and the media literacy skills to evaluate informative messages critically.

*Information literacy* considers both critical thinking skills and competency in measuring student need and aptitude. This term attempts to streamline the overlap between computer and media literacy by incorporating the technical and critical analysis skills necessary to access and assess information. While information literacy encompasses concepts of both media and computer literacy, definitions of this concept vary significantly. Information literacy is a term that appears in many documents in the
state of Colorado, including the Colorado Information Literacy Standards (CILS),
established for the purpose of shaping curriculum statewide. These standards incorporate
some media literacy concepts such as critical evaluation and analysis. On a district level,
the Denver Public School system introduced an Information Literacy and Technology
(ILT) plan, which is based on the CILS, but focused on technology-centered skills, such
as accessing information and using new information tools. Eagle County has a similar
Education Technology and Information Literacy (ETIL) plan, which references both
information and media literacy concepts in conjunction with technology skills such as the
ability to use technology efficiently to access information. The term ‘media’ may have
been specifically avoided in the development of these information literacy plans and
standards, as media outlets have been stigmatized by the political implications of
conglomeration. Information literacy, on the other hand, seems to address something on
which everyone can agree: the need for information. Information literacy does not
include cultural factors or cultural critique, and is more oriented toward the efficient
application of existing knowledge to previously defined problems. By promoting media
literacy concepts under the information literacy initiatives, students can use new media
skills to build upon traditional literacy skills like reading, writing, speaking and listening.

Purpose of Research

I will use media literacy and information literacy as terms throughout this study.
These terms are not interchangeable, and each refers to the specific definitions outlined
above. I have chosen to focus on these two terms for several reasons. Media literacy is
currently emerging as an important component to pedagogical efforts in the information age. Many national organizations have been established that work with educators in designing curriculum that integrates media literacy practices into pre-existing curricula. As outlined in the Literature Review, some studies have also measured the effectiveness of media literacy education. The information literacy directives established by the state are evidence that classroom practices are changing and adapting to the information age. It is my belief that media literacy approaches are being incorporated into the information literacy directives, and that teachers in Eagle County and Denver can use media effectively to help accomplish traditional pedagogical goals.

The goals of this study are twofold. First, archival data from national media literacy organizations were researched and evaluated to outline some best practices in introducing media literacy into any curriculum. The archival data, in conjunction with theoretical concepts of media literacy development, were used to create a survey issued to all middle and high school teachers in the Denver and Eagle County districts. The questions were designed to examine whether current practices in these Colorado school districts overlap with media literacy practices. The survey questions teachers about their perceptions of media use and discussion in the classroom, but also asks about how they teach the traditional curriculum. Teachers were surveyed about the benefits and challenges of using media in the classroom, including self-censorship to avoid negative backlash. Perceptions were measured by asking scaled questions that assess current practices, available resources, and inhibiting factors. A goal of the survey was to determine if Eagle County and Denver are incorporating media literacy practices at the
middle and high school levels. Through the in-depth evaluation of district archival data, I determined where state and district directives incorporated media literacy principles and made recommendations to districts based on gaps revealed by surveying local teachers.

Media literacy is a tool that can be used in the classroom to promote understanding, critical viewing and interpretation of media messages, which can enhance traditional literacy skills. Juxtaposing components of media literacy in the sphere of traditional literacy development invites a rethinking of education in the information age because message analysis, evaluation and production can expand literacy practices outside the classroom by promoting an inquiry-based approach to learning. This approach involves the critical questioning of information, and focuses on the process of evaluating information rather than the information content. National assessments of media literacy curricula have reported that media use, analysis and creation in the classroom can potentially impact students by modernizing writing, reading comprehension, critical listening and critical viewing skills. Additionally, scholars have argued that media literacy education can be a way to increase traditional literacy and life skills, augmenting real-world readiness amongst high school students (Thoman & Jolls, 2004, p. 21). By explicitly addressing the ubiquity and complexity of mediated messages in the classroom environment, teachers can foster independent critical evaluation skills that students will use throughout a lifetime of learning.
Chapter Two: Literature Review

Substantial research has been dedicated to examining the changes in classroom literacy practices resulting from emerging technologies and communication methods. Some of these studies have outlined the history of literacy education in conjunction with the history and evolution of media (Silverblatt, 2004). Other scholars have examined the integration of an experimental media literacy curriculum in the classroom and the development of critical viewing and listening skills, reading comprehension and writing skills (Hobbs & Frost, 2003). Finally, at least one study measured the effectiveness of media literacy education in distributing a public health message (Gonzales, 2004). Many scholars agree that literacy landscapes are changing and teaching practices must be refined to accommodate the ubiquity of mediated messages. This literature review provides an exemplary evaluation of applicable research to date, including theoretical frameworks that scholars have used in analyzing literacy.

Traditional, cultural, computer and information literacies are all components of media literacy, which scholar and author W. James Potter (2001) has defined as “a perspective that we actively use when exposing ourselves to the media in order to interpret the meaning of the messages we encounter” (p. 4). Potter (2004) has argued the need for a cognitive theory of media literacy built upon a deep understanding of how individuals use media, the function of media, and the unwanted effects that accumulate as
byproducts of everyday exposure (p. 266). According to Potter (2001), such a theory would recognize that extensive interaction with media has created a state of automaticity whereby people’s regular routines are largely conditioned by the media, enabling producers of mediated messages to shape and frame what is important. He argued that studying media critically is necessary because individuals trust the media to supply them with information and rarely question the veracity of media messages. In his book, *Media Literacy*, Potter (2001) defined media literacy in terms of perspective and knowledge structures. He claimed:

> Media literacy is a perspective that we actively use when exposing ourselves to the media in order to interpret the meaning of the messages we encounter. We build our perspective from knowledge structures. To build our knowledge structures, we need tools and raw material. The tools are our skills. The raw material is the information from the media and from the real world. Active use means that we are aware of the messages and are consciously interacting with them (Potter, 2001, p. 4).

He went on to dissect his definition, arguing that in order to understand media, you must have many perspectives, which are developed from good knowledge structures. Potter (2001) defined knowledge structures as consciously built authoritative maps that provide context and help determine meaning (p. 76). Knowledge structures incorporate many different perspectives, help organize information in terms of importance and prioritize what is retained. This includes a great variety of knowledge about the conventions of message producers, in addition to the origins, development and economic basis for media industries. Potter (2001) believed media literacy must be measured based on a continuum and not a category, because there are different degrees of media literacy based on the strength of perspective and knowledge structures. He contended that media literacy gives
audiences more control over their interpretations; and a wider range of experiences in the world and exposure to media messages gives way to a broader foundation for analyzing messages.

According to Potter (2001), media literacy is multi-dimensional, incorporating cognitive, emotional, aesthetic and moral information (p. 8). He distinguished cognitive information as factual, including denotative definitions and dates. Emotional information consists of memories that might include happiness, fear or other feelings. These emotive components are carefully constructed by message producers and help audiences categorize information. According to Potter (2001), the aesthetic dimension of media literacy involves the audiences’ appreciation for craftsmanship in message production. As interpreters of media messages, audiences can detect visual and composition techniques, and their individual knowledge structures offer a basis for comparison. The aesthetic domain allows audiences to make judgments about the editing, lighting and set design of visual media or the quality of sound recording (Potter, 2001, p. 8). Finally, the moral domain addresses information about values that reside within audiences. Identifying moral themes within mediated messages is indicative of a higher level of media literacy that demands a sophisticated interpretation of message values and themes. Understanding the layers of media messages requires critical and analytical skills and strong knowledge structures. Critical skills let audiences consciously interpret media messages within their knowledge structures and across all four dimensions of understanding. Analytical skills rely on knowledge structures to gain a deeper comprehension of mediated messages, causing audiences to question the dominant themes, values and beliefs presented. These
knowledge structures are directly influenced by personal experience, which is the foundation in developing media literacy, in addition to active interaction with mediated messages.

Potter (2001) broke media literacy skills into two categories: rudimentary skills and advanced skills (p. 39). He defined the former as reading, listening, viewing and computing messages in order to recognize symbols and patterns. Advanced skills offer the ability to derive meaning from many layers of messages that require critical perspective. He elaborated on the skills used to interpret meaning, including analysis, comparing and contrasting, evaluation and abstraction. These skills allow students to break the message down into meaningful elements that can be compared to existing knowledge structures to help assess the worth of a message.

Potter (2001) argued that individuals with lower degrees of media literacy do not interpret messages beyond what is presented and do not realize that messages are the interpretations of reporters and journalists or producers. As a result, he explained, people are forced to accept the dominant themes, values and beliefs presented by the media. In contrast, Potter (2001) defined media literate individuals by their ability to interpret messages across many dimensions and place media messages in the context of knowledge structures. He believed that media literacy education would promote a broader perspective of the media and message construction, helping people to recognize both societal and individual effects. Finally, Potter (2001) contended that despite controlling exposure to media messages, individuals are indirectly influenced by the media because of its ubiquity in society and influence on other social institutions. Media literacy requires
active participation between consumers and mediated messages and empowers individuals by giving them the skills to ask the right questions about media exposure, allowing them to filter messages as opposed to absorbing them.

This does not suggest that all consumers of media are media illiterate, but rather media literacy, much like traditional literacy, occurs on a continuum, and knowledge structures assessing both the real world and mediated world are necessary in assuming media literate perspectives. It is necessary to consider how traditional literacy skills shape knowledge structures, and within my research, I hope to use Potter’s (2001) four dimensions of media literacy in the context of traditional literacy skills. Do educators consider the cognitive, emotional, aesthetic and moral domains of messages in evaluating traditional narrative? I will explore teachers’ perceptions of how students’ development of media literacy skills differs from their acquisition of more traditional skills, both rudimentary and advanced.

A major distinction between media literacy versus traditional literacy is that media literacy focuses on process in addition to content. Traditional analysis of a message involves interpretation of text to deduce meaning, whereas media literacy focuses on the reasoning and process behind the creation of that message. Within media literacy education, the goal is not to memorize facts, but to explore questions that arise when students critically engage with mediated messages (Thoman & Jolls, 2004, p. 27). Media literacy grows out of reader response and deduction. In many ways, it reflects a cultural-studies perspective, whereby meaning is constructed differently by audiences
because individuals interpret messages differently, allowing for multiple meanings. This assumption that media messages contain multiple meanings is called polysemy.

Often times, media literacy skills overlap with traditional literacy skills, including learning how to identify key concepts, making connections between multiple ideas, asking pertinent questions, identifying fallacies and formulating a response. In her article, “A Deeper Sense of Literacy,” Cynthia L Scheibe (2004) stated:

Media literacy is a logistical extension of traditional literacy: learning to “read” visual and audiovisual messages as well as text-based ones, recognizing the basic “language” used in each media form, being able to judge the credibility and accuracy of information presented in different formats, evaluating the “author’s” intent and meaning, appreciating the techniques used to persuade and convey emotion, and being able to communicate effectively through different media forms (p. 61).

Media literacy education emphasizes the importance of critical thinking skills that consider the purpose of mediated messages. In the same way that traditional literacy learning considers an author’s intention, word choice and background, media literate students recognize that all mediated messages are created by specific individuals for the purpose of delivering a particular message to an identifiable target audience. Message analysis allows the audience to assign credibility, accuracy or bias, depending on their individual relationship to and experience with that source. Identifying concepts such as alliances between certain media and political agendas or the conglomeration of media outlets and industry can expose fallacies and raise questions about mediated messages.

While Potter (2001) did not directly call for the restructuring of education as a result of the present technological revolution, he did argue that the development and expansion of traditional literacy skills to include mediated messages is critical to building
strong knowledge structures (p. 44). Acquiring these critical thinking skills is a life-long process that takes place outside the classroom with the development of more advanced perspectives. Author and scholar Douglas Kellner (2002) suggested, on the contrary, that the expansion of literacy as a concept must begin in the classroom. In his article “New Media and New Literacies: Reconstructing Education for the New Millennium,” Kellner (2002) argued that there is presently a shift in education whereby the traditional set of memorized facts is proving insufficient in real-world functionality (p. 90). He explained that the recent technical revolution necessitates the restructuring of education and calls on educators to “rethink their basic tenets to deploy media in creative and productive ways, and to restructure schooling to respond constructively and progressively to the technological and social changes that we are now experiencing” (p. 90).

Kellner (2002) used Deweyism as a theoretical framework, suggesting a direct connection between education and democracy and postulating that in order to be part of a democracy, you must be educated. He wrote that literacy is always evolving, shifting in response to social and cultural changes, and that in order to empower students, critical media literacy must combine with traditional print literacy. Kellner (2002) introduced the term *multiliteracies* and argued that in order for education to be relevant to the challenges of contemporary life, educators must expand the concept of literacy and develop new curricula and pedagogies (p. 92). He elaborated on the potential for multiple literacies to include media and computer literacy, social and cultural literacy, eco and environmental literacy and economic and financial literacy, among others. This extension of literacy is more difficult to evaluate than traditional literacy, however Kellner (2002) has reasoned
that media literacy skills are necessary in order for people to use media intelligently as an instrument of social communication and change.

Within my study, I hope to expand on Kellner’s (2002) appeal for the restructuring of education necessitated by new technological developments. Traditional literacy education evolved as a result of social and cultural changes; such changes are presently driven by technology. In order to empower students, I think the ubiquity of mediated messages must be addressed in the classroom, a controlled environment where students can share opinions about media content or experiences with media sources. Kellner’s (2002) elaboration of literacy as inclusive of mediated messages, traditional print, computer and cultural literacies, just to name a few, is indicative of the need for the concept of literacy to be expanded. Kellner (2002) and Potter (2001) shared the belief that literacy is multi-dimensional. They believed that to adequately prepare students, multiple literacies must be addressed across the curriculum, allowing students to successfully use media as a tool for social and educational change.

In her introduction to the 2004 special edition of *American Behavioral Scientist* dedicated to the subject of media literacy education, Mary-Lou Galician wrote that discussions of media literacy must be “transdisciplinary—cutting across artificial disciplinary boundaries, merging the best approaches and knowledge bases of all fields, and sharing rather than competing to produce the best research and practice” (Galician, 2004, p. 8). She went on to argue that a successful media literacy curriculum blends the fields of education, journalism, mass communication, cultural criticism, media ethics, media economics, reading, psychology, sociology, politics, technology studies, and
human communication. Echoing Kellner’s (2002) foundation in educational theory, Galician (2004) also used Deweyism as a theoretical framework, arguing that media illiteracy results in human disempowerment. She stressed the importance of research, teaching and practice of media literacy as a national priority because, according to her, media is not just a reflection of society, but also an influence on society. Galician (2004) argued that as democratic citizens, we should seek out facts and truth rather than be captured by images and illusions in the media. She supported the need for media analysis and criticism and promoted a trans-disciplinary approach.

Within my study, I explore concepts from Galician’s (2004) trans-disciplinary approach to media literacy education for several reasons. Mediated messages can not be addressed strictly through language arts education, because many advertisements and entertainment outlets have veered away from conventional rhetoric and often use images or symbols in lieu of words. Students’ ability to recognize those images as the message and evaluate their visual components is critical to skill development. Potter (2001) asserted that media literacy occurs on a continuum based in individual perspectives and knowledge structures. I think Potter’s (2001) four dimensions of media literacy can be incorporated more effectively across multiple subjects because cognitive, emotional, aesthetic and moral components of messages can be best highlighted through different subject matters. While Potter (2001) would have argued that all four dimensions can be assessed in all subjects, emphasis of specific dimensions can be stressed in certain subjects. For example, cognitive dimensions of a message might be addressed in a language arts classroom, while emotional and aesthetic components could be addressed in
an art or physical education classroom, and moral dimensions might be addressed through history or social studies coursework.

Some literature has explored implementing media literacy education across the curriculum, veering away from the language-arts based practice of media analysis in the classroom. Collaborative, inter-disciplinary learning units that incorporate media use, analysis and production are an effective way for educators to partner with fellow teachers within their schools and use media as a tool to promote the learning of a variety of subject matters. The special double issue of *American Behavioral Scientist* (2004) devoted to media literacy education supported an interdisciplinary approach to learning, offering perspectives from a wide variety of backgrounds, ranging from education to public health. By thinking about media literacy across all subjects, students will habitually interpret media messages in multiple areas of their lives. Collaboration can also reduce budgetary limitations by spreading the cost of media education across many departments and subject areas.

Diverging from the trans-disciplinary approach, some teachers believe that media literacy is an integral component to language-arts education, and should receive as much attention as the traditional literacy skills of reading, writing, listening, and speaking. These teachers have contended that it is necessary to reject the rigid hierarchies that position the printed word as the exclusive form for the representation of knowledge and expression (Hobbs & Frost, 2003, p. 333). By creating learning environments where students can express their ideas, reflect on their beliefs and attitudes about media in society, gather information from different perspectives and create messages for authentic
audiences, educators have emphasized the value of student autonomy (Hobbs, 2004, p. 44). Other education professionals believe, on the contrary, that computer-mediated communication such as blogging, email and instant messaging have compromised students’ ability to understand grammar, analyze text and write concise, coherent prose. Some professionals argue the need for a ‘back-to-basics’ curriculum that emphasizes traditional canonical literature and structured writing techniques. These educators avoid bringing the increasingly complex and layered combinations of messages within print, video and audio into the classroom, because they see any new media use as detracting from learning. For these teachers, media literacy education is not important because even though it promotes informed media use, the focus is on new media, which may subsequently encourage media use. Some educators also fear bringing media into the classroom, as it can be a hassle to secure parental permission or to mediate potential backlash from media use and discussion of content. Finally, some believe that media literacy allows “pop culture” into the classroom, and takes the focus off learning.

Emerging technologies of the information age have changed the landscape of literacy pedagogy across the nation. Media literacy advocate organizations work with educators and school systems to develop a curriculum that is relevant to student needs and aligns with traditional goals. Scholars contend that media literacy can combine with traditional print literacy to create multiple literacies that are applied by students outside the classroom throughout their lives. Educators acknowledge that digital communication and new media are changing the face of education, and the consideration of these changes leads to some fundamental questions about how media can facilitate literacy. Within this
study, the review of archival data will allow me to identify national best practices in media literacy application and implementation. The surveys of DPS and Eagle County middle and high school teachers will help me determine what local classroom practices are aligned with national standards. I will also determine if each district’s information literacy directive influences media literacy practices in local classrooms. Finally, personal interviews will allow me to gain in-depth insight into how local teachers are applying media literacy techniques. By surveying Colorado teachers, I can identify gaps or overlaps in the media literacy initiatives of local teachers versus national organizations, allowing me to make recommendations to each district about media literacy application in local schools.

**Media Literacy Application in Schools**

The goal of media literacy education is to provide students with a framework of skills that they can take with them outside the classroom, allowing them to continue learning throughout the course of their lives in this constantly changing world. Educators can promote healthy skepticism by encouraging students to habitually ask important questions. Potter (2001), Kellner (2002) and Galician (2004) were all in agreement that media literacy cannot simply be taught, but rather it must be incorporated into current teaching practices as a new way of thinking. While some media literacy organizations develop tools for measuring effectiveness, very little qualitative or quantitative research has been conducted to assess the efficacy of media literacy initiatives. In their 2003 article “Measuring the Acquisition of Media Literacy Skills,” Renee Hobbs and Richard
Frost examined approaches to media literacy education. The authors focused on the English language arts approach of Concord High School, whose experimental curriculum in 1999 included a full year long media/communications course for all 11th grade students. The course emphasized the analysis of media messages and examined social and cultural issues about the role of media in society (Hobbs & Frost, 2003). The curriculum focused on critical media analysis of print, audio and visual texts. Students involved in the experimental curriculum were compared to a control group from a similar demographic background who received no organized media literacy instruction:

The study measured students’ comprehension and message analysis skills in response to three nonfiction message formats: reading a print news-magazine article, listening to a U.S. National Public Radio (NPR) audio news commentary, and viewing a television news segment targeted at teens. Comprehension skills were measured after exposure to each message through a paper-and-pencil response to open-ended questions (Hobbs & Frost, 2003, p. 340).

Hobbs and Frost (2003) found that students in the media literacy treatment group scored higher than the control group in reading comprehension and viewing comprehension, while the control group outperformed the treatment group in listening comprehension. The overall analysis of the non-fiction informational messages showed that the media literacy treatment group was better prepared to analyze media messages in regard to construction techniques, point of view, omitted information, comparison and contrast and identification of message purpose. Additionally, Hobbs and Frost (2003) recognized the longer paragraphs and fewer spelling errors of the treatment group as representing superior development in writing skills. The authors identified five critical thinking skills that can function in the context of different media formats: identification of message
design and construction techniques, recognizing how an author expresses specific values and points of view, comparing and contrasting messages with similar content, noticing information omitted from a message, and identifying an author’s purpose and target audience (Hobbs & Frost, 2003). Furthermore, the study showed that students in the treatment group were more likely to recognize and understand the complex blurring of information, entertainment and economics present in many types of non-fiction media.

Hobbs’s and Frost’s (2003) study was at the forefront of media literacy research, and the authors found significant differences between students who experienced the experimental curriculum and those who did not. Additionally, the study itself took place nearly a decade ago, when the Internet and mediated communication were substantially less developed and not so widely used. The study by Hobbs and Frost (2003) demonstrated that media literacy instruction embedded in English language arts curriculum can be effective in meeting traditional academic goals.

Critical thinking skills—such as identification of message design, target audiences and construction techniques, and expression of specific values and points of view—can be juxtaposed between both traditional literacy and media literacy, giving students a more diverse understanding of the material. Media literacy approaches can also be used to teach students about specific topics while evaluating how media influences their attitudes and behaviors. In 2000, Rachel Gonzales, Deborah Glik, Mehrnaz Davoudi and Alfonso Ang conducted quasi-experimental media literacy research, designed to measure changes in the field of public health (2004). In their article, “Media Literacy and Public Health,” the authors described their year-long study that assessed the “acceptability and efficiency
of a media literacy skills training approach for tobacco use and prevention among high school-aged youth” (Gonzales, et al., 2004, p. 190). According to the authors, media literacy approaches can be used in diverse educational contexts and focus on educating students about how the media influences their knowledge and attitudes. Gonzales et al. (2004) recognized media as a social pressure that is “woven into the very fabric of everyday youth culture and social norms,” and their results provide evidence for the effectiveness of media literacy-based learning (p. 198). The study found that “students not only acquired additional knowledge about tobacco-related health consequences but also developed more critical awareness of how media serve commercial interests, in this case tobacco promotion” (p. 198). They concluded that media literacy approaches can be valuable in improving the effectiveness of health promotion amongst adolescents, and contended that a major strength of a media literacy-based framework is the flexibility to integrate different material into a variety of subjects.

Many scholars and researchers have found success using media literacy-based frameworks. As Galician (2004) asserted in her introduction to the special double issue of American Behavioral Scientist devoted to the subject, media literacy can be integrated in such a way that it crosses a wide range of subjects and academic traditions. This transdisciplinary quality makes media literacy approaches highly adaptable to a variety of topics, including public health issues and traditional literacy skills, as measured by Hobbs and Frost (2003). Gonzales et al. (2004) described the media literacy field as “an emerging educational approach that emphasizes key aspects of the socio-cultural environment for youth” (p. 197). Finally, the media is an unavoidable cultural factor that
influences the everyday actions of all people, and media literacy approaches can be valuable in helping students recognize how the media influences attitudes and behaviors.

In their 2004 article, “Media Literacy: A National Priority for a Changing World,” Center for Media Literacy founders Elizabeth Thoman and Tessa Jolls contended that ignoring the media-rich environment that kids bring to school each day is shortchanging them. They argued that media literacy is a key element to teaching students’ critical thinking skills and promoting healthy skepticism about media messages (p. 24). The authors cited Alvin Toffler’s statement that “the illiterate of the 21st century will not be those who cannot read and write, but those who cannot learn, unlearn, and relearn” (as cited in Thoman, 2003, p. 5). Thoman and Jolls (2008) elaborated on the need for media literacy education in their publication, “Literacy for the 21st Century,” an overview and orientation guide to media literacy education published by the Center for Media Literacy (CML). The organization, which was established in 1989, is a pioneering force in the development and practice of media literacy in the classroom. Their mission is to prepare children and adults for a lifetime of learning in the global media culture by translating media literacy research and theory into practical and educational tools for teachers (Center for Media Literacy, 2008). During the past 20 years, the Center has established itself as a force in the field of media literacy education. As a result, the CML has generated alliances with organizations such as the Alliance for a Media Literate America (AMLA), *Telemedium: The Journal of Media Literacy*, and Project SmartArt, an initiative of the Los Angeles Unified School District’s elementary schools (Center for
Media Literacy, 2007). The reputation of the center in the industry in conjunction with their mission makes the Center for Media Literacy a valuable resource.

The CML provides consulting resources for educators in addition to professional development tools that empower teachers and students to succeed in the information age. They created a ‘MediaLit Kit,’ which outlined the fundamental concepts and theories behind media literacy practices and suggests implementation models and teaching activities using a media literacy lens (Thoman & Jolls, 2003, p. 12). In this piece, Thoman and Jolls (2003) argued that media literacy education can bridge the gap between how students live and how they learn. They expressed their belief that bringing media culture into the classroom promotes a high level of engagement amongst students and the creation of media messages “builds teamwork skills, tolerance for another’s perspective, organization and delegation skills, and an appreciation for the variety of talents it takes to complete a large-scale project” (Thoman & Jolls, 2004, p. 20). The MediaLit Kit presented the Centers’ Five Key Questions necessary for learning from and interacting with the media, which are shown in Table 2.1.

<table>
<thead>
<tr>
<th>Table 2.1 Center for Media Literacy’s Five Key Questions</th>
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<tbody>
<tr>
<td>1. Who created this message?</td>
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<tr>
<td>2. What creative techniques are used to attract my attention?</td>
</tr>
<tr>
<td>3. How might different people understand this message differently from me?</td>
</tr>
<tr>
<td>4. What lifestyles, values and points of view are represented in—or omitted from—this message?</td>
</tr>
<tr>
<td>5. Why is this message being sent?</td>
</tr>
</tbody>
</table>
Thoman and Jolls (2004) have insisted that students of all ages can learn how to apply the questions to a wide variety of messages, and that with practice the process becomes automatic. The MediaLit Kit identified the key media literacy skills as the ability to access, analyze, evaluate and create media. These core concepts and questions are broken down and expanded further based on age and ability of the student, but the authors have contended that the ‘inquiry process’ is the teaching approach that best suits media literacy education (Thoman & Jolls, 2004, p. 20). According to Thoman and Jolls (2004), this process involves using analytical skills to interpret media messages, in addition to creative communication skills to construct and produce messages. These scholars have suggested that the juxtaposition of the critical thinking skills required for message deconstruction, decoding and analysis, and the creative thinking skills necessary for message creation, construction and production evoke active participation by students. The inquiry process requires observation, which can illuminate bias, challenge stereotypes and uncover the motivations of media producers and creators. Most importantly, the inquiry process calls for multiple interpretations of messages that expose implicit and explicit meanings. According to the CML, routine application of the Five Key Questions encourages students to think for themselves, helping them control the interpretation of what they see or hear (p. 23).

Finally, the MediaLit Kit offered suggestions and ideas for introducing media literacy to school districts (Thoman, 2003). According to the CML, forming interdisciplinary teams or groups of teachers can build support and provide motivation, which are critical to successful implementation of media literacy programming (p. 41). This involves the collaboration of principals, administrators, parents, teachers and other stakeholders in the school district. Staff development, collaboration and interdisciplinary learning units in conjunction with consultation of technical experts is also essential. The MediaLit Kit suggested creating a reference center within the school (library or teachers’ lounge) that provides background materials and teaching resources for integrating media literacy in all subjects (p. 42).

The CML does not categorize media literacy as its own subject, but rather endorses media literacy as a new way to teach all subjects. For this reason, the Center also suggests that educators explore state and local standards to see how media literacy skills might overlap with what they’re already mandated to teach (p. 42). Acknowledgment of students’ attitudes toward popular culture and a familiarity with youth culture are also important to teachers’ relationships with media in the classroom. As spokespeople for the CML, Thoman and Jolls (2004) suggest that educators align themselves locally, regionally and nationally with other practitioners of inquiry-based media literacy education (p. 42). Attending media literacy workshops, panel discussions and presentations will help build strong professional relationships, and joining the Alliance for a Media Literate America (AMLA) will also help teachers and schools network.
Within this study, I will survey Denver and Eagle County teachers about their use and discussion of media as a part of their regular teaching technique. I will ask scaled questions regarding the challenges and benefits they have encountered in their use of media in the classroom. I will also consider how much support they receive from the district and state, and whether information or media literacy staff-development programs exist within their schools. I will also use the Five Key Questions in Table 1 to establish a list of concepts that can be explicitly addressed in media literacy approaches. Thoman and Jolls (2004) argued that using key questions to evaluate messages promotes higher order thinking by identifying concepts and fallacies within mediated messages, focusing on the learning process and not the content. Media literacy scholar Cynthia L. Scheibe (2004) shared their belief that questions are an effective way to promote critical analysis of media content. In her article, “A Deeper Sense of Literacy,” Scheibe (2004) argued that the following questions promote ‘intellectual inquiry’ and can be asked of students from elementary school through college:

Table 2.2
Scheibe’s Key Questions

<table>
<thead>
<tr>
<th>Question</th>
</tr>
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<tbody>
<tr>
<td>1. Who made—and sponsored—this message, and what is their purpose?</td>
</tr>
<tr>
<td>2. Who is the target audience and how is the message specifically tailored to that audience?</td>
</tr>
<tr>
<td>3. What are the different techniques used to inform, persuade, entertain and attract attention?</td>
</tr>
<tr>
<td>4. What messages are communicated and/or implied about certain people, places, events, behaviors, lifestyles and so forth?</td>
</tr>
<tr>
<td>5. How current, accurate, and credible is the information in this message?</td>
</tr>
<tr>
<td>6. What is left out of this message that might be important to know?</td>
</tr>
</tbody>
</table>
These questions mirror Thoman’s and Jolls’ (2004) Five Key Questions and highlight important concepts and best practices in inquiry-based learning and media literacy education. The major difference between the two question sets is that Scheibe (2005) used a more academic vernacular and addressed the concept of a target audience. Her questions enable viewers to assign credibility to media messages and allow for criticism of the message with the last question. There are significant overlaps between the two question sets; both question the message creator first; both use the word ‘techniques’ to describe the creative way a message fostered attention; and both question sets address the lifestyles being communicated as key issues. These six questions can serve as a foundation for media literacy education across all grade levels and subjects. After considering the key questions suggested by Scheibe (2004) and Thoman and Jolls (2004), I have established a list of questions that I am certain will be familiar to teachers and students alike: Who, What, When, Where, How and Why? These questions have served as a foundation for cultivating student interest and curiosity in traditional classroom contexts for decades and can be successfully applied as a media literacy approach, as explained in Table 2.3.

These six questions can serve as a foundation for media literacy education across all grade levels and subjects. I have used them to develop scaled survey questions that assess whether teachers take these questions into consideration when using and discussing media in the classroom. I reviewed Denver and Eagle County district
documents for key terms, such as information and media literacy. After reviewing the applicable literature, I have found that scholars often use the terms *analyze, access, evaluate, discuss, create,* and *use* in conjunction with media literacy. These terms are important in evaluating perceptions of media as indicated by local documents.

*Table 2.3 My Key Questions*

<table>
<thead>
<tr>
<th>Who created this message?</th>
<th>Understanding that all media messages are carefully constructed is critical to recognizing media as a product. Media literacy promotes an understanding of how messages are created, what may have been left out, and why. This question strongly addresses Potter’s (2001) cognitive dimension of media literacy by establishing the facts and truth behind messages. When students start questioning who sent a message, they assess how reliable the information is and evaluate its purpose.</th>
</tr>
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<tbody>
<tr>
<td>What is communicated or implied by the message?</td>
<td>In recognizing that media messages are constructed, students will begin to determine the values, attitudes, and points of view portrayed in the message. According to Potter (2001), life experience allows audiences to create unique interpretations of messages, so different audiences can respond to the same message with individual perspectives. Being able to recognize missing perspectives in a message is a critical thinking skill that calls Potter’s (2001) moral component of media literacy into play.</td>
</tr>
<tr>
<td>When was the message produced?</td>
<td>Questioning the timeline behind a message can help students assess whether the information is current, or whether the views and perspectives portrayed in the message happened prior to a certain event. Furthermore, this question allows students to develop knowledge and perspective about the history and development of media messages.</td>
</tr>
<tr>
<td>Where is this message directed?</td>
<td>By identifying the target audience, students can assess techniques used by producers to attract certain cultures, races or even genders to a message. As Potter (2001) asserted with his incorporation of perspective and knowledge structures into his media literacy definition, who we are as individuals influences</td>
</tr>
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</table>
how we understand or respond to media messages. Recognizing that message producers try to use individual influence to elicit a desired response from a specifically targeted audience is an important part of critically evaluating media.

<table>
<thead>
<tr>
<th><strong>How</strong> did the producers use creative techniques to capture my attention?</th>
<th>This question examines the creative components of messages, including words, music, color, movement, camera angle and other factors. Media literate students recognize this “creative language” that shapes mediated messages and can lead to the increased enjoyment of messages. This question incorporates both the emotional and aesthetic dimensions addressed by Potter (2001).</th>
</tr>
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<tbody>
<tr>
<td><strong>Why</strong> is this message being sent?</td>
<td>This final question helps determine message motive and purpose. Examining whether money, power or ideology influenced message creation can sway the validity and legitimacy of the message. This final question addresses all four of the dimensions defined by Potter (2001) and requires that students analyze message purpose, depth and efficiency.</td>
</tr>
</tbody>
</table>

Project Look Sharp (PLS) is a national literacy organization that seeks to promote educated media use in all subject areas for all grade levels. According to their website, the organization develops curriculum materials that “infuse media literacy into core content” and the website offers resources, materials and strategies for educators (Project Look Sharp, 2008). In 2004, Project Look Sharp published their “12 Basic Principles for Incorporating Media Literacy and Critical Thinking into Any Curriculum” (Scheibe & Rogow 2004). The booklet is intended as a best practices guide for teachers of all grades and subjects who wish to incorporate media literacy education into their classrooms. In it, the authors (Scheibe and Rogow) presented media literacy approaches across the curriculum rather than treating it as an isolated subject, and suggested that media literacy training be integrated throughout the school year in many subjects and grades.
I have chosen Project Look Sharp’s 12 Basic Principles in conjunction with the key questions as encompassing the best practices in media literacy education. I will use these principles throughout the study, including in the evaluation of archival data and in issuing recommendations to district teachers. The 12 Principles are useful because they suggest specific ways for teachers to use media to stimulate interest and encourage students to think critically, regardless of the topic. Assigning students to compare media sources and share messages they encounter can promote critical analysis and interpretations of messages and help identify misleading or false messages. By integrating the key questions as media literacy approaches, media use and discussion in the classroom can help students identify fallacies fostered by media content and develop an awareness of media credibility and bias. I will use these principles, along with information collected from the surveys as a framework to make suggestions about how media literacy approaches can be applied to information literacy curricula within the district plans. This will involve a thorough evaluation of Denver Public Schools’ Information Literacy and Technology (ILT) plan and Eagle County’s Educational Technology and Information Literacy (ETIL) plan (ILT Plan, 2006; and ETIL Plan, 2006). I have analyzed these documents for key terms and concepts further defined in Chapter 3. This allows me to assess what local practices or approaches might overlap with ideal practices in media literacy education, and what might be missing.
Table 2.4  
*Project Look Sharp’s 12 Basic Principles of Media Literacy*

<table>
<thead>
<tr>
<th>Principle</th>
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<tbody>
<tr>
<td>1. Use media to practice general observation, critical thinking, analysis,</td>
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<td>perspective-taking, and production skills.</td>
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<tr>
<td>2. Use media to stimulate interest in a new topic.</td>
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<tr>
<td>3. Identify ways students may already be familiar with a topic through</td>
</tr>
<tr>
<td>media.</td>
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<tr>
<td>4. Use media as a standard pedagogical tool.</td>
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<tr>
<td>5. Identify erroneous beliefs about a topic fostered by media content.</td>
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<td>6. Develop an awareness of issues of credibility and bias in the media.</td>
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<tr>
<td>7. Compare the ways different media present information about a topic.</td>
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<tr>
<td>8. Analyze the effect that specific media have had on a particular issue</td>
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<tr>
<td>or topic historically and/or across different cultures.</td>
</tr>
<tr>
<td>9. Use media to build and practice specific curricular skills.</td>
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<tr>
<td>10. Use media to express students’ opinions and illustrate their</td>
</tr>
<tr>
<td>understanding.</td>
</tr>
<tr>
<td>11. Use media as an assessment tool.</td>
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<tr>
<td>12. Use media to connect students to the community and work toward</td>
</tr>
<tr>
<td>positive change.</td>
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</tbody>
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*Archival Data*

The Denver Plan is a strategic plan for restructuring Denver Public Schools.

Although the changes proposed are not a dramatic restructuring of education as suggested by Kellner (2002), The Denver Plan is structured around the belief that “democracy
depends on …preparing Denver’s next generation of students to assume leadership,”
echoing the sentiments of Kellner (2002) and many other scholars who promote
education as a path to democracy (The Denver Plan, 2005, p. 2). The city of Denver
launched the strategic plan as a way to increase student achievement, and it included
specific goals and objectives. Within The Denver Plan, an Information Literacy and
Technology (ILT) plan was introduced. The mission of the ILT plan is to “use tools and
information skills effectively to support student achievement and a comprehensive
program of 21st century learning” (ILT Plan, 2006, p. 6). Within the plan, district
administrators outlined the importance of technology literacy, which they defined as a set
of skills and habits that support students and staff in the pursuit of knowledge. The
document highlights the characteristics of the district’s student population as a challenge,
specifically ensuring that all students have meaningful access to the tools and experiences
that will support their full participation in 21st century learning (ILT Plan, 2006, p. 4). I
have thoroughly evaluated the document for key terms and concepts relevant to my study,
and familiarity with the ILT plan will help me assess where district directives overlap
with media literacy principles.

The Eagle County School District has established a similar Education Technology
and Information Literacy (ETIL) Plan (2006-2009). This document offers detailed
information about the technology practices in place in the Eagle County School District
and includes a needs assessment determined through staff surveys and development
programming. The ETIL Plan (2006) also lists goals, objectives and strategies for
implementing technology resources in the classroom. The term media literacy is listed in
the ETIL Plan (2006) as an information and communication skill, and the plan tackles technology literacy, resource access and district infrastructure. The document contends that inquiry-driven learning experiences are a key element to enhancing the learning community, echoing the sentiments of the Center for Media Literacy (2008). I will evaluate the Eagle County’s district plan to determine whether local practices overlap with the 12 Basic Principles. I will also assess how the terms *information literacy* and *media literacy* are differentiated within the archival data.

Both the ILT (2006) and ETIL Plan (2006) are aligned with the Colorado Information Literacy Standards (CILS) (Colorado Department of Education, 2001). These standards were established in 2001 and are tailored to the specific needs of Colorado. They define the information literate student as capable of many skills that range from accessing information to evaluating information critically. Although the term information literacy is used in the title, these standards incorporate concepts of media literacy, and I have evaluated them as archival data to determine if and where they overlap with best practices in media literacy education. The CILS list nine standards in defining an information literate student, detailed below in Table 2.5.

*Table 2.5*
*Colorado Information Literacy Standards*

<table>
<thead>
<tr>
<th>The information literate student:</th>
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</thead>
<tbody>
<tr>
<td>• accesses information efficiently and effectively</td>
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<tr>
<td>• evaluates information critically and competently</td>
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<tr>
<td>• uses information accurately and creatively</td>
</tr>
<tr>
<td>The information literate student is an independent learner who:</td>
</tr>
<tr>
<td>• pursues information related to personal interests</td>
</tr>
<tr>
<td>• appreciates literature and other creative expressions of information</td>
</tr>
<tr>
<td>• strives for excellence in information seeking and knowledge generation</td>
</tr>
</tbody>
</table>
The information literate student contributes positively to the learning community and to society:

- and recognizes the importance of information to a democratic society
- and practices ethical behavior in regard to information and information technology
- and participates effectively in groups to pursue and generate information


The full CILS document can be found in Appendix B. Within the document, these standards are evaluated in conjunction with major subjects including history, math, music, physical education, reading & writing, science and visual arts. Standards 7-9 are not addressed within any of the subject areas: however in-depth descriptions of each standard, their indicators and rationale provide greater insight into potential subject alignment. A thorough evaluation of the standards will allow me to elaborate on how information literacy and media literacy are distinct concepts. These standards were developed in consultation with the Partnership for 21st Century Skills (PCS), an advocacy organization that offers resources to educators. The organization provides an extensive list of resources for teachers, administrators and state education officials to browse and has been working with state governments since 2002 to help educators meet the needs of 21st century students (Partnership for 21st Century Skills, 2003). While I anticipate that the CILS will differ significantly from media literacy approaches, some media literacy skills are encompassed under the information literacy heading. I will assess the CILS and district documents and compare them with ideal practices in media literacy education in order to make recommendations.
Conclusion

The wide array of literature reviewed suggests that the effectiveness of media literacy approaches in schools is influenced by social factors. Potter (2001) argued that students bring their own background and perspectives to the learning environment, and technology can help promote diversity and an understanding of globalization. The Hobbs and Frost (2003) study indicated that media literacy approaches can be successfully used to enhance traditional literacy skills and meet traditional education goals. Thoman and Jolls (2004) promoted the consideration of key questions in analyzing and critically understanding media messages. Finally, Gonzales et. al (2004) found that media literacy approaches can be used in diverse contexts to focus on educating students about how the media influences their knowledge and attitudes. By promoting media literacy across the curriculum, students develop an awareness of credibility and missing perspectives in messages. Advancing technology is here to stay, and its changing nature justifies the time and energy of teachers and researchers to align technology and curriculum. Technology alone will not create educational change; these changes require patience to help educators gain perspective on the emerging needs of students.

Research Questions and Objectives

The existence of the Colorado Information Literacy Standards (2001) and the development of information literacy directives in both Eagle County and Denver is evidence that educators and administrators in Colorado are trying to adapt to the changing learning landscapes of the information age (ETIL, 2006; ILT Plan, 2006). The
literature reviewed established that media literacy is a fervent topic amongst education scholars and must be addressed in curriculum practices on a national, state, district, school and classroom level in order to adequately prepare and empower students to live in an information-rich world. However, little to no research evaluates local practices in Colorado compared with national media literacy initiatives. Based on this gap, I have established several research questions:

R1a. What are Colorado teachers’ perceptions about media use and discussion in the classroom?

R1b. How do Eagle County and Denver Public Schools district teachers use and discuss media in the classroom?

R2. How do specific district media literacy practices compare with recommended media literacy practices as established by national media literacy organizations and scholars?

R3. What recommendations can be made to specific districts about the inclusion of media literacy in the classroom based on the information from archival analysis, and survey data, and existing research of media literacy effectiveness?
Chapter Three: Methodology

Sampling

Denver and Eagle County share both demographic similarities and differences, with size being the main distinguishing factor. Online surveys were issued to the entire population of 1626 middle and high school teachers in both districts: specifically to 192 Eagle County teachers and 1434 Denver teachers. In Denver, more than 14% of the teachers responded to the survey, with a total of 194 respondents self-identifying as DPS educators. In Eagle County, more than 22% of the population responded, which consisted of 43 self-identified Eagle County teachers. Five percent of the final sample did not identify themselves as either DPS or Eagle County teachers. The overall response rate was 17%. Due to the size difference between the two districts surveyed, the overall percentage of DPS-identified respondents was much larger than those representing Eagle County (82% vs. 18%). In addition, 36% of the respondents identified themselves as teaching for more than 15 years, while only 11% reported teaching for less than two years, indicating that teachers with a greater number of years of service make up a larger percentage of the sample population.
This study sought to assess the practices and perceptions of Eagle County and DPS middle and high school teachers about media use and discussion in the classrooms. Answering the research questions involved querying Denver and Eagle County teachers and including teachers with various levels of teaching experience. This was accomplished by issuing an Internet survey to the entire population of middle and high school teachers in both districts and collecting quantitative and qualitative data from their survey responses. The survey questions uncovered information about how often Eagle County and DPS educators use and discuss media in their classrooms across all subjects. In Eagle County, this involved surveying teachers from seven schools, including five middle and four high schools. In Denver, my sample was much larger, and included teachers from 30 schools.

Although the Eagle County School District is not as large as DPS, Eagle County covers a vast region of the Vail Valley, and the school district employs 440 teachers between pre-school and 12th grade and serves as the governing body for sixteen schools (Eagle County Schools [ECS], 2008). In contrast, Denver Public Schools employs more than 13,000 teachers, and DPS serves as the organizing body for 151 schools and nearly 75,000 students (Denver Public Schools [DPS], 2008a). These two districts were chosen because of their vast size and geographic differences; however in researching these districts, I found some demographic similarities. For example, both school districts report large Hispanic populations; Colorado’s average percentage of Hispanic enrollment was 26% in 2006 (ETIL plan, 2006, p.1). In the same year, Eagle County reported that 47% of its student population identified as Hispanic, and 73% of those students were English
language learners. As of October 1, 2007, DPS reported that 56% of the student population was Hispanic, with 20% of all DPS students identified as English language learners (DPS, 2008b). The ethnic diversity of both districts is an important consideration in understanding how teachers use and discuss media in the classroom. Media literacy principles suggest considering how audiences from different cultures and backgrounds interpret media messages. The ethnic diversity of DPS and Eagle County classrooms could influence the way teachers use and discuss media in the classroom, teaching both English language learners and native English speakers.

Within my sample, I involved teachers of language arts, science, math, foreign language, social studies, and art as well as elective instructors. This allowed me to evaluate thoroughly how Colorado educators are using media in their classrooms and what parts of their curriculum overlap with media literacy education as outlined by the 12 Basic Principles (Scheibe & Rogow, 2004). Surveying teachers of all subjects across grades 6-12 in both districts allowed me to use a sample that is somewhat representative of the group to which the results are generalized, increasing the external validity of my sample. This sample allows me to talk about where media literacy education most often surfaces in the classroom.

While the size of my population of teachers is quite large and the sample size much smaller, collecting data through Internet surveys from local teachers is a valuable way to learn how media literacy is being integrated into Colorado classrooms. Because educators are unique in their hands-on classroom time and experience, teachers may be using media materials in ways that could be considered media literacy, even if they have
not been labeled as such by the district. Returning to Potter’s (2001) theoretical use of knowledge structures, teachers have individual experiences that influence their perspective and teaching methods. Additionally, teachers may serve as opinion leaders within their schools or community. By understanding the challenges district teachers face through the assessment of survey results, I can offer specific recommendations to help teachers use and discuss media in the classroom more effectively.

**Procedures**

Several different methods were used in this study to answer the three research questions proposed. In order to answer both research questions 1a and 1b, and in-part question 2, I surveyed middle and high school teachers from Eagle County and Denver Public Schools. These surveys were issued through email, and were distributed over a three-week period, with the online format allowing participants to complete the survey at their leisure. Using surveys as a method of data collection is well-suited to this study because the topic being explored involves change and innovative approaches to teaching. The results document current conditions, attitudes and opinions as well as the changing values and technology that might affect implementation. In addition, survey research is the most effective data collection method because DPS and Eagle County teachers have unique knowledge and information about their specific classroom practices. Their backgrounds and experiences using media serve as the primary data to be compared with national approaches. Furthermore, surveys allow for the collection of a large amount of data from teachers of a variety of grades and subjects.
In order to create an effective survey, I conducted a ‘pilot’ study with several teachers. The purpose of this study was to help determine survey layout, question order, and which questions need to include open-ended answer sections. Pre-testing the survey also helped me understand what incentives encourage teachers to complete surveys. The pilot study was conducted with five teachers of middle and high school outside the Eagle County and Denver districts. A printed survey was issued to the teachers, and they were invited to mark up their copies with questions about unclear terminology or inadequate response options. Upon completing the survey, I followed up with a brief semi-structured interview about the survey format. The results of this pilot study affected the layout and design of the survey and allowed me to construct several types of survey questions.

The preliminary questions in the survey issued to Eagle County and DPS teachers were more general, designed to get the respondents thinking about the subject. I asked questions about the technology resources available to teachers in addition to the frequency and context of media use and discussion in their classrooms. These initial questions were close-ended, scaled questions that required respondents to select their answer from a list of responses. The survey was computer-aided, guiding participants through different question sets, and although most questions were scaled or checklist questions, respondents could elaborate about their media use and discussion through open-ended sub-questions.

The purpose of this survey was two-fold. First, I assessed the extent to which media literacy approaches are used locally. Additionally, I evaluated whether any media literacy approaches fall under the districts’ information literacy directives. The multi-
faceted nature of my research questions required multiple procedures. In order to answer my second research question, about how local practices compare with national media literacy approaches, I completed a thorough analysis of the CILS, ILT and ETIL plans in addition to surveying the teachers (CDE, 2001; ILT Plan, 2006; ETIL, 2006). I looked for overlapping concepts between the media literacy and information literacy practices. These concepts included the terms listed in Table 4.1.

I chose these terms based on definitions of media literacy and information literacy in reviewed literature. I also evaluated the CILS, ILT and ETIL plans for approaches that attempt to integrate the key questions established in the literature review (CDE, 2001; ILT Plan, 2006; ETIL, 2006). Researching these archival data for terms and concepts that coincide with ideal media literacy practices served as a measurement of how local information literacy practices overlap with ideal media literacy approaches. Analysis of these archival data in conjunction with the survey responses allowed me to explore themes and impressions of classroom media use and discussion amongst Colorado educators. I used this information to draw comparisons between local and national approaches and to generate recommendations based on any gaps. My intention with the recommendations is for the voice of Colorado educators to be heard, and my suggestions synthesize local practices with national media literacy approaches.

**Measurement of Survey Concepts**

My research questions incorporated several concepts, including local teachers’ use and discussion of media content in the classroom, as well as their perceptions about
these concepts. The survey questions were designed to measure concepts that address these research questions, including use of media, discussion of media content and industries, media production and creation, perceptions of media use and discussion of content by local teachers. Survey questions gauged perspectives of media use and discussion and provided a framework for understanding local practices occurring on a classroom level as defined by teachers. By using data collected through survey research in conjunction with a thorough evaluation of archival data for key terms and concepts, I examined in greater depth any gaps between the state information literacy standards, district plans, and classroom-level outcomes. I broke down the concepts being measured, and specifically aligned the survey questions and archival data with these concepts. A complete list of survey questions is available in Appendix A.

**Concept: Media use in the classroom**

Conceptual definitions of media use vary in the literature and archival data reviewed. Scheibe and Rogow, authors of the 12 Basic Principles, “define *media* very broadly to include books, newspapers, magazines, radio, television, movies, videos, billboards, recorded music, video games, and the Internet” (Scheibe & Rogow, 2004 p. 1). The term *media* is used sparingly in the CILS and district plans, which focus on *information use* (CDE, 2001; ILT Plan, 2006; ETIL, 2006). Although I evaluated *information use* as a concept in the archival data, the survey questions did not attempt to measure this concept. However, many of the terms used in my conceptual definition of media below could be classified as information sources. Using the archival data and
literature reviewed, I developed a definition of media that includes some of the
information sources defined as media by PLS (Scheibe & Rogow, 2004).

**Conceptual definition:** Media use includes using content from newspapers,
magazines, television, film, or video camera/recording devices.

The survey questions below seek to measure this concept, specifically how and
when Eagle County and DPS teachers use media in the classroom.

What type of technology is your classroom equipped with? (Check all that apply.)
- DVD player
- VHS player
- Video camera/recording device
- Computer
- Television
- Specialized computer software
- Projectors

Please rank the media you use in your classroom with 1 being the media you use
most frequently.
- Newspapers
- Magazines
- Internet
- Television
- Radio
- Film
- Other. Please explain.

How often do you use media in the classroom?
- 1-never
- 2-rarely
- 3-sometimes
- 4-often
- 5-everyday
Please rank the technology you use in your classroom with 1 being the technology you use most frequently.

___ DVD player
___ VHS player
___ Video camera/recording device
___ Computer
___ Television
___ Specialized software
___ Projectors
___ Radio

The Likert-type scale was the response set for the last set of statements measuring this concept:

1-strongly disagree
2-disagree
3-No opinion
4-agree
5-strongly agree

Staff development workshops in my school emphasize media use in the classroom.

I use media in the classroom to teach different perspectives on a particular subject.

I use media such as television, film, Internet, newspapers, magazines and radio to stimulate interest in new topics.

My students compare information from various sources, including new media, such as websites or blogs.

**Concept: Perceptions of media use**

This concept is unique because it cannot be measured or assessed in conjunction with archival data. Querying teachers about their opinions is an effective way of measuring teachers’ perceptions. The ranking question used to measure perceptions evolved from the pilot study, where participants indicated that oftentimes they agreed with more than one answer. Asking specific, scaled questions about using media allowed
me to measure perceptions of teachers, while also developing an understanding of inhibiting factors to using media in these districts.

The questions measuring perceptions of media use were designed to include concepts from Potter’s (2001) four dimensions of media literacy: cognitive, emotional, aesthetic and moral. I addressed these themes in many of the questions measuring this concept, in order to assess where district educators fall on Potter’s (2001) continuum of media literacy. He argued that knowledge structures play into how media literate people are in any one dimension and that there is a continuum for each dimension. In this way, media literacy is measured based on where you “fall” on each of those dimensions as well as considering the dimensions together.

**Conceptual definition:** Perceptions of media use include how teachers feel about using media in the classroom. This includes why they use or avoid using media, and more specifically, perceptions about whether they believe using media content distracts students or encourages involvement and participation.

The survey questions below measure teachers’ perceptions of their use of media.

Please rank the reasons that you use media, with 1 being the main reason.

___ I DO NOT use media in my classroom
___ To teach different perspectives on a particular subject
___ To stimulate interest in new topics
___ It applies to my subject matter
___ It encourages student participation
___ Media resources are available to me
___ My school encourages media use
___ Other. Please explain in a few words
Please rank the reasons that you avoid using media, with 1 being the main reason.

___ I DO NOT avoid using media
___ It does not apply to my subject matter
___ It discourages student participation
___ Media resources are not available to me
___ Media content is inappropriate
___ My school discourages media use
___ Negative feedback from parents
___ Other. Please explain in a few words

The Likert-type scale below was the response set for the last set of statements used to measure this concept:
1-strongly disagree
2-disagree
3-No opinion
4-agree
5-strongly agree

Media content from film, magazines, radio broadcasts, newspapers, internet, etc. has a place in the classroom.

Media (television, film, magazines, newspapers, internet, radio, etc.) can be used in the classroom to encourage participation from students.

Media use in the classroom distracts students from learning the material.

It is difficult to use media in the classroom because of negative feedback from parents.

I believe using media content to help students recognize what emotions media messages are trying to elicit from them expands student literacy (the ability to interpret words and messages).

I believe using media content to help students recognize different creative techniques used in message production does not expand student literacy.

I believe using media content to help students recognize the moral themes and values presented in a message expands student literacy.

I believe using media content to help students learn factual information such as definitions and dates does not expand student literacy.
**Concept: Discussion of media content**

Media literacy approaches examined in both the literature review and archival data promote discussion as a key principle to integrating media literacy. I have credited the importance of asking key questions as a way to teach students how to assign credibility to information and media. These questions can be useful in group discussion because they allow students to hear and evaluate different interpretations of the same information or message. The second series of scaled questions in the survey seeks to measure this concept on a continuum similar to that defined by Potter (2001). These questions incorporate the cognitive, moral, emotional and aesthetic dimensions of media literacy. Unlike the concept about perceptions of discussion of media content, these questions strictly measure classroom practices, and not beliefs or opinions.

**Conceptual definition:** Discussion of media content considers whether teachers discuss media content in the classroom, both related to the subject matter and outside the subject matter. This includes the context and content of class discussions, but does not take beliefs or opinions into account.

How often do you discuss media in the classroom?

- ___ 1-never
- ___ 2-rarely
- ___ 3-sometimes
- ___ 4-often
- ___ 5-everyday

The scale below was used as the response set for the next series of questions:

1-strongly disagree
2-disagree
3-No opinion
4-agree
5-strongly agree
Staff development workshops in my school emphasize discussion of media content in the classroom.

When I discuss media content such as television, film, newspapers, magazines, internet, etc. in the classroom, I avoid provoking debate amongst students regarding how media content depicts certain controversial topics, such as sex, politics or religion.

When I discuss media content in the classroom, I encourage debate amongst students regarding how media content depicts certain controversial topics, such as sex, politics or religion.

I correct students’ erroneous beliefs that were fostered by media content.

I talk about the values portrayed in media content such as television, film, newspapers, magazines, internet, etc.

I ask students how media content makes them feel.

I talk about the creative techniques used in media to capture attention.

When I present traditional textbook curriculum or other non-mediated course materials to students, I discuss the author or creator of the material.

When I present traditional textbook curriculum or other non-mediated course materials to students, I discuss the values and moral themes in the material.

When I present traditional textbook curriculum or other non-mediated course materials to students, I discuss when the material was created.

When I present traditional textbook curriculum or other non-mediated course materials to students, I discuss why the material is significant to our course of study.

**Concept: Perceptions of discussion**

These questions are unique because they measure the opinions and beliefs of teachers in regards to discussion of media content and industries. Although the perceptions of discussion cannot be measured through the archival data, the results of
these questions can be compared with concepts identified in the state and district
documents. In this way, it is possible to understand how perceptions of media use and
discussion evolve or diverge from the archival data evaluated.

**Conceptual Definition:** Perceptions of discussion of media content and industries
includes measuring why teachers integrate discussion of media in their classrooms and
the extent to which they see this discussion as positive or negative. Beyond measuring the
practices, as accomplished by the above concept, measuring perceptions incorporates the
opinions of district teachers.

The survey questions below measure perceptions of discussion of media.

Please rank the reasons that you discuss media content, with 1 being the strongest reason.
____ I DO NOT discuss media content
____ To teach different perspectives
____ To stimulate interest in new topics
____ It applies to my subject matter
____ It encourages student participation
____ Media resources are available to me
____ It stimulates student discussion
____ My school encourages media discussion
____ Other. Please explain in a few words.

Please rank the reasons that you avoid discussing media content, with 1 being the strongest reason.
____ I DO NOT avoid discussion of media
____ It doesn’t apply to the subject matter
____ I don’t have the resources to discuss it
____ It distracts students from learning
____ My school discourages media discussion
____ Negative feedback from parents
____ Curriculum demands don’t allow it
____ Time constraints
____ Other. Please explain in a few words.
The scale below was the response set for the next series of questions:
1-strongly disagree
2-disagree
3-No opinion
4-agree
5-strongly agree

Discussion of media content in the classroom distracts students from learning the planned or ‘textbook’ material.

It is difficult to discuss media content in the classroom because of negative feedback from school administrators.

It is difficult to discuss media content such as television, film, newspapers, magazines, Internet, etc., in the classroom because of negative feedback from parents.

It is difficult to discuss media content such as television, film, newspapers, magazines, internet, etc., in the classroom because controversial content can instigate controversial classroom discussions.

I believe discussing media content to help students recognize what emotions media messages are trying to elicit from them does not expand student literacy.

I believe discussing media content can help students learn factual information such as definitions and dates.

I believe discussing media content to help students recognize different creative techniques used in message production expands student literacy.

I believe discussing media content to help students recognize the moral themes and values presented in a message does not expand student literacy.

**Concept: Media production and creation**

The 12 Basic Principles contend that media production and creation does not involve advanced technology skills or resources (Scheibe & Rogow, 2004). Media literacy approaches emphasize the importance of teaching students to be not only consumers of information, but also producers of it. Project Look Sharp contends that, by
asking students to create information or media messages, other media and information literacy skills such as assessing credibility and bias, are reinforced (Scheibe & Rogow, 2004).

Surveying teachers within both districts is critical to accurately measuring perspectives about media use and discussion and understanding how they translate into media use by teachers in the classroom. Survey questions were designed to allow respondents the freedom to give in-depth responses to some questions.

**Conceptual Definition:** Media production and creation involves teachers assigning class projects that require students to produce media messages.

The survey questions below measure perceptions about creating media.

Please rank the reasons that you create media, with 1 being the strongest reason.

___ I DO NOT create media
___ To teach different perspectives
___ To stimulate interest in new topics
___ It applies to my subject matter
___ It encourages student participation
___ Media resources are available to me
___ My school encourages media production
___ Other. Please explain in a few words.

Please rank the reasons that you avoid creating media, with 1 being the main reason.

___ I DO NOT avoid creating media
___ It doesn’t apply to the subject matter
___ I don’t have the resources to create it
___ It distracts students from learning
___ My school discourages media production
___ Too time consuming
___ Negative feedback from parents
___ Other. Please explain in a few words.
The data collected through the survey research also provided some specific examples of how Colorado teachers use and discuss media in the classroom. Many questions had qualitative response options where teachers could write in other media or technology they use frequently, or additional reasons they perceive as important in using and discussing media in the classroom. I evaluated these qualitative responses based on the district, and included them in the Results chapter. Although these specific responses cannot be generalized to the sample population, they provide rich, in-depth examples of how teachers align media and technology with their particular subject to advance student achievement. In addition, many of the qualitative responses identify inhibiting factors to media use and discussion in the classroom, and by synthesizing these responses with the quantitative survey data, I gained a better understanding of the concepts being measured.

Measurement of Archival Data

Several concepts measured by the survey questions were also considered in reviewing archival data. For example, examining the Colorado Information Literacy Standards for concepts that overlap with media literacy approaches indicated how information literacy diverges from the 12 Basic Principles (CDE, 2001; Scheibe & Rogow, 2004). Examining the terms and concepts that overlap between media and information literacy provided a framework for terminology included under the district information literacy directives. The concepts emphasized by the districts in the ETIL and ILT plans were important to consider when evaluating the survey responses of district teachers (ETIL Plan, 2006; ILT Plan, 2006). Both plans included the terms information
literacy and technology in their titles, and by evaluating the archival data for key terms and concepts, I assessed where the focus of each of these district plans lies. Key terms and concepts used to measure the archival data are listed in Table 4.1.

The Colorado Information Literacy Standards, Denver’s ILT plan, and Eagle County’s ETIL plan were all reviewed, looking for information literacy approaches that overlap with media literacy practices (CDE, 2001; ILT Plan, 2006; ETIL, 2006). The qualitative analysis of these archival data allowed me to categorize the state and district documents by determining what components of media literacy are included as information literacy in the CILS and district plans. To answer my final research question about proposing recommendations to the districts, I considered whether the survey results revealed that Eagle County and DPS teachers use media literacy methods defined by Project Look Sharp (Scheibe & Rogow, 2004). Internet surveys allowed me to assess the local practices of DPS and Eagle County schools on a classroom level, whereas the evaluation of archival data provided a foundation for understanding the state and district directives.

In order to make recommendations to the districts, I established whether there were any gaps between the state, district and classroom levels that inhibit the implementation of media literacy curricula. By using the Five Key Questions and 12 Basic Principles as the best practices to integrating media literacy education, the recommendations are shaped by inquiry-based approaches (Thoman & Jolls, 2004; Scheibe & Rogow, 2004). These recommendations were generated by considering what local practices fit within media literacy approaches, and what factors are inhibiting the
use of media in the classroom. The recommendations are reflective of the unique voices and perceptions of Colorado teachers, based on their distinct experiences in these districts. Outlining how local teachers are implementing the information literacy directives allows me to suggest strategies that consider media literacy as a separate skill set that can be taught and applied across all subjects and grades in the Eagle County and Denver school districts.
Chapter Four: Archival Data Analysis and Discussion

Introduction

The Methodology chapter established that the multi-faceted nature of my research questions requires multiple procedures. In this chapter, I will offer an analysis of applicable archival data from both Denver and Eagle County districts and the statewide Colorado Information Literacy Standards. This will allow me to answer my second research question about how local directives compare with Project Look Sharp’s 12 Basic Principles of integrating media literacy. I will complete a thorough analysis of the CILS, ILT and ETIL plans looking for words and concepts that overlap between media literacy and information literacy approaches. In moving forward, I will talk about what pieces are missing from information literacy that are critical components to media literacy and I will offer recommendations for how media literacy approaches could be successfully integrated into the districts’ plans and CILS. I will also use the archival data to further explore where the concepts of media literacy and information literacy overlap, and where they are distinct. Using key terms will allow me to categorize archival data to determine what components of media literacy are included in the CILS and district plans. In order to measure the archival data, I will review the CILS, ILT and ETIL plans for terms related to media and information literacy including:
Table 4.1:  
Key Terms Measured in Archival Data

<table>
<thead>
<tr>
<th>Literacy Terms</th>
<th>Literacy Skills</th>
<th>Skills Terms</th>
<th>Any of the main terms paired with any of the bulleted terms</th>
</tr>
</thead>
</table>
| Media literacy, information literacy, traditional literacy, technology literacy, computer literacy | Reading, writing, listening, speaking and viewing, critical thinking, creativity, critical evaluation | Information skills, 21st century skills, communication skills, lifelong learning skills, inquiry-based learning | Access to  
• Media, information, technology  
• Computers, newspapers, magazines, books, television, radio, websites, the Internet |

In my analysis, I determined how well aligned the state and district directives are with media literacy principles based on the frequency and context of these terms. I chose these terms based on definitions of media literacy and information literacy in reviewed literature, and within this chapter, I use them to answer my second Research Question about how local directives compare with the media literacy principles. Qualitative data analysis is exceptional in its ability to provide rich context and verbatim responses, and in evaluating the archival data, I looked for overlaps and distinctions. Although some terms appear in both the definitions of media literacy and information literacy, the two concepts have measurable differences. In evaluating the CILS and 12 Basic Principles, I examined how often each term was referred to and which terms were repeated most frequently. I interpreted the recurring terms in each document to be a foundation of each concept and
construed the overlapping terms to represent the similarities between media literacy and information literacy. Differences between the two concepts were evaluated based on what terms were missing or overlooked in defining the concepts. I then interpreted the CILS based on these overlaps and distinctions. I have identified different themes in the archival data, and using the table below, I will flesh out the differences and similarities between the documents.

Analysis Results: Colorado Information Literacy Standards and 12 Basic Principles

Evaluating these documents along with the CILS for their likeness to ideal media literacy practices helped me determine where the district directives lie on Potter’s (2001) media literacy continuum. Because media literacy is evolving as an important component to pedagogical efforts in the information age, many national organizations have been created that work with educators to design curriculum that integrates media literacy practices into pre-existing curriculum. In 2004, Project Look Sharp (Scheibe & Rogow) published their “12 Basic Principles for Incorporating Media Literacy and Critical Thinking into Any Curriculum.” The booklet is intended as a guide for teachers of all grades and subjects who wish to incorporate media literacy approaches into their current curriculum. I have chosen Project Look Sharp’s 12 Basic Principles as encompassing the best practices in media literacy education, and I use these principles as a framework to examine where media literacy approaches presently overlap with the Colorado
Information Literacy Standards. These statewide standards established in 2001 are evidence that classroom practices are changing and adapting to the information age.

The CILS suggest that information literacy overlaps with traditional subject matter being taught in Colorado classrooms and includes integrating and utilizing technology to enhance learning. Within the document, these standards are evaluated in conjunction with major subjects including history, math, music, physical education, reading and writing, science and visual arts. In-depth descriptions of each standard, their indicators and rationale provide greater insight into potential subject alignment. In the following section, I thoroughly evaluate these standards and investigate how information literacy and media literacy are distinct concepts. I also assess what concepts from the CILS include media literacy approaches as defined by Project Look Sharp (PLS).

Although the term information literacy is used in the title, the standards incorporate components of media literacy, and I will examine how the 12 Basic Principles (PLS 12) overlap with the CILS. While there are significant differences between the CILS and media literacy approaches, I have found that some media literacy skills are encompassed under the information literacy heading. The CILS are listed in Table 4.2, and the entire document can be found in Appendix B.

Table 4.2

<table>
<thead>
<tr>
<th>Colorado Information Literacy Standards</th>
</tr>
</thead>
<tbody>
<tr>
<td>The information literate student:</td>
</tr>
<tr>
<td>• accesses information efficiently and effectively</td>
</tr>
<tr>
<td>• evaluates information critically and competently</td>
</tr>
<tr>
<td>• uses information accurately and creatively</td>
</tr>
</tbody>
</table>
The information literate student is an independent learner who:

- pursues information related to personal interests
- appreciates literature and other creative expressions of information
- strives for excellence in information seeking and knowledge generation

The information literate student contributes positively to the learning community and to society:

- and recognizes the importance of information to a democratic society
- and practices ethical behavior in regard to information and information technology
- and participates effectively in groups to pursue and generate information


The CILS define information literacy as the ability to *access, analyze, evaluate* and communicate information. I used these terms, along with several other key terms frequently referred to in the district plans to make the thorough list of key terms and concepts listed above. While both documents touch on nearly all of the terms chosen for this analysis, their frequency and emphasis is quite different. Thus, these documents are both quantitatively and qualitatively different in their inclusion of media literacy and information literacy concepts but also share similarities that I will discuss. Table 4.4 lists the themes that emerged from my evaluation of the CILS, and I will use these themes as a way of addressing similarities and differences between the CILS and 12 Basic Principles.
Table 4.3: 
Themes in a comparison of the CILS and PLS 12 Basic Principles

<table>
<thead>
<tr>
<th>Themes that reflect similarities between the CILS and 12 Basic Principles</th>
<th><strong>Accessing information</strong> is a common thread between information literacy and media literacy</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Critical evaluation</strong> is stressed in both the CILS and the 12 Basic Principles</td>
</tr>
<tr>
<td></td>
<td><strong>Independent learning</strong> is emphasized by both media literacy and information literacy</td>
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<td><strong>Excellence in information seeking</strong> is encouraged by media literacy principles and the CILS</td>
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<tr>
<td>Themes that reflect differences between the CILS and 12 Basic Principles</td>
<td>The <strong>frequency and context of the term media</strong> in the CILS and PLS 12 indicates that information literacy and media literacy approaches differ. CILS has a narrow use for media whereas PLS 12 recognizes a wider application</td>
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<td>The <strong>absence of production and creation</strong> as key terms is another difference between the media literacy principles and information literacy standards</td>
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<td><strong>Discussion of media content</strong> is a critical principle of media literacy that is not listed anywhere within the CILS</td>
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<td></td>
<td><strong>Specificity of terms and definitions</strong> differ in the CILS and PLS 12, with the later including more detailed description</td>
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Accessing information

The first theme that emerged from my analysis is that accessing information is a common thread between information and media literacy approaches. CILS Standard 1, states that “the information literate student accesses information efficiently and effectively,” (p. 1). This standard emphasizes the importance of access to information; it is focused on the ability to find information and use resources competently without directly addressing how or where to search for information. For example, indicators for CILS (2001) 1 include “identifies a variety of potential sources of information” and “develops and uses successful strategies for locating information” (p. 3). No mention is made of where to access information or how to assess credibility within information sources, which media literacy principles identify as fundamental to accessing information effectively. The basic principles emphasize that in order for students to access media effectively, they must be taught to practice critical thinking and analysis skills to determine media credibility and reliability. However, the rationale for this standard suggests that information literate students know when and where to seek information, how to frame questions, and how to locate the ‘best information’. The basic principles are more specific, suggesting strategies for finding information such as searching the Internet. Media literacy skills stress the critical thinking skills needed to evaluate information sources and encourage students to ask questions based on specific information needs. Neither the CILS nor the 12 Basic Principles specifically stress or define the technical skills necessary to access information or media. Accessing
information efficiently is a skills-based approach that develops over a lifetime of technology and media use for the purpose of locating information.

The CILS (2001) includes a definition of information literacy as the ability to access, analyze, evaluate and communicate information. Standards 1, 2, and 3 all include key terms; mainly the ability to access, evaluate and use information. These standards also consider creativity, critical thinking and accurate information use, all of which overlap with media literacy concepts. CILS (2001) 7 also stresses the ability to access information: “The information literate student contributes positively to the learning community and to society and recognizes the importance of information to a democratic society” (p. 1). Indicators to Standard 7 include “seeks information from diverse sources, contexts, disciplines and cultures; respects the principle of equitable access to information; and understands that access to information is basic to democracy” (p. 13). A fundamental error in this standard is that it implies that because we live in a democratic society, there is equality in society’s ability to access information. Although schools and libraries may be equipped with computers, the Internet and other information sources, equal access is certainly not a given. Media literacy perspectives recognize the different ways people access information, helping students understand the importance of information to a democratic society and the role of different media industries in producing information.
Critically evaluating information

The ability to evaluate media critically is a cornerstone of media literacy education and CILS (2001) Standard 2 shares the most overlap with media literacy principles. It states: “The information literate student evaluates information critically and competently,” (p. 1). Although this standard indicates that students should critically evaluate information, it does not suggest specific methods that foster the habitual evaluation of information credibility, awareness of information sources, or independent interpretation of information messages.

The full title of the 12 Basic Principles includes ‘integrating critical thinking skills.’ Many basic principles promote the critical evaluation of media, and Project Look Sharp suggests specific ways to promote critical analysis of information in the classroom. For example, Basic Principle 1 (Scheibe & Rogow, 2004) suggests students “use media to practice general observation, critical thinking, analysis, perspective-taking, and productions skills by encouraging students to think critically about information presented in any media message,” (p. 2). The principles suggest that rather than simply analyzing the content of the message being communicated, students need to evaluate where the information is coming from, how credible the source is, and who benefits from the point of view expressed in the information. By critically evaluating information beyond message content, students gain an understanding of media industries and ownership and how these concepts influence the information produced. According to the basic principles, this includes allowing students to go beyond the specific topic at hand to
identify and discuss aspects of a media message such as the characteristics of the people presenting the material or the techniques used to attract attention.

Indicators for Standard 2 include some media literacy approaches promoted by the 12 Basic Principles such as determining the accuracy, relevance, and comprehensiveness of information and distinguishing among facts, point of view and opinion. According to the CILS, a student is information literate if they’re able to use informed judgment to accept, reject, or replace information. Although this indicates that students critically evaluate information, the CILS does not offer any suggestion of how to teach students to develop an awareness of issues surrounding credibility and bias. Instead, the CILS emphasize the importance of identifying inaccurate information, but rely on logic to determine information validity. Although the indicators for this standard include key terms, such as determining the accuracy and relevance of information, the CILS do not highlight any specific skills or exercises that teach students how to distinguish between facts, point of view and opinion. In contrast, media literacy approaches encourage students to explore a variety of sources when seeking out information, which is key skill to developing an understanding of media industries. These exercises teach an inquiry-based approach that encourages students to use general observation to compare sources, allowing them to critically evaluate information beyond message content.

Whereas critical thinking and evaluation are fundamental to media literacy and information literacy efforts, the media literacy principles suggest specific ways to teach critical evaluation of media messages. In contrast, the information literacy standards
emphasize critical evaluation, but rely on logic to determine validity. The specificity of practices is a major distinction between the information literacy and media literacy practices outlined. The concept of critical evaluation clearly overlaps between media literacy and information literacy approaches, and this shows that the intention of the CILS could be interpreted as more extensive than simply the ability to use information.

**Independent learning**

Three of the nine information literacy standards stress the importance of independent learning to information literacy. CILS (2001) 4, 5, and 6 all state that the information literate student is an independent learner, and indicators for these standards suggest that information literate students “seek information related to various dimensions of personal well-being, such as career interests, community involvement, health matters, and recreational pursuits” and “assesses the quality of the process and products of personal information seeking” and “devises strategies for improving and updating self-generated knowledge” (p. 12). These indicators imply that information literacy is a skill that can be used independently of an academic setting to achieve lifelong pursuits.

Media literacy principles recognize that students will undeniably access and interact with media outside of the classroom, and they understand the importance of this knowledge. The media literacy principles that overlap with these standards are focused on encouraging independent media use. For example, Basic Principle 3 (Scheibe & Rogow, 2004) suggests that students “identify ways they may already be familiar with a topic by giving examples from popular media content to illustrate what they know about
a topic” (p. 3). In this way, media literacy principles recognize that knowledge gained by students outside the classroom can encourage interest in or class discussion about a topic. By teaching students how to critically analyze and evaluate media content in the classroom, teachers encourage skills that can become habitual for students as independent learners.

The concept of independence reappears several times in the rationale behind Standard 4, which suggests that students independently access, evaluate and use information of personal interest. This promotes an inquiry-based learning process, by encouraging students to use other information literacy skills like critical evaluation and efficient access of information outside the classroom setting. Validating what students learn outside the classroom and correcting erroneous beliefs that might have been fostered by media content encourages students to be independent learners and to contribute to discussions about media content and information sources.

**Excellence in information seeking**

When teachers encourage independent and informed media use beyond school, they prepare students with the critical thinking and evaluation skills necessary for students to be excellent information seekers. CILS (2001) 6 suggests that “the information literate student is an independent learner who strives for excellence in information seeking and knowledge generation” (p. 12). The indicators to this standard are: “assesses the quality of the process and products of personal information seeking and devises strategies for revising, improving and updating self-generated knowledge” (p. 12).
12). I interpret this as meaning that students are self-motivated in seeking new and updated information outside of the classroom, both for learning purposes and relating to personal interests. Although this information literacy standard requires that students be self-motivated to seek out ‘excellence’ in information and make use of relevant information, no strategies for teaching students how to assess information quality are indicated.

In contrast, the 12 Basic Principles suggest that teaching students to habitually critically evaluate mediated information in and out of school will promote independent learning and excellence in information seeking. When teachers encourage independent and informed media use beyond school, they prepare students with the critical thinking and evaluation skills necessary to be excellent information seekers. This involves incorporating information and media literacy skills such as accessing various types of media as information sources, allowing students to compare the usefulness of differences, and address conflicting information, which promotes excellence in information seeking.

**Frequency and context of the term media**

The CILS stress the importance of accessing, critically evaluating, and using information, but never specifically identify *media* as an information source. Furthermore, the state standards do not explicitly recognize how or where student’s use information, nor do they recognize the source of the information. Instead, the CILS focus on the ability to access information and suggest that seeking information from diverse sources, contexts and cultures and ensuring equal access to information promotes democracy.
More than half of the 12 Basic Principles highlight media use and suggest specific ways for teachers to use media in the classroom to endorse traditional skills such as reading comprehension, expressing knowledge about a subject, or researching a new topic. For example, PLS 12 (Scheibe & Rogow, 2004) suggest using “media to stimulate interest in a new topic by showing students how to search for information about the topic on the Internet” or “identify ways they may already be familiar with a topic by giving examples from popular media content to illustrate what they know about a topic” (p. 3).

Similarly, the CILS state that an information literate student “uses information to draw conclusions and develop new understandings” (p. 1). The PLS 12 directly recognize media content as an information source and suggest ways for students to develop critical thinking and evaluation skills by using media sources to evaluate information. The principles also propose that educators use media “to convey information more richly and effectively than would be possible with a standard classroom discussion or demonstration” (p. 3). In this way, media literacy approaches can be effective in teaching traditional content, while also developing more advanced evaluation skills.

Although the CILS never recognizes media as an information source, the term media appears as a rationale for Standard 5, which emphasizes independent learning. It suggests that “students read to locate, select, and make use of relevant information from a variety of media, reference, and technological sources” (p. 10). Standard 5 is aligned with several subjects, including Civics, Foreign Language, Geography, History, Math, Music, Reading and Writing and Visual Arts. Although each subject suggests potential alignment
with Standard 5, the term media is only used under the Reading and Writing heading. It suggests that students “make use of relevant information from a variety of media, reference, and technical sources” (p. 11). This statement recognizes media as an information source, but the absence of the term for other subjects is evidence that media is more likely to be considered as only necessary in language arts curriculum. However, media literacy scholars would suggest a much broader use of media across curricula.

Using media content does not require that educators teach media literacy skills outside of their traditional curriculum, but promotes the practice of integrating inquiry-based learning skills to current subject content. This approach is similar to what Gonzales et. al (2004) suggested in their study, “Media Literacy and Public Health.” Using media content can encourage interest and participation from students in learning core curriculum and can keep students engaged in learning the material. Asking key questions and discussing the intentions and source of information can foster critical thinking skills, making students more informed users of media.

**Discussion of media content**

Although many concepts have been found to overlap between the media literacy and information literacy directives thus far, several important media literacy concepts are absent from the CILS. For example, discussion of media content is not listed anywhere within the CILS, although it appears often throughout the 12 Basic Principles. This is a major distinction between the two documents, and it is also a key difference between media literacy and information literacy concepts. Although information literacy does call
for the critical evaluation of information, concepts such as interpretation, production and discussion of messages are absent in the CILS. This indicates that these concepts are not required for a student to be a competent user of information. While the CILS state that an information literate student “determines quality information by accessing for accuracy, validity, relevance, completeness, and impartiality,” there is no indication of how students determine information quality. Instead, the standards rely on “logic and informed judgment” to determine the quality and credibility of information (p. 4).

In contrast, the PLS 12 emphasize discussing the strengths of different media to disseminate a specific message, discussing controversial media content and what role the media have played in the development of a particular topic. The PLS 12 propose ways for teachers to encourage students to think critically about media content and identify creative techniques and incidental aspects of media information through group work and class discussions. The absence of discussion in the CILS is a critical gap in promoting information literacy. Discussion allows students to compare information sources, which introduces the concepts of credibility, reliability and bias in media industries. Discussion can also familiarize students with cultural factors that influence how people from different backgrounds access, disseminate and interpret information. This can encourage students to express their individual interpretations, validates students’ unique opinions and observations and promotes independent learning by allowing students to discuss information they encountered outside of school. Finally, discussing information content
does not require any advanced technology skills or technology resources, and can be integrated into current curriculum without any additional resources.

**Absence of creation and production**

The concepts of producing and creating information are also important media literacy principles that are absent from the CILS. This limits students’ ability to recognize how media and information sources are governed by rules and restrictions and is evidence of another important difference between information literacy and media literacy skills. PLS 12 stress the importance of producing media messages for several reasons, and argue that when students create their own informative messages, the concept that all messages are created with specific intentions is reinforced. According to PLS 12, using creative techniques to produce informative messages can help students recognize that media industries use particular methods to foster interest in information content ranging from news, advertisements and entertainment. Creation and production of messages is an important media literacy skill because it can help students become more critical evaluators of the creative techniques used to capture attention. The 12 Basic Principles suggests that it also helps them to think more about why messages are constructed in particular ways, which can help students to be more critical thinkers when they approach media content as a source of information.

By asking students to produce messages, the CILS could successfully promote Standards 3 and 9, which call for the creative use of information and the generation of information. Although Standard 5 implies that information literate students appreciate
creative expressions of information, it does not indicate that information literate students create or produce information or use that appreciation of creative expression as a way to think critically about the message. While ‘developing creative products’ could be interpreted as a form of information creation/production, the standards do not specifically define the products and formats of various information sources, including media. Discussion of different creative techniques used to target specific audiences allows students to develop an understanding of message intention. Implementing media literacy skills such as discussion and creation of content are an effective way to promote information literacy standards.

The final standard is the first to mention generating information. While media literacy practices emphasize media creation and production as a cornerstone to informed media use, the CILS (2001) place little emphasis on producing information in the first eight standards. However, Standard 9 states that “the information literate student contributes positively to the learning community and to society and participates effectively in groups to pursue and generate information” (p. 15). The indicators for this standard stress collaboration with others, sharing information and knowledge, and designing, developing and evaluating information products and solutions. These concepts are well-aligned with many of the 12 Basic Principles, which encourage group work as a way of promoting critical evaluation and multiple interpretations.
Specificity of terms and definitions

The purpose of the CILS is to define the information literate student; however the document never explicitly defines any information sources or the term information technology, which appears throughout the document. Whereas the 12 Basic Principles focus on media content as an information source, the CILS focus on the acquisition and evaluation of information. The 12 Basic Principles define media very broadly to include many formats that are likely used in every Colorado classroom. For this reason, many of the media literacy approaches suggested by the 12 Basic Principles could be applied to the information focused on in the CILS.

Despite the differences between information literacy and media literacy concepts, this evaluation showed that many of the 12 Basic Principles overlap with concepts emphasized in the CILS. After reviewing the two documents, I can more clearly distinguish between media literacy and information literacy concepts. The concept of critical evaluation is fundamental to both and is evidence of a clear overlap between the CILS and PLS 12. However, the PLS 12 approaches recommend specific ways to teach critical evaluation such as allowing students to discuss, compare and share messages they encounter. Analysis of the CILS revealed that discussion and message creation are components of media literacy that are missing from the information literacy standards, and this is important to consider moving forward and evaluating the district archival data.

The specificity of the documents reflects their distinct purposes: The CILS are intended as a framework to defining the information literate student and to provide an
outline of how the nine standards can be applied to curriculum. PLS 12 are designed to help teachers integrate media literacy into their current course work by suggesting ways to encourage informed media use. Nevertheless, the standards stress some media literacy concepts like the importance of independent learning, critical evaluation skills, and the ability to access information effectively. Media and information literacy approaches highlight the importance of using skills learned in the classroom independently and habitually. This involves shifting to a more process-oriented approach and promoting the critical analysis and interpretations of messages through discussion. Although many media literacy skills involve accessing information and using media, the exercises are designed to encourage critical thinking about information, which can be fostered through class discussion and group work. There are several benefits to this more critical approach to information evaluation. Discussion of media content does not require advanced technology literacy, a term that is significant to the Denver and Eagle County district plans. Survey results analyzed in Chapter 5 will show that districts identify the technical skills of instructors and availability of resources as inhibiting factors to media use.

The district plans are based on the CILS and the Partnership for 21st Century Skills (2003). The intent of the 21st century skills is to “learn both core and 21st century content within a 21st century context.” According to the Partnership, these skills include critical thinking, problem solving, communication, collaboration, creativity, self-directed learning, information and media literacy, accountability and adaptability, and social responsibility. Many of these skills overlap with media literacy and information literacy.
concepts discussed above. In the next section, I will consider how the themes emerging from the CILS and PLS 12 apply to Denver’s Information Literacy and Technology (ILT) plan. Comparing these documents for key terms and common themes will serve as a measurement for how overlapping information and media literacy concepts are represented on the district level. Survey results analyzed in Chapter 5 will consider these themes on the classroom level.

*Denver Public School’s Information and Technology Literacy Plan*

Whereas the CILS apply to all of Colorado, each school district in the state also has its own plan for how to incorporate information literacy into the curriculum. In the next section, I will discuss the plan for Denver Public Schools (DPS), which is called the Information Literacy and Technology plan (ILT). The mission of the ILT plan (2006) is to “use tools and information skills effectively to support student achievement and a comprehensive program of 21st century learning…The ILT mission is grounded in the recognition that DPS must prepare students to lead fulfilling lives and be effective, responsible citizens in a global, high-tech, information-rich society.” (p. 6). Emphasis is placed on the continual changes of the 21st century, and the importance of preparing students for a lifetime of active learning.

The ILT plan is structured as a communication plan, outlining goals, objectives, a needs assessment, professional development, technology infrastructure, the budget, action plan, and evaluation methods. In this section I will discuss what I found after thoroughly
reviewing the ILT plan for the same list of key terms used to examine the CILS and PLS12 (See Table 4.4). These key terms serve as a measurement of which parts of the ILT plan coincide with media and information literacy approaches. I chose these terms because the ILT plan is based on the CILS and the Partnership for 21st Century Skills (2003). Media and information literacy skills are addressed as fundamental information and communication skills by the Partnership; specifically analyzing, accessing, managing, evaluating, and creating information in a variety of forms and media and understanding the role of media in society as important skills.

Media literacy approaches unquestionably promote an understanding of the role of media in society, and the skills defined by the Partnership include many fundamental media literacy terms such as analyze, access, evaluate, and create information. Many of these skills also overlap with information literacy approaches, such as critical evaluation, information access, creativity, independent learning, and group collaboration. Based on the frequency and context of the key terms in Table 4.4, I assessed how the ETIL and ILT plans lay emphasis on information, technology and media literacy skills. I used this information to draw comparisons between the districts and to make suggestions to about how the plans could be improved. Both the ILT and ETIL plans identify several variables as key to the success of the district-wide plans. The main goals of the plans are designed to promote student achievement in 21st century learning skills, and they are outlined in Table 4.4. The complete district documents can be found in Appendices D and E.
**Table 4.4:**
*An Overview of the District Documents*

<table>
<thead>
<tr>
<th>Denver’s Information Literacy and Technology Plan</th>
<th>Eagle County’s Educational Technology and Information Literacy Plan</th>
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<tbody>
<tr>
<td><strong>Goals:</strong></td>
<td><strong>Goals:</strong></td>
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<tr>
<td>1. <strong>Buy-in:</strong> Engendering active involvement by stakeholders across the district in the ILT mission and the efforts required to fulfill this mission.</td>
<td>a. Students and staff must be able to exhibit and demonstrate essential skills from established and evolving technologies, which will be integrated into content curriculum and teaching b. It is the District’s vision to enhance the application of technology and information literacy skills for its staff and students</td>
</tr>
<tr>
<td>2. <strong>Staff Proficiency:</strong> Attaining proficiency on the part of district educators in the use of tools, information skills, and collaboration processes needed to support student learning.</td>
<td>c. All students and staff will be afforded the opportunity to access and incorporate information resources. Mastery of these lifelong learning skills will lead to increased productivity, adaptability, creativity and achievement</td>
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<tr>
<td>3. <strong>Integration:</strong> Incorporating tools and information skills into district content curriculum.</td>
<td>d. Technology should allow learning or demonstration of an achieved skill set to be showcased with certain seamlessness.</td>
</tr>
<tr>
<td>4. <strong>Student Proficiency:</strong> Attaining proficiency on the part of all district students in the use of tools and information skills to support their learning.</td>
<td>e. ECS technology should enable, enhance and encourage further learning opportunities for the student and the teacher.</td>
</tr>
<tr>
<td>5. <strong>Equity:</strong> Ensure that all students and teachers have meaningful experiences in using tools and information skills to support 21st century learning and to develop proficiency in the use of such tools and skills.</td>
<td>f. Timeliness of data and ease of access to real time information and programs will be critical in closing the achievement gap in our diverse district.</td>
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<tr>
<td><strong>Needs Assessment:</strong> Administrative and teacher buy-in regarding the importance of incorporating educational technology and information literacy</td>
<td><strong>Needs Assessment:</strong> The ETIL plan addresses the characteristics of Eagle County that make its students unique. It highlights the presence of Vail and Beaver Creek resorts as seasonally affecting the county’s industry, and thus the economic situation of students and their</td>
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<td>• Educator proficiency in incorporating</td>
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educational technology and information literacy in teaching and learning;
- Incorporation of educational technology and information literacy in curriculum;
- Student proficiency in using tools and information skills to enhance learning;
- Equitable and comprehensive program support (including infrastructure, staffing, funding, and scheduling) to facilitate implementation of district ILT goals.

Progress in these need areas has been variable.


The Needs Assessment and Goals of both documents include several relevant terms such as, *technology, information literacy, educational technology, 21st century learning, using tools and information skills, and technology access*. Many of the themes developed in both district plans are drawn from both the Partnership for 21st Century Skills (2003) and the CILS (2001). In order to thoroughly evaluate each document, I categorized key terms and concepts based on the frequency and context of the list of terms in Table 4.3. The emphasis of the ILT plan is on *the use of tools and information skills* to support *21st century learning*. Although *information skills* are referred to more than thirty times throughout the document, the ILT plan does not elaborate on the specific skills that support students in the pursuit of knowledge; the ability to use computers, the Internet, and other sources to access and communicate information. However, because the ILT
plan is founded on the CILS, some media literacy skills are a part of the “tools and information skills” that are addressed by the ILT plan. Table 4.5 presents the themes that emerged from a thorough evaluation of the ILT plan.

Table 4.5: ILT themes

<table>
<thead>
<tr>
<th>Themes that reflect similarities between the ILT plan, CILS and 12 Basic Principles</th>
<th>The ILT plan includes the acquisition of <strong>information literacy</strong> skills in the needs assessment and goals and is based on the CILS, which suggests that some overlapping concepts are included. The ILT plan suggests the district intends to replace a tool-specific approach with an <strong>inquiry-based</strong> approach, which means it will be better aligned with information and media literacy.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Themes that reflect differences between the ILT plan, CILS and 12 Basic Principles</td>
<td>Whereas PLS 12 emphasize the use of <strong>media</strong> as a tool to foster creativity, critical evaluation, and independent thinking, the ILT plan highlights the use of tools and <strong>information skills</strong>. <strong>Technology</strong> skills, use, access and literacy are emphasized in the ILT plan, but not the CILS or PLS 12. A main difference between the 12 Basic Principles and the ILT plan is the approach used to reach the target audience.</td>
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</table>

These themes represent similarities and differences between the district-level documents and the statewide information literacy standards. The ILT plan was developed in conjunction with the CILS and Partnership for 21st Century Skills (2003). Information
and media literacy are identified as information and communication skills by the Partnership, as are communication skills such as the ability to create effective oral, written and multimedia communication in a variety of forms and contexts. Although the ILT plan lists all the 21st century learning skills identified by the Partnership, they do not elaborate on how these skills can be integrated into the curriculum.

**Use of media vs. use of tools and information skills**

There are several significant differences between the ILT plan and media literacy approaches. For example, *media* is never acknowledged as an information source in either the CILS or ILT plan. Goal five in Table 4.4 speaks to the need for developing proficiency using 21st century tools and information skills; however these specific skills are never defined. The ILT (2006) plan defines literacy as “the use of a tool or skill to make meaning for oneself” and identifies technology as a tool that can enhance ones knowledge (p. 11). The ILT (2006) plan does not list strategies for using technology as a tool, but affirms that “the district’s technology literacy planning calls for both incorporation of tools and information skills in all teaching and learning” (p. 7). In contrast, media literacy principles focus specifically on utilizing mediated messages as information sources. The 12 Basic Principles suggest ways to use media as a tool for promoting information skills, thus, PLS 12 identify *media* as a tool for accessing information, whereas the ILT plan calls for the use of “tools and information skills” without ever defining the skills or tools.
Technology skills and technology literacy

Although the term technology appears more than forty times in the ILT plan (2006), it is not specifically defined. However the document defines technology literacy as “a set of skills and habits that support students and staff in the pursuit of knowledge” (p. 11). The plan suggests that students “acquire technology literacy by using it in increasingly sophisticated, meaningful contexts” (p. 11). Although no specific technology skills are identified, I assume they include computer proficiency, such as the ability to access information on the Internet and communicate through electronic formats. I made this assumption because teacher proficiency in using tools and information skills is identified as a major challenge in the implementation of the ILT plan. The plan lists strategies in place to maintain and procure technology, and also addresses computer and video network connections as tools to support learning within the infrastructure strategies. Finally, although the plan indicates that educator proficiency is growing, the district acknowledges that it remains limited. Neither the CILS nor PLS 12 speaks to teacher proficiency in the integration of technology into the curriculum. No specific technology skills are identified by the CILS or PLS 12. Instead, these documents focus on an inquiry-based approach and emphasize locating appropriate information, but do not specify technology skills as a means of acquiring information. Although the 12 Basic Principles suggest exercises and strategies for having students evaluate multiple sources of information, the ability to access information through technology is not directly addressed as a skill.
Technology, media and information literacy approaches all emphasize the importance of information *access* and the ability to find, retrieve and distribute applicable information. Similarly, the ILT plan is largely organized around issues of equity in access, technology use and support. The ILT plan does not directly address many media literacy concepts that could also be classified as information literacy skills. In fact, while the ILT plan explicitly defines *technology literacy*, there is no definition of *information literacy*. In contrast, the purpose of the nine Colorado Information Literacy Standards, a foundation to the ILT plan, is to define the information literate student.

*Information literacy*

The ILT plan is built around the CILS, and analysis of the CILS and PLS 12 suggested that many media and information literacy skills overlap, such as critical evaluation, independent learning, and information analysis. Despite being based on the CILS, the ILT plan does not allude to any overlapping concepts drawn from the information literacy standards. Although the document claims that it addresses the acquisition of technology and information literacy skills, these skills are never defined beyond highlighting their importance. Evaluation of the CILS showed that information literacy shares overlapping concepts with media literacy approaches; however none of these overlapping concepts are addressed in the ILT plan. A content analysis of key terms and concepts showed that fundamental media literacy terms such as *produce, create,* and *analyze information* are absent from the ILT plan. Additionally, common information and
media literacy skills such as assessing the credibility of information sources and producing information are not addressed.

**Inquiry-based learning**

As aforementioned, the ILT (2006) mission is grounded in the recognition that DPS must prepare students to lead fulfilling lives and be effective, responsible citizens in a global, high-tech, information-rich society” (p. 6). The ILT plan is a conceptual framework which includes an EdTech Workgroup, charged with mapping the role of ILT efforts in support of district goals. This workgroup is revisiting the district’s ILT (2006) standards in an effort to “to replace a tool-specific approach with a habits-of-mind and lifelong learning approach, to add pertinent 21st century learning skills” (p. 10). Although the ILT plan lacks many media literacy terms, the concept of building inquiry-based learning skills that encourage students to examine information critically is an information literacy skill addressed by the Partnership for 21st Century Skills.

**Approach used to reach the target audience**

A main difference between the 12 Basic Principles and the ILT plan is the approach used to reach the target audience. The 12 Basic Principles are designed as a resource to help teachers integrate media use, analysis and discussion into curriculum. The purpose of the ILT plan is to provide a framework for teachers to integrate information and technology literacy approaches. However, the document also serves as a strategic communication plan to illustrate how district administrators are working to meet state standards. Thus, although both documents target teachers, one is intended as a
resource to implement media literacy approaches while the other is a framework for understanding district initiatives. Although the Eagle County School district is remarkably smaller than DPS; they have launched an Educational Technology & Information Literacy (ETIL, 2006) plan that is founded on a mission similar to Denver’s ILT plan. “It is the District’s vision to enhance the application of technology and information literacy skills for its staff and students, while providing the resources for a diverse and quality education” (p. 3). Many of the skills outlined within the ETIL plan are drawn from both the Partnership for 21st Century Skills and the CILS.

_Eagle County’s Educational Technology and Information Literacy Plan_

The first part of Eagle County’s district plan defines the information and communication skills prioritized by the Partnership for 21st Century Learning. Many of these skills share some common characteristics with media and information literacy approaches such as analyzing, accessing, managing, evaluating, and creating information in a variety of forms of media and understanding the role of media in society. Although the plan does not specifically define technology, it does include the technology literacy skills required by the Partnership for 21st Century Skills necessary for students to be technology literate:

- *Demonstrate a sound conceptual understanding of the nature of technology systems and view themselves as proficient users of these systems*
- *Understand and model positive, ethical use of technology in both social and personal contexts*
• Use a variety of technology tools in effective ways to increase creative productivity
• Use communication tools to reach out to the world beyond the classroom and communicate ideas in powerful ways
• Use technology effectively to access, evaluate, process, and synthesize information from a variety of sources
• Use technology to identify and solve complex problems in real-world contexts

(ETIL Plan, 2006, p. 5)

This skill set involves some media literacy concepts, such as the ability to access and evaluate information from a variety of sources, and the skills to use technology as a communication tool. It also incorporates some information literacy concepts underscored in the CILS, including the ethical use of information and the ability to generate information. The ability to use technology as a tool to communicate information is underscored, as are some evaluation and assessment skills that overlap with media literacy and information literacy approaches. According to the ETIL plan, the integration of information literacy and technology into the curriculum will promote the District’s vision through many key elements. These elements include ‘Learning Community and Achievement,’ ‘Social Responsibility,’ and ‘Technological and Information Literacy.’

Table 4.6 displays the themes that emerged from a thorough evaluation of the ETIL plan for the key terms listed in Table 4.1.

<table>
<thead>
<tr>
<th>Themes that reflect similarities between the ETIL plan, CILS and 12 Basic Principles</th>
<th>The ETIL plan includes the acquisition of information literacy skills in the goals and is based on the CILS, which suggests that some overlapping concepts are included</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

88
Themes that reflect differences between the ETIL plan, CILS and 12 Basic Principles

<table>
<thead>
<tr>
<th>Technology literacy is defined in the ETIL Plan, but information literacy is not</th>
</tr>
</thead>
<tbody>
<tr>
<td>Whereas PLS 12 emphasize the use of media as a tool to foster creativity, critical evaluation, and independent thinking, the ETIL plan highlights the use of technology as a tool</td>
</tr>
<tr>
<td>Technology skills are specifically defined, outlining the skills expected of staff, students and teachers</td>
</tr>
</tbody>
</table>

Many of these themes overlap with concepts emerging from the ILT plan, since both district documents are founded on the CILS. According to the ETIL plan, “technological and information literacies incorporate the use of tools, information, and resources to solve problems, complete tasks and communicate ideas” (p. 4).

**Information literacy and technology literacy**

The Partnership for 21st Century Skills distinguishes media and information literacy skills as fundamental communication skills separate from technology literacy. However, in describing how the goals were outlined, the district lumps the key terms, *technology literacy* and *information literacy* together:

Technological and information literacies incorporate the use of tools, information, and resources to solve problems, complete tasks, and communicate ideas. Students and staff must be able to exhibit and demonstrate essential skills from established and evolving technologies, which will be integrated into content curriculum and teaching…It is the District’s vision to enhance the application of technology and information literacy skills for its staff and students…Regardless of economic status, all students and staff will be afforded the opportunity to access and incorporate information resources. Mastery of these lifelong learning skills will lead to increased productivity, adaptability, creativity, and achievement (ETIL plan, 2006, p. 3).
Similar to Denver’s ILT plan, technology literacy is defined in the ETIL Plan, but information literacy is not. According to the ETIL (2006) plan, “a person who is technology literate has the ability to select and responsibly use the appropriate technology to communicate, solve problems; to access, manage, integrate, evaluate, and create information to improve learning in all subject areas; and to acquire lifelong knowledge and skills in the 21st century” (p. 6). Although information literacy is not distinctly defined, the ETIL plan lists the nine Colorado Information Literacy Standards and also lists the 21st century skills outlined by the Partnership, many of which overlap with media literacy approaches. The Partnership for 21st Century Skills explicitly defines information and media literacy, and the ETIL plan lists these skills in the ETIL goals. The word technology is repeated many times throughout this section, and computers are referred to repeatedly in the portion titled: “Increase/Improve Technology Access for Teachers and Students.” No media literacy or information literacy terms are used in this portion of the document, and the focus is strictly on distributing technology resources appropriately throughout the district. Aside from the Internet, no specific technology resources used by teachers in the classroom are identified.

**Use of media vs. use of technology tools**

The ability to use technology tools to communicate effectively is also a theme that overlaps between the ILT and ETIL plans. Although media is not addressed within the district plans or state information literacy standards as an information tool, the technology tools stressed in the district documents include certain types of media. For
example, it could be inferred that the technology tools that allow students to access a variety of information could include media sources. In contrast, media literacy principles explicitly identify the importance of getting information from a variety of *media*. The basic principles directly identify *media* as a communication tool that students can use to communicate ideas, whereas both the ILT and ETIL plans refer to *using technology* but do not reference media. Within the ILT plan, using tools and information skills is emphasized, but neither the tools nor the skills are ever explicitly defined. The ILT plan does not reiterate the CILS anywhere in the document, so although the term *information skills* is repeated more than thirty times, information literacy skills such as the ability to access, evaluate and create information are absent.

Media Literacy approaches suggest using media as a tool to advance critical thinking skills by having students access and evaluate multiple sources, so to the extent that media is accessed via technology, the 12 Basic Principles require the use of technology as a tool to access media information. Unlike the district’s plans, the 12 Basic Principles don’t allude to *tools*, but rather list specific technology useful in implementing media literacy approaches, such as the Internet, Web pages, and other media sources. Media literacy approaches argue that using technology tools is a skills-based approach, whereas asking key questions is an inquiry-based approach.

*Technology skills*

The ETIL plan outlines specific technology skills expected of all staff members, administrators and students in Eagle County schools, which is an important distinction
between the ETIL and ILT plans. Denver’s district plan lumps technology and
information skills together and refers to them as tools and information skills throughout,
and although educator buy-in is listed as an inhibiting factor, the ILT plan does not
outline the specific skills expected of teachers. In contrast, the ETIL plan lists specific
technology skills such as the ability to use a word processing program, email,
hyperlinked, multi-media presentations and using spreadsheets to organize data. These
skills are categorized by staff, students, and teachers. Some of the basic skills are vague
in nature such as using technology to increase student achievement, while others are more
specific applications of skills, like using hyper-linked, multimedia presentation to
communicate and integrating images, sounds, and video to enhance the messages.

After including detailed and explicit definitions of the 21st century skills expected
of staff and students, the ETIL plan begins to describe professional development
programs focused on effective strategies in integrating technology into teaching practices.
However, the ‘Basic Skills for Students’ portion of the document is distinct from the
preceding skill sets, which use a bulleted format to list the basic skill requirements for
different District staff. According to the document, “the integration of Information
Literacy into instruction occurs on a seamless basis throughout the K-12 instructional
program,” and no specific skill sets are documented (p. 16). The remainder of the ETIL
plan elaborates on the technological infrastructure of the District and the specific levels
of support and maintenance of technology resources.
Many of the skills outlined in the ETIL plan have been pulled word-for-word from the CILS, however the document does offer some specific strategies for staff development in technology integration. These include enhancing professional development through cluster group and teacher collaboration, coaching and evaluative feedback with help from technology teachers. The district supports teacher collaboration and reports using ‘cluster groups’ led by mentor teachers to increase staff development in integrating technology practices. Within the professional development section of the plan, no information skills are included but the word *technology* is used repeatedly. According to the ETIL (2006) plan, “integration and demonstration is only limited by the ability of the instructor in a given content area. Continual staff development will create new applications and opportunities for students in the ever-changing technology market” (p. 7). The results of the ETIL (2006) plan needs assessment “indicate that teachers are not fully aware of the standards and expectations for technology. Until this year these have not been clearly outlined and communicated to staff” (p. 3). Administrators recognized the absence of 21st century skills in the districts’ previous technology plan, and acknowledge that until the development of the ETIL plan, the standards and expectations for technology were not clearly outlined or communicated to teachers. The district recognizes the absence of these skills as a flaw in their plan and the document indicates that future planning will address these requirements in a way that can be easily evaluated.

I have used previous archival data to argue that information literacy skills as described in the CILS share overlapping concepts with media literacy. Some skills
outlined by the Partnership for 21st Century Skills also overlap with the principles of the CILS, such as self-direction, demonstrating ethical behavior, and respecting diverse perspectives. The ETIL plan recognizes that curriculum and staff development workshops did not specifically address the requirements of 21st century skills or information literacy and acknowledges the absence of information literacy and 21st century skills as a flaw in the district plan. In many ways, the ETIL plan serves as a launching pad to introduce and communicate the standards and expectations for information literacy skills and technology use to District staff. Although a large portion of the document is dedicated to describing the technological infrastructure, resources and support within the District, the integration of information literacy into the curriculum will promote the District’s vision. According to the District, these skills will increase student achievement, improve the learning community, and promote social responsibility.

Discussion

The purpose of this chapter was to analyze archival data and make interpretations based on the frequency and context of key terms. I will use the next section to discuss what the themes and key concepts pulled from the archival data mean to this study. The purpose of evaluating the CILS and 12 Basic Principles proposed by Project Look Sharp was to determine how information literacy and media literacy concepts overlap, and where they are distinct. The specificity of practices is a major distinction between the information and media literacy practices outlined. The 12 Basic Principles (Scheibe &
Rogow, 2004) are designed to be used with media, which is a specific type of information source. However, the principles “define media very broadly to include books, newspapers, magazines, radio, television, movies, videos, billboards, recorded music, video games, and the Internet” (p. 1). Virtually any information source used in the classroom could be classified as media under this definition, however the information literacy standards do not define any information sources and the term media is used sparingly.

The 12 Basic Principles are not meant to define the media literate student, but rather are designed as a resource for teachers interested in integrating media literacy approaches. The CILS were developed to define an information literate student and are a framework of the Eagle County and Denver district plans. Media is not specifically classified as an information source in the CILS, and the term may have been intentionally avoided by administrators. The questioning of media sources might be viewed as subversive by some parents or administrators, while others might be deeply critical of controversial content and media credibility.

On the other hand, information is a term that everyone can agree is important to promoting student knowledge and achievement. The CILS fail to specifically categorize media content as an information source, and the standards would benefit from the identification of media as a particular type of information, created with specific intentions that target certain audiences for an identifiable purpose. By specifically identifying media as an information source, the CILS could support informed media use by creating an
awareness of the intentions of media messages. The frequency and context of the term *media* in the CILS and PLS 12 indicates a theme between information literacy and media literacy approaches. The specificity of practices and definitions within the two documents is a major distinction between them. Whereas the CILS are focused on the ability to access, evaluate, and efficiently use information, no information sources are identified. In contrast, media literacy scholars would suggest a more extensive use of media across the curricula, and Scheibe and Rogow (2004) define media generally to include many information sources that are presently used in the classroom. Therefore, while teachers and administrators might think of *media* as only including television or other news-related information sources, media literacy scholars view media as existing in many different formats.

Recognizing media as a specific kind of information source could foster information literacy skills defined by the CILS. Media literacy scholars argue that the informed use and processing of mediated information is essential to the foundations of democracy. Thoman and Jolls (2004) suggest that media literacy can be a form of empowerment by teaching students how to take apart the layers of messages. The scholars also contend that the influence of media is central to our democratic process because media often shapes perceptions, beliefs, and attitudes (p. 9). CILS 7 suggests that the information literate student recognizes the importance of information to a democratic society. By specifically recognizing the role of media as an information provider,
students could gain an understanding of the rules and regulations governing media industries in our democratic society.

Critical evaluation of information or media is another overlapping theme between media literacy and information literacy approaches. While the terms critical and evaluate are fundamental to media literacy and information literacy efforts, the media literacy principles suggest specific ways to teach critical evaluation of media messages. In contrast, the information literacy standards emphasize the importance of identifying inaccurate or false information but rely on logic to determine the validity of information. The reliance on logic to evaluate information sources speaks to media literacy scholar James Potter’s theory about the development of knowledge structures as the foundation of a media literate perspective (Potter, 2001). Potter argued that in order to understand media, you must have many perspectives, which are developed from good knowledge structures. He defines knowledge structures as consciously built authoritative maps that incorporate many different perspectives and provide context to help determine meaning, and organize information in terms of importance, prioritizing what is retained (p. 76). The knowledge structures play into how media literate people are on any of Potter’s (2001) four dimensions: Cognitive, emotional, moral and aesthetic. There is a continuum for each dimension, and how media literate you are is based on where you fall on each of those dimensions as well as considering all of the dimensions together.

By relying on logic to evaluate information sources, only the cognitive dimension of media literacy is being addressed, thus missing the moral, emotional, and aesthetic
components. According to Potter (2001), lacking the other domains causes students to have weaker perspectives. For example, students with only a cognitive understanding of information are highly analytical, and don’t consider the emotional or moral dimensions of how media content makes them feel or influences their values. Potter believes media literacy must be measured on a continuum rather than dichotomously because there are different degrees of media literacy based on the strength of knowledge structures. These knowledge structures are developed based on message interpretation skills, and Potter argues that higher degrees of media literacy give audiences more control over their interpretations. According to Potter, a wider range of experiences in the world and exposure to media messages gives way to a broader foundation for analyzing information. He believes that individuals with lower degrees of media literacy don’t realize that messages are interpretations of journalists and other media producers. As a result, Potter (2001) contends that people with lower degrees of media literacy are forced to accept the dominant themes and values presented by the media (p. 11).

The CILS could more effectively recognize information literacy on a continuum similar to Potter’s instead of relying on logic to develop the knowledge structures used to competently evaluate information. This would involve explicitly defining and recognizing the dimensions of information literacy on a scale, such that students could be assessed across the skill-set throughout middle and high school. According to Potter, media literacy requires participation by students as consumers of messages, and empowers them with the skills to ask the right questions about information sources
(Potter, 2001). This skill can allow individuals to filter messages as opposed to absorbing them. Many media literacy approaches suggest that students of all ages be taught to apply key questions to a wide variety of messages. According to the Center of Media Literacy, habitually asking questions to evaluate information and messages promotes higher order thinking by focusing on the learning process and not the content (Thoman, 2003). In many ways, this type of thinking is counterintuitive because it suggests that by focusing on critically evaluating media content, teachers stress inquiry-based learning skills and not media subject matter. Media literacy approaches propose that the routine application of key questions encourages independent thinking, helping students control the interpretation of what they see or hear rather than letting the interpretation control them (p. 21).

Incorporating some basic principles of media literacy into the information literacy components of the district plans could temper the emphasis on technology-based skills. Whereas I found the CILS to emphasize the inquiry process in accessing and using information, the themes and concepts identified within Denver’s ILT plan show that the plan is focused on technology: the ability to use it as a tool to access information. This means that less emphasis is paid to the information literacy standards defined in the CILS, and although efficient access of information is listed in the CILS, the ability to use technology to locate information is a tools-based approach. Media literacy scholars would argue that focusing on accessing information rather than critically evaluating messages will limit the control students have over their interpretations of that information.
Although students may have the skills to use technology tools to find information, their analysis of that information will be restricted by their limited knowledge structures in the other dimensions.

The absence of key terms representative of information literacy skills such as evaluating information critically and using information creatively is evidence that the ILT plan is technology-centered. Furthermore, although I have argued that concepts of media literacy and information literacy overlap, the ILT plan does not address common skills such as the critical evaluation of information content. For example, the CILS emphasize the importance of independent learning and the accurate, creative use of information as components of information literacy. However, the ILT plan never explicitly defines the skills and habits thought to support student achievement, nor do they define information literacy or information skills. If they were to define these concepts, teachers and students could more easily distinguish between information literacy and technology literacy skills. Media literacy scholars would argue that outlining the skills sets could make students more informed users of media by moving beyond the content. Including the CILS within the ILT plan could encourage an active application of information skills, fostering multiple interpretations and encouraging critical evaluation.

The terms information and technology are noteworthy, as they both appear in the title of the ILT and ETIL plans. Whether one bears more importance than the other can be argued; can you have information without technology or technology without information? By introducing information literacy as a concept distinct from technology,
the ILT plan is recognizing important concepts, habits and skills outside of technology use. However, the plan explicitly defines technology literacy, one component identified in the title, but never defines information literacy. Defining information literacy, simply by referencing the CILS, would highlight the importance of non-technical, independent learning skills to the ILT plan. Neither the CILS nor the ILT plan stresses any specific technical skills, such the ability to use computers to research and access information. The district plans both call for ‘inquiry driven learning experiences’ without specifically defining the skills and habits that support student achievement and the pursuit of 21st century learning. The media literacy principles (Scheibe & Rogow, 2004) suggest that encouraging students to think critically about information promotes inquiry-driven learning experiences, allowing students to go beyond the content of what’s presented and to identify and comment on incidental aspects of a media message (p. 2). This is an important extension of traditional literacy skills, allowing students to understand the aspects of a message beneath the visual ‘text.’ Furthermore, the broadening of literacy skills to include media messages reflects the increasingly complex nature of media, which has become a fabric of our culture.

Both districts use the Partnership for 21st Century Learning Skills and CILS as a foundation for their plans, and many of the concepts important to 21st century learning overlap with media and information literacy skills. However, only Eagle County’s district plan includes an overview of the skills sets featured by the CILS and Partnership for 21st Century Skills. By reiterating the specific skills expected of students by the Partnership
for 21st Century Learning and the CILS, the ETIL plan distinguishes between the information literacy and education technology concepts highlighted in the document title. The absence of these key terms and concepts indicates that the ILT plan prioritizes the technological infrastructure and acquisition of technology skills over information literacy concepts.

The implications of this emphasis are that although students might have the resources and technology skills to access information, they might not necessarily be able to think for themselves. Media literacy scholars would argue that students must have the skills to critically evaluate, analyze, and access information outside of the classroom. It is undeniable that students interact with media messages outside of the school setting. By providing them with the skills to evaluate and interpret information in addition to the technological abilities to access information, teachers promote competency. This is accomplished by enabling students to compare forms of communication, which in turn encourages them to critically evaluate non-mediated information. Students with higher degrees of media literacy are better prepared and more aware of the credibility of all types of information. By developing an awareness of their exposure to media content, students are more capable of controlling their interpretations of the messages they encounter. Hobbs and Frost (2003) contend that media literacy instruction integrated into language arts curriculum can affect the development of message comprehension, writing, and critical thinking skills and can “be effective in meeting traditional academic goals” (p. 350). According to their statement, students who received media literacy instruction
were more skillful than their control-group counterparts at identifying message
creation techniques, recognizing missing information, and distinguishing the authors
purpose and target audience. Media literacy scholars argue that these skills will continue
to develop over the course of a lifetime of media use.

The CILS place strong emphasis on the importance of independent learning,
which is specifically addressed in three of the nine information literacy standards. Media
literacy scholars argue that by promoting critical thinking and evaluation habitually,
students become independent in their learning and assessment of information sources.
This allows them greater control over all of their interpretations; in the classroom and
beyond, with both mediated and non-mediated information. Potter suggests that media
literacy approaches make students better information seekers by providing them with a
foundation to discriminate among their media choices. Understanding the depth and
layers of mediated messages empowers students with skills to discern the credibility of
information they encounter outside the classroom. This promotes both independent
learning and excellence in information seeking. For this reason, media literacy
approaches suggested by the 12 Basic Principles could enhance the independent learning
component of the CILS.

The ETIL plan includes detailed and explicit definitions of the technology skills
expected of staff, teachers and administrators, but the skills expected of students are not
specifically outlined. Eagle County’s plan does not list any information skills expected of
staff, and a large portion of the document is dedicated to describing the technological
infrastructure, resources and support within Eagle County. The diversity of need and resources available in Denver Public Schools prevents the district from generalizing a list of skills similar to that of the ETIL plan that signify educator proficiency. Although the ILT plan suggests ongoing professional development, the district lacks a standardized program of ILT certification. While the document highlights the need for professional learning and instructional technology workgroups to promote 21st century learning, it contends that measuring student achievement in the area is difficult because the district’s essential focus is on achievement as measured by state standards (CSAP). As aforementioned, there is no state assessment tool for information and technology skills. Many educators are already overwhelmed in having to prepare students to pass statewide standards in particular subjects and may feel they don’t have time to teach supplemental technology skills in conjunction with their traditional curriculum.

Some media literacy scholars talk about the importance of training teachers to develop media literacy perspectives in their curriculum. They suggest that teachers shift from the approach of telling students what the message is to asking them to determine what they think the message is. In order to be successful in this approach, teachers must convey to students that their interpretations are not the only correct view, and students must understand that media messages often contain multiple meanings. Deconstructing the different layers of media messages can be promoted through the application of key questions. The Center for Media Literacy’s MediaLit Kit (Thoman & Jolls, 2004) recommends applying the Five Key Questions listed in Table 2.1 routinely as a way of
fostering habitual analysis of media messages. As students develop greater knowledge structures and experiences, these questions can be expanded to empower students with a critical awareness of how and why information messages are produced.

The ability to use technology as a tool to communicate information is underscored in the ILT and ETIL plans. The ILT plan seems to take a tool-specific approach, and the district plan indicates that development workgroups are ‘revisiting’ the ILT standards in an effort to promote a habits-of-mind and lifelong learning approach in developing 21st century skills. DPS recognizes the absence of inquiry-based learning approaches and is re-examining the ILT plan, indicating that the technology, skills-based approach is falling short of district needs. Similarly, Eagle County recognizes the absence of 21st century skills as a flaw in the district plan, and promotes teacher collaboration as an effective way to integrate information and technology-based learning practices into the curriculum.

According to the ETIL plan (2006), “collaboration occurs best in an environment where the administration, library, and technical professionals support and encourage cross-program activities” (p. 12). Although this statement does not include any media literacy key terms, the concept of trans-disciplinary integration of media literacy practices was addressed in the Literature Review. Mary-Lou Galician introduced the 2004 special edition of American Behavioral Scientist dedicated to the subject of media literacy education by writing that discussions of media literacy must be “transdisciplinary—cutting across artificial disciplinary boundaries, merging the best approaches and knowledge bases of all fields, and sharing rather than competing to produce the best
The Collaborative Professional Development Strategies Indicated by the ETIL Plan Overlap with Galician’s Idea of Transdisciplinary Knowledge. In order to integrate information literacy skills into any curriculum, teachers, librarians, media specialists, tech support staff, and administrators must work together to find the most effective and efficient methods.

The absence of discussion as a key concept emerged as a theme in both district documents and the CILS. Discussion of content can build critical thinking skills by allowing students to compare their interpretations of messages and build a tolerance for understanding and respecting different perspectives. Basic Principle 1 suggests that teachers discuss and evaluate information from both textbooks and popular media as a way to encourage critical thinking. Discussion and comparison of information sources encourages students to independently seek information sources, promoting CILS 4-6. Another principle suggests that discussion of controversial content can be a way to understand different points of view expressed in media messages and could help students evaluate the values and moral dimensions of information. Discussion of information content and media industries requires minimal technological proficiency, but can foster self-directed learning and collaboration amongst students, promoting the development of important information literacy skills.

The Center for Media Literacy contends that the inquiry process can illuminate bias, challenge stereotypes, and uncover the motivations of information producers and creators (Thoman & Jolls, 2004). Media literacy perspectives emphasize that in order for
students to access media effectively, they must be taught to practice critical thinking and analysis skills. Discussion allows students to understand the differences between their own critical evaluation and that of their classmates and teacher. Providing students with a safe, neutral and controlled environment to discuss media content, information sources, or conflicting values and morals is not addressed in the CILS or 12 Basic Principles. This is an important theme that is neglected in all four documents reviewed as archival data. Although the 12 Basic Principles underscore the importance of media and information discussion, the sanctity of the classroom environment as place for such discussion is never addressed. Through the literature reviewed, I found that many media literacy initiatives stress an inquiry-based learning process that encourages students of all ages to apply key questions to a wide variety of messages. The questions can serve as a foundation for information seeking and cultivating student curiosity and can promote information literacy skills. By teaching students to habitually ask these questions in evaluating information content, media literacy perspectives argue that educators promote higher order thinking by focusing on the learning process and not the content. Integrating the key questions into the district plans will promote information literacy skills by encouraging students to develop habitual practices as active, life-long learners.
Chapter Five: Analysis and Discussion of Survey Results

Survey Results

The following results are reported for the overall sample as well as for DPS and Eagle County. Perceptions of media use and discussion, in addition to practices using and discussing media, were the variables of interest in this study. A one-way ANOVA was conducted to survey any significant difference for the frequency of media use among teachers with more years of service. The results appear in Table 5.1.

Table 5.1: Measuring media use with years of service as a variable

<table>
<thead>
<tr>
<th>Number of years teaching</th>
<th>Less than 1 year (n = 9)</th>
<th>1-2 years (n = 17)</th>
<th>More than 2 but less than 5 (n = 30)</th>
<th>More than 5 but less than 10 (n = 56)</th>
<th>More than 10 but less than 15 (n = 42)</th>
<th>More than 15 (n = 85)</th>
</tr>
</thead>
<tbody>
<tr>
<td>How often do you use media? Mean (SD)</td>
<td>3.00 (0.76)</td>
<td>3.59 (0.94)</td>
<td>3.21 (1.08)</td>
<td>3.61 (0.78)</td>
<td>3.54 (1.09)</td>
<td>3.49 (1.04)</td>
</tr>
<tr>
<td>F (sig)</td>
<td>1.01 (0.42)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*As measured on a scale of 1-5, with 1 indicating never and 5 indicating everyday.*
The results in Table 5.1 show the mean media use scores based on years of experience teaching. These results suggest that teachers with less than one year of experience use media less often than more experienced teachers, and teachers with more than five but less than ten years of service reported the highest media use scores. Scores for all six categories suggest that teachers use media sometimes. The analysis of variance was conducted in order to understand the relationship between overall media use and number of years teaching, and no significant difference in the overall F test was found, thus no contrast tests were conducted between groups. These results indicate that it is appropriate to proceed with the tests for the research questions based on all teachers, regardless of years of service. Consequently, the results indicated in the tables below offer the overall findings in addition to grouping the teachers by district, but not by years of service. Independent t-tests were used to compare the mean scores of the two school districts, and those scores are displayed below in addition to the standard deviation and overall descriptive results from both groups. Repeated measures tests were also performed on the data in order to compare the mean scores reported in the scaled questions. These results are indicated by the superscripts next to the mean score, which suggest the scores are not significantly different. The survey results are organized by research question and concept, with quantitative analysis displayed in the tables below, and qualitative responses from open-ended survey questions appearing in the text.

**Research Question 1a. What are Colorado teachers’ perceptions about media use and discussion in the classroom?**
### Table 5.2:
Mean scores for concepts measuring perceptions of media use

<table>
<thead>
<tr>
<th>Question Number</th>
<th>Overall Results Mean (SD)</th>
<th>DPS Mean (SD)</th>
<th>Eagle County Mean (SD)</th>
<th>t-test t (sig)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q14. Media has place in classroom</td>
<td>4.26a (1.03)</td>
<td>4.28 (1.03)</td>
<td>4.21 (1.15)</td>
<td>0.38 (0.79)</td>
</tr>
<tr>
<td>Q15. Media can encourage participation</td>
<td>4.30a (1.01)</td>
<td>4.32 (1.01)</td>
<td>4.23 (1.17)</td>
<td>0.48 (-0.40)</td>
</tr>
<tr>
<td>Q16. Media use distracts student</td>
<td>1.83b (0.94)</td>
<td>1.79 (0.98)</td>
<td>1.86 (0.83)</td>
<td>-0.42 (0.22)</td>
</tr>
<tr>
<td>Q17. Difficult to use media negative parent</td>
<td>1.84b (0.87)</td>
<td>1.84 (0.88)</td>
<td>1.77 (0.87)</td>
<td>0.52 (0.60)</td>
</tr>
<tr>
<td>Q42. Use media recognize emotions</td>
<td>3.97c (0.79)</td>
<td>3.95 (0.77)</td>
<td>4.10 (0.80)</td>
<td>-1.08 (0.32)</td>
</tr>
<tr>
<td>Q43. Use media creative techniques does not expand lit</td>
<td>2.04d (0.89)</td>
<td>2.00 (0.85)</td>
<td>2.15 (1.03)</td>
<td>-0.97 (0.07)</td>
</tr>
<tr>
<td>Q44. Use media recognize moral themes/values</td>
<td>3.95c (0.78)</td>
<td>3.95 (0.80)</td>
<td>4.05 (0.55)</td>
<td>-0.73 (0.07)</td>
</tr>
<tr>
<td>Q45. Use media learn facts does not expand lit</td>
<td>2.05d (0.85)</td>
<td>2.03 (0.85)</td>
<td>2.05 (0.87)</td>
<td>-0.12 (0.48)</td>
</tr>
</tbody>
</table>

*As measured on a scale of 1-5, with 5 indicating strongly agree.
Overall mean scores without a superscript in common are significantly different at p<.05

Several survey questions measured perceptions of media use, beginning with general statements about the topic, and progressing to more specific statements about how Potter’s dimensions of media literacy do or do not expand student literacy.

Independent t-tests showed no significant differences in perceptions of media use
between the Denver and Eagle County teachers, and media use was perceived as positive by the overall sample. Teachers reported stronger agreement with the more general statements about media encouraging participation and having a place in the classroom. Both groups expressed disagreement with statements about media use distracting students and instigating negative feedback from parents. The more specific statements about how Potter’s dimensions of media literacy do or do not expand student literacy elicited less agreement from the overall sample. The results in Table 5.2 yield no significant differences between the groups in their perceptions of media use as measured by the survey questions. However, Eagle County teachers responded slightly more positively to statements about using media to recognize moral themes and values as expanding student literacy. Denver teachers indicated slightly more disagreement with the statement about the recognition of different creative techniques used in message production not expanding student literacy. The results from the overall sample indicate that media use is perceived positively by the teachers sampled.

Perceptions of media use were also measured by several ranking questions. These questions asked participants to rank the reasons they use or avoid using media in their classrooms. This data is listed in Tables 5.3 and 5.4.

Table 5.3:
Concepts measuring perceptions of media use: Ranking reasons for use

<table>
<thead>
<tr>
<th>Q6. Rank the reasons you use media</th>
<th>% who said it’s a reason for use</th>
<th>Overall Results Mean (SD)</th>
<th>DPS Mean (SD)</th>
<th>Eagle County Mean (SD)</th>
<th>t-test t (sig)</th>
</tr>
</thead>
<tbody>
<tr>
<td>To teach different perspectives</td>
<td>91%</td>
<td>3.39 (1.82)</td>
<td>3.26 (1.72)</td>
<td>3.81 (1.96)</td>
<td>-1.49 (0.10)</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>Concept</th>
<th>% who said it's a reason for avoiding use</th>
<th>Overall Results Mean (SD)</th>
<th>DPS Mean (SD)</th>
<th>Eagle County Mean (SD)</th>
<th>t-test (sig)</th>
</tr>
</thead>
<tbody>
<tr>
<td>To stimulate interest</td>
<td>95%</td>
<td>2.58a (1.61)</td>
<td>2.53 (1.58)</td>
<td>2.86 (1.75)</td>
<td>-0.98 (0.57)</td>
</tr>
<tr>
<td>It applies to my subject matter</td>
<td>97%</td>
<td>2.63a (1.75)</td>
<td>2.66 (1.75)</td>
<td>2.34 (1.50)</td>
<td>0.91 (0.29)</td>
</tr>
<tr>
<td>It encourages participation</td>
<td>96%</td>
<td>2.87a (1.49)</td>
<td>2.84 (1.43)</td>
<td>2.83 (1.52)</td>
<td>0.01 (0.90)</td>
</tr>
<tr>
<td>Media resources are available</td>
<td>88%</td>
<td>4.50 (1.84)</td>
<td>4.39 (1.92)</td>
<td>4.38 (1.55)</td>
<td>0.03 (0.22)</td>
</tr>
<tr>
<td>School encourages use</td>
<td>88%</td>
<td>5.06 (1.98)</td>
<td>5.23 (2.00)</td>
<td>4.23 (1.80)</td>
<td>2.67 (0.21)</td>
</tr>
</tbody>
</table>

* As ranked on a scale of 1-8, with 1 indicating the main reason these teachers use media in the classroom.

Overall mean scores without a superscript in common are significantly different at p<.05

Table 5.4: Concepts measuring perceptions of media use: Ranking reasons for avoiding use

* As ranked on a scale of 1-8, with 1 indicating the main reason these teachers avoid using media.

Overall mean scores without a superscript in common are significantly different at p<.05
Independent t-tests were performed, and no significant differences were found between the two groups in their ranking of reasons for using media, shown in Table 5.3. The overall results indicated that teachers are most likely to use media to stimulate interest in new topics, when it applies to the subject matter, and to encourage participation. The availability of resources and encouragement of schools were not prioritized in the ranking of reasons for using media. This suggests that teachers see media as a teaching tool that can be used to stimulate interest and encourage participation. It also suggests that teachers are largely self-motivated in their reasons for using media, as opposed to being encouraged by their school or the availability of resources. In Eagle County, teachers reported using media more because it applies to the subject matter than for simulating interest or encouraging participation. In DPS, teachers reported using media to stimulate interest in a new topic as a top reason for media use, ranking it above both the applicability of subject matter and encouraging participation.

Results in Table 5.4 indicate scores for the question set ranking reasons for avoiding media use. Overall results indicated that teachers avoid media use most often because media resources are not available to them; however Eagle County teachers reported they avoid media most often because content is inappropriate. This represented a significant difference between the two groups (p<.06) for perceiving media content as inappropriate. Denver teachers ranked lack of resources, lack of application to subject matter, and school discouraging media use as the top three reasons for avoiding media use. In contrast, Eagle County teachers ranked inappropriate content as the first reason
for avoiding media use, followed by a lack of resources and lack of application to the subject matter. Results of independent t-tests yielded significant differences between DPS and Eagle County teachers; with the former indicating they were more likely to avoid media use because of the unavailability of resources and the later reporting they were more likely to avoid media use because of inappropriate content.

The ranking questions used to measure perceptions of media use allowed participants to write in additional answers for using or avoiding media use. Some of these qualitative responses support the quantitative data, while others negate it. I grouped the evaluation of the open-ended responses by school district, and I focused on qualitative data that corresponded with pre-existing themes within this study. One Eagle County teacher responded with a reason for avoiding media use in the classroom, saying “I have relatively little access to [sic] the cable television or computers in the classroom. If the classroom had more access to computers in the class rather than 30 minute increments in the library, the usage of media would be greatly increased.” This response confirms what the quantitative data reported in terms of the lack of resources inhibiting media use. Other Eagle County teachers responded “it is hard to keep up” and “often requires too much planning and time.” Time constraints were addressed in some survey questions, and they continue to emerge as a theme inhibiting media use in both districts.

In addition to reasons against using media in the classroom, Eagle County teachers also responded to the open-ended questions about the benefits of using media in the classroom. One teacher wrote that “media allows my subject matter to come to life—GoogleEarth allows us to ‘visit’ so many places—I have taught for 30+ years and I can’t
tell you how much modern media enriches my curriculum.” The qualitative response supports the quantitative results, which indicated that Eagle County teachers use media most often when it applies to their subject matter. The detail of this response also implies that this participant uses media to stimulate interest, encourage participation, and teach different perspectives. Another Eagle County teacher responded “I think young people learn better with media…it’s how they’re programmed (vs. pre-computer generations).” Several teachers confused media with technology in the write-in questions throughout the survey. For example, when asked why they avoid using media, one teacher responded “I am very awkward as far as using technology.” This response supports the overall quantitative data suggesting stimulating interest is a top-ranked reason for using media.

The larger number of DPS teachers who completed the survey yielded more qualitative responses. DPS teacher’s reasons for using media varied, indicating that practices using media differ significantly on the school-level in Denver, perhaps because the district is so large. For example, a DPS teacher reported “our school discourages the use of media in classrooms. Videos and DVDs are banned from our classrooms.” The results in Table 5.4 indicate that Denver teachers ranked school discouragement of media use as the third reason for avoiding media use. Other Denver teachers denoted the lack of resources as a reason for avoiding media use, supporting the quantitative data. One suggested “it is not evident that any modern media or technology is available in this school.” Another wrote, “I would love to use media/technology in my classroom more often. However, it is not readily available to me. It would take a lot of time to borrow media/technology only to have to return it after the class. If it was permanently in my
classroom, I would use it frequently.” In addition to time constraints, “fidelity to the curriculum,” “maintenance and application problems,” “theft and vandalism” were all listed as deterrents to media use by DPS respondents.

Although the open-ended questions asked participants to rank their reasons for using or avoiding media, many teachers listed technology-based reasons for their aversion to media use. For example, DPS teachers listed “unfamiliarity with equipment,” “lack of training” and “tech use is limited only by my resources,” as reasons for avoiding media use. These qualitative responses support the quantitative survey data in that the availability of resources is a main inhibiting factor for Denver teachers. Finally, two DPS teachers listed “controversial: fear of disapproval if not mainstream” and “it is difficult to find appropriate media” as factors inhibiting their media use. This supports the quantitative data that suggests that appropriateness of media content and negative backlash from parents or school administrators can be inhibiting factors.

The qualitative data I found most valuable from the open-ended responses ranking reasons for using media in the classroom were those that specifically identified how teachers align media with their particular subject. For example, one DPS teacher wrote “I use it to expose my language students to other cultures and other dialects… to provide opportunities to listen and discuss.” This supports the survey results, which indicate that DPS teachers rank teaching different perspectives among their top four reasons for using media. Another DPS teacher responded: “I teach mostly earth science and it is difficult to show the scope of geological time; using media allows me to be more efficient. For example, I don’t want to spend an entire month looking at the phases of the moon and
going online I can cover a month of phases in one class period.” This response suggests
that the media content used applies to the subject matter, but also offers the instructor a
more efficient way to teach the material. Finally, DPS teachers responded that they use
media because it “motivates underachievers and low readers, reaches out to visual and
hands-on learners” and visuals make “it easier for English language learners.” These
responses indicate that these teachers use media to encourage participation and stimulate
interest, supporting the overall results.

Measuring DPS and Eagle County teachers’ perceptions of media discussion

Table 5.5: Concepts measuring teachers’ perceptions of media discussion

<table>
<thead>
<tr>
<th>Question Number</th>
<th>Overall Results Mean (SD)</th>
<th>DPS Mean (SD)</th>
<th>Eagle County Mean (SD)</th>
<th>t-test t (sig)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q26. Discussion of media distracts</td>
<td>1.82 (0.84)</td>
<td>1.82 (0.87)</td>
<td>1.81 (0.80)</td>
<td>.05 (0.52)</td>
</tr>
<tr>
<td>Q28. Difficult to discuss media, negative parents</td>
<td>1.82 (0.79)</td>
<td>1.82 (0.78)</td>
<td>1.74 (0.69)</td>
<td>.60 (0.31)</td>
</tr>
<tr>
<td>Q29. Difficult to discuss media, negative school admin</td>
<td>1.94 (0.94)</td>
<td>1.98 (0.97)</td>
<td>1.74 (0.73)</td>
<td>1.49 (0.67)</td>
</tr>
<tr>
<td>Q30. Controversial content instigates controversial discussions</td>
<td>2.21 (0.92)</td>
<td>2.19 (0.92)</td>
<td>2.26 (0.88)</td>
<td>-0.45 (0.90)</td>
</tr>
<tr>
<td>Q47. Discuss how media ignite emotions does not expand literacy</td>
<td>2.03 (0.87)</td>
<td>2.06 (0.88)</td>
<td>1.92 (0.86)</td>
<td>0.88 (0.71)</td>
</tr>
<tr>
<td>Q48. Discuss how media help learn</td>
<td>3.97 (0.76)</td>
<td>3.94 (0.76)</td>
<td>4.10 (0.71)</td>
<td>-1.25 (0.74)</td>
</tr>
</tbody>
</table>
Q49. Discuss how media uses creative techniques.

Q50. Discuss how media shows morals does not expand lit

Table 5.5 includes quantitative data for survey questions measuring teachers’ perceptions of media discussion in the classroom. Overall results indicate that participants disagree with statements about media discussion distracting students and triggering negative feedback from parents or school administrators. Respondents reported greater disagreement with these more general statements about media discussion. However, the overall results also indicate disagreement with more specific negative statements about the concept of media literacy dimensions expanding student literacy and agreement with the positive statements about this concept. Results did not indicate any significant differences between the groups in their perceptions of media discussion as measured by negative statements; however, results yielded a significant difference between the groups regarding the recognition of different creative techniques as expanding student literacy through discussion. Denver teachers reported significantly stronger agreement with statements about how discussion of media content can expand student literacy by helping students recognize different creative techniques used in message production. Eagle County teachers reported greater agreement with statements

\[\begin{array}{cccc}
\text{Q49} & 4.05^b (0.71) & 4.10 (0.63) & 3.82 (0.96) & 1.73 (0.01) \\
\text{Q50} & 2.07^a (0.87) & 2.06 (0.85) & 2.00 (0.85) & 0.44 (0.76) \\
\end{array}\]

*As measured on a scale of 1-5, with 5 indicating strongly agree. Overall mean scores without a superscript in common are significantly different at p<.05
about discussion of media content expanding student literacy cognitively through remembering facts or definitions. The tables below report the ranking questions that measured perceptions of media discussion.

Table 5.6:
Concepts measuring perceptions of media discussion: Ranking reasons for media discussion

<table>
<thead>
<tr>
<th>Q22. Rank the reasons discuss media</th>
<th>% who said it’s a reason for discussion</th>
<th>Overall Results Mean (SD)</th>
<th>DPS Mean (SD)</th>
<th>Eagle County Mean (SD)</th>
<th>t-test t (sig)</th>
</tr>
</thead>
<tbody>
<tr>
<td>To teach different perspectives</td>
<td>91%</td>
<td>3.28a (2.07)</td>
<td>3.20 (1.99)</td>
<td>3.62 (1.97)</td>
<td>-0.93 (0.86)</td>
</tr>
<tr>
<td>To stimulate interest</td>
<td>95%</td>
<td>2.59b (1.50)</td>
<td>2.53 (1.51)</td>
<td>2.68 (1.25)</td>
<td>-0.47 (0.59)</td>
</tr>
<tr>
<td>Applies to subject matter</td>
<td>92%</td>
<td>2.46b (1.66)</td>
<td>2.39 (1.56)</td>
<td>2.50 (2.06)</td>
<td>-0.29 (0.15)</td>
</tr>
<tr>
<td>It encourages participation</td>
<td>94%</td>
<td>3.23a (1.41)</td>
<td>3.17 (1.48)</td>
<td>3.26 (1.02)</td>
<td>-0.31 (0.61)</td>
</tr>
<tr>
<td>Resources are available to me</td>
<td>87%</td>
<td>5.52c (1.66)</td>
<td>5.72 (1.63)</td>
<td>4.82 (1.47)</td>
<td>2.34 (0.61)</td>
</tr>
<tr>
<td>It stimulates discussion</td>
<td>94%</td>
<td>4.09 (1.84)</td>
<td>4.15 (1.82)</td>
<td>3.88 (1.87)</td>
<td>0.67 (0.83)</td>
</tr>
<tr>
<td>My school encourages discussion</td>
<td>91%</td>
<td>4.98c (2.33)</td>
<td>5.07 (2.26)</td>
<td>4.75 (2.54)</td>
<td>-1.06 (0.80)</td>
</tr>
</tbody>
</table>

*As ranked on a scale of 1-9, with 1 indicating the main reason these teachers discuss media content in the classroom. Overall mean scores without a superscript in common are significantly different at p<.05

Table 5.7:
Concepts measuring perceptions of media discussion: Ranking reasons for avoiding media discussion

<table>
<thead>
<tr>
<th>Q24. Rank the reasons avoid discussing media</th>
<th>% who said it’s a reason for avoiding discussion</th>
<th>Overall Results Mean (SD)</th>
<th>DPS Mean (SD)</th>
<th>Eagle County Mean (SD)</th>
<th>t-test t (sig)</th>
</tr>
</thead>
</table>

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Results indicated in Table 5.6 report that teachers most often discuss media content when it applies to the subject matter, followed by stimulating interest and encouraging participation. Discussing media because of school encouragement or available resources were ranked low in the question set measured in Table 5.6. The results show no significant difference between the ways the groups ranked their reasons for discussing media or for avoiding discussion of media, as indicated in Table 5.7.

Participants ranked a lack of resources as the top reason for avoiding discussion of media, followed by the non-applicability to subject matter and time constraints. However, in Eagle County, participants ranked school discouragement of media discussion as the top reason for avoiding discussion, followed by a lack of application to the subject matter and time constraints.
The open-ended, qualitative responses ranking reasons for discussing or avoiding discussion of media content did not yield any insightful responses in Eagle County beyond “students relate to it.” However DPS teachers were more specific in their responses, indicating they discussed media “to tie students in with the real world,” to practice “identifying bias/propaganda,” and to stay up-to-date with current events. This supports the quantitative data, which suggests that teachers discuss media most often when it applies to the subject matter, but also to stimulate interest. Discussing media to relate current events and tie students into the real world also encourages participation. The theme of identifying bias is a media literacy skill promoted through critical evaluation, and it is significant that a DPS teacher identified the importance of the discussion of media content as a way of identifying bias. Other DPS teachers reported avoiding discussion of media content because it is “discouraged by school administration,” suggesting that although the quantitative data does not indicate discouragement as a prioritized reason for avoiding media discussion, some teachers believe it to be an inhibiting factor. The juxtaposition of the qualitative and quantitative data for the Denver group suggests that perceptions and policies regarding media use and discussion vary by school.

**Research Question 1b. How do Colorado teachers use and discuss media in the classroom?**
**Measuring DPS and Eagle County teachers’ media use**

Table 5.8: Concepts measuring media use in the classroom

<table>
<thead>
<tr>
<th>Question Number</th>
<th>Overall Results Mean (SD)</th>
<th>DPS Mean (SD)</th>
<th>Eagle County Mean (SD)</th>
<th>t-test t (sig)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1**How often do you use media</td>
<td>3.47 (1.05)</td>
<td>3.38 (1.02)</td>
<td>4.02 (1.00)</td>
<td>-3.74 (0.86)</td>
</tr>
<tr>
<td>Q20** How often staff development emphasizes media use</td>
<td>2.39 (1.12)</td>
<td>2.24 (1.06)</td>
<td>3.16 (0.95)</td>
<td>-5.22 (0.18)</td>
</tr>
<tr>
<td>Q18* Use media to teach different perspectives</td>
<td>3.92 (0.89)</td>
<td>3.91 (0.90)</td>
<td>4.07 (0.83)</td>
<td>-1.06 (0.64)</td>
</tr>
<tr>
<td>Q19* Use media to stimulate interest</td>
<td>4.10 (0.92)</td>
<td>4.07 (0.96)</td>
<td>4.38 (0.80)</td>
<td>-1.94 (0.97)</td>
</tr>
<tr>
<td>Q37* Students compare information from various sources</td>
<td>2.68 (1.07)</td>
<td>2.63 (1.09)</td>
<td>2.95 (0.94)</td>
<td>-1.96 (0.004)</td>
</tr>
</tbody>
</table>

**As measured on a scale of 1-5, with 1 indicating never and 5 indicating everyday.**
*As measured on a scale of 1-5, with 5 indicating strongly agree.

Overall mean scores for similarly scaled questions without a superscript in common are significantly different at p<.05

The results in Table 5.8 consider media use as measured by the survey questions, and they indicate that respondents reported using media between sometimes and often. Participants expressed agreement with statements about using media to stimulate interest and teach different perspectives. The overall sample also reported between disagreement and indifference to the question about students comparing information from various sources including new media such as websites or blogs. Finally, overall results indicate that staff development workshops rarely to sometimes emphasize media use. Independent t-tests showed a significant difference between the districts in their responses to the question about the comparison of information sources. Eagle County teachers indicated
significantly less disagreement with the question about their students comparing
information from various sources than DPS teachers.

Table 5.9:
Concepts measuring media use: Rank the media used

<table>
<thead>
<tr>
<th>Q2. Rank the media you use</th>
<th>% who use media</th>
<th>Overall Mean (SD)</th>
<th>DPS Mean (SD)</th>
<th>Eagle County Mean (SD)</th>
<th>t-test t (sig)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Newspapers</td>
<td>59%</td>
<td>4.05a (1.66)</td>
<td>3.99 (1.74)</td>
<td>4.18 (1.55)</td>
<td>-0.41 (0.49)</td>
</tr>
<tr>
<td>Magazines</td>
<td>78%</td>
<td>3.99a (1.69)</td>
<td>3.87 (1.74)</td>
<td>4.63 (1.55)</td>
<td>-2.07 (0.63)</td>
</tr>
<tr>
<td>Internet</td>
<td>95%</td>
<td>2.65 (1.86)</td>
<td>2.55 (1.74)</td>
<td>2.42 (1.65)</td>
<td>0.40 (0.48)</td>
</tr>
<tr>
<td>Television</td>
<td>52%</td>
<td>4.50b (1.59)</td>
<td>4.32 (1.56)</td>
<td>4.60 (1.35)</td>
<td>-0.64 (0.46)</td>
</tr>
<tr>
<td>Radio</td>
<td>48%</td>
<td>4.87b (1.97)</td>
<td>5.05 (1.90)</td>
<td>4.29 (2.40)</td>
<td>1.13 (0.07)</td>
</tr>
<tr>
<td>Films</td>
<td>86%</td>
<td>3.31 (1.82)</td>
<td>3.17 (1.77)</td>
<td>3.62 (1.69)</td>
<td>-1.39 (0.76)</td>
</tr>
</tbody>
</table>

*As ranked on a scale of 1-7, with 1 indicating the main media used in the classroom Overall mean scores without a superscript in common are significantly different at p<.05

In addition to measuring perceptions of use and discussion, several survey questions measured the types of media and technology used most frequently. Table 5.9 reports the results for ranking questions measuring the type of media used. Results indicate that the Internet is the most popular media resource used by participants, followed by films, magazines, and newspapers. Radio was listed as the least common type of media used overall, with television being the penultimate. Results of independent t-tests comparing the groups showed no significant differences in the way the districts rank the technology they use, although the results in Table 5.9 suggest that Eagle County teachers may rank radio slightly higher than television or magazines.

In addition to considering what media teachers use most often, the survey also questioned participants about the type of technology with which they are equipped. A crosstab analysis was conducted to determine the relationship between the technology
resources available to teachers based on which district they teach in, and the results are indicated in Table 5.10.

Table 5.10: Concepts measuring availability of technology resources

<table>
<thead>
<tr>
<th>Q4. What technology are you equipped</th>
<th>Overall %</th>
<th>DPS</th>
<th>Eagle County</th>
</tr>
</thead>
<tbody>
<tr>
<td>DVD player</td>
<td>65.4%</td>
<td>60.8%</td>
<td>86%</td>
</tr>
<tr>
<td>VHS player</td>
<td>59.1%</td>
<td>58.2%</td>
<td>62.8%</td>
</tr>
<tr>
<td>Video camera</td>
<td>13.5%</td>
<td>10.8%</td>
<td>25.6%</td>
</tr>
<tr>
<td>Computer</td>
<td>89.9%</td>
<td>89.2%</td>
<td>93%</td>
</tr>
<tr>
<td>Television</td>
<td>56.1%</td>
<td>53.6%</td>
<td>67.4%</td>
</tr>
<tr>
<td>Specialized S.</td>
<td>19.8%</td>
<td>15.5%</td>
<td>39.5%</td>
</tr>
<tr>
<td>Projectors</td>
<td>58.6%</td>
<td>56.7%</td>
<td>67.4%</td>
</tr>
<tr>
<td>Radio</td>
<td>28.3%</td>
<td>28.9%</td>
<td>25.6%</td>
</tr>
</tbody>
</table>

The data reported in Table 5.10 suggests that teachers are most often equipped with computers, followed by DVD and VHS players. Specialized software allowing for the creation of advertisements and video cameras were far less common equipment amongst respondents. These results indicate that Eagle County teachers are equipped with more technology across the board with the exception of radio than Denver teachers. Responses to this survey question suggest that more than half of Eagle County participants are equipped with a computer, television, projector, DVD and VHS player. Although this survey question allowed for write-in responses, the qualitative data did not differ between districts, and simply introduced other specific technology available to teachers in these districts, such as Promethean Board, Elmo, Smartboard, geometers sketchpad, TI-84 calculators, and laptops. Whereas the data in Table 5.10 represents the
technology teachers are equipped with, results indicated in Table 5.11 measure the technology teachers use most often.

Table 5.11: Concepts measuring technology use: Ranking technology used most often

<table>
<thead>
<tr>
<th>Q5. Rank the technology you use most often</th>
<th>% who use technology</th>
<th>Overall Mean (SD)</th>
<th>DPS Mean (SD)</th>
<th>Eagle County Mean (SD)</th>
<th>t-test t (sig)</th>
</tr>
</thead>
<tbody>
<tr>
<td>DVD Player</td>
<td>85%</td>
<td>2.89 (1.63)</td>
<td>2.78 (1.55)</td>
<td>3.19 (1.55)</td>
<td>-1.32 (0.85)</td>
</tr>
<tr>
<td>VHS Player</td>
<td>74%</td>
<td>3.75* (1.69)</td>
<td>3.54 (1.53)</td>
<td>4.54 (1.87)</td>
<td>-2.46 (0.05)</td>
</tr>
<tr>
<td>Television</td>
<td>60%</td>
<td>3.80* (1.74)</td>
<td>3.67 (1.74)</td>
<td>3.59 (2.27)</td>
<td>0.17 (0.09)</td>
</tr>
<tr>
<td>Computers</td>
<td>94%</td>
<td>1.89 (1.52)</td>
<td>1.85 (1.51)</td>
<td>1.62 (1.14)</td>
<td>0.89 (0.18)</td>
</tr>
<tr>
<td>Radio</td>
<td>40%</td>
<td>4.33 (1.72)</td>
<td>4.32 (1.55)</td>
<td>4.36 (2.01)</td>
<td>-0.08 (0.27)</td>
</tr>
<tr>
<td>Specialized S.</td>
<td>42%</td>
<td>3.82 (1.93)</td>
<td>3.73 (1.99)</td>
<td>3.91 (1.88)</td>
<td>-0.36 (0.75)</td>
</tr>
<tr>
<td>Video Camera</td>
<td>43%</td>
<td>4.65 (1.87)</td>
<td>4.79 (1.92)</td>
<td>4.10 (1.58)</td>
<td>1.46 (0.09)</td>
</tr>
</tbody>
</table>

*As ranked on a scale of 1-7, with 1 indicating the main technology used in the classroom
Overall mean scores without a superscript in common are significantly different at p<.05

Results in Table 5.11 consider how often teachers reported using different technology, with the overall sample reporting computers as the most frequent technology used, followed by DVD and VHS players. Radios, specialized software and video cameras were the technology used least frequently according to respondents. Independent t-tests yielded a significant difference between the ways the groups ranked VHS players, with DPS respondents ranking VHS players with higher priority than Eagle County teachers. Eagle County respondents ranked VHS players lowest on the list of technology used, while Denver teachers ranked video cameras last. The concepts measured in Table 5.11 are important to understanding media use in the classroom, while the data in Table 5.12 below reports concepts measuring discussion of media content.
Table 5.12: Concepts measuring discussion of media content in the classroom

<table>
<thead>
<tr>
<th>Question Number</th>
<th>Overall Results Mean (SD)</th>
<th>DPS Mean (SD)</th>
<th>Eagle County Mean (SD)</th>
<th>t-test t (sig)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q31* Avoid</td>
<td>2.43 a (1.07)</td>
<td>2.44 (1.05)</td>
<td>2.47 (1.16)</td>
<td>-0.14 (0.18)</td>
</tr>
<tr>
<td>Q31*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q21**</td>
<td>3.31 b (0.97)</td>
<td>3.28 (0.98)</td>
<td>3.58 (0.91)</td>
<td>-1.86 (0.62)</td>
</tr>
<tr>
<td>Q21**</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q32**</td>
<td>3.43 (0.99)</td>
<td>3.45 (0.97)</td>
<td>3.28 (1.16)</td>
<td>.90 (0.03)</td>
</tr>
<tr>
<td>Q32**</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q33**</td>
<td>3.07 a (0.93)</td>
<td>3.08 (0.93)</td>
<td>3.10 (0.85)</td>
<td>-0.07 (0.54)</td>
</tr>
<tr>
<td>Q33**</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q34**</td>
<td>2.99 a (0.96)</td>
<td>3.00 (0.98)</td>
<td>3.02 (0.86)</td>
<td>-0.14 (0.58)</td>
</tr>
<tr>
<td>Q34**</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q35**</td>
<td>2.84 b (0.98)</td>
<td>2.85 (1.00)</td>
<td>2.88 (0.83)</td>
<td>-0.21 (0.22)</td>
</tr>
<tr>
<td>Q35**</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q36**</td>
<td>2.95 a (1.01)</td>
<td>2.88 (1.03)</td>
<td>3.21 (0.94)</td>
<td>-1.90 (0.82)</td>
</tr>
<tr>
<td>Q36**</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q38**</td>
<td>2.94 a (1.19)</td>
<td>2.95 (1.20)</td>
<td>2.95 (1.15)</td>
<td>0.01 (0.61)</td>
</tr>
<tr>
<td>Q38**</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Question</td>
<td>Mean (SD) Non-Media</td>
<td>Mean (SD) Media</td>
<td>Mean (SD)</td>
<td>Mean (SD)</td>
</tr>
<tr>
<td>----------</td>
<td>---------------------</td>
<td>----------------</td>
<td>-----------</td>
<td>-----------</td>
</tr>
<tr>
<td>Q39** How often discuss the values/morals of non-media</td>
<td>2.81 (1.14)</td>
<td>2.84 (1.17)</td>
<td>2.78 (1.08)</td>
<td>0.28 (0.34)</td>
</tr>
<tr>
<td>Q40** How often discuss how material was created for non-media</td>
<td>3.11 (1.14)</td>
<td>3.08 (1.16)</td>
<td>3.19 (1.02)</td>
<td>-0.60 (0.28)</td>
</tr>
<tr>
<td>Q41** How often discuss why the material is significant for non-media</td>
<td>3.89 (1.04)</td>
<td>3.85 (1.05)</td>
<td>4.10 (1.01)</td>
<td>-1.37 (0.91)</td>
</tr>
<tr>
<td>Q27*** Staff development emphasize discussion of media content</td>
<td>2.23 (0.98)</td>
<td>2.07 (0.88)</td>
<td>2.98 (0.94)</td>
<td>-6.03 (0.60)</td>
</tr>
</tbody>
</table>

*As measured on a scale of 1-5, with 5 indicating strongly agree.
** As measured on a scale of 1-5, with 1 indicating never and 5 indicating everyday.
***As measured on a scale of 1-5, with 1 indicating never and 5 indicating always.

Overall mean scores for the how often questions without a superscript in common are significantly different at p<.05

The question set in Table 5.12 measures the concept of media discussion in the classroom. Overall results indicate that teachers discuss media content and encourage debate about controversial topics between sometimes and often. Participants reported that they sometimes corrected students’ erroneous beliefs fostered by media content and discussed the values portrayed in media content. Results indicate that participants discuss the creative techniques used to produce media and talk about how media elicits emotions sometimes, but less often than other dimensions. The final portion of the question set

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displayed in Table 5.12 queried teachers about their use of discussion in presenting traditional, non-mediated curriculum. Results show that respondents discuss why material is significant to their course of study often when presenting non-mediated curriculum, and they sometimes discuss when the material was created, who created it, and how it reflects the values and morals of the creator.

Independent t-tests comparing the responses of the two districts found a significant difference in the way the groups report encouraging debate about how media content depicts controversial topics. Denver teachers reported significantly greater agreement with questions about using discussion to encourage debate about how content depicts controversial topics. However, with the exception of encouraging debate about controversial topics, Eagle County teachers reported stronger agreement with statements measuring discussion of media content across the board. There were no significant differences between the groups in their responses to the survey questions about discussion of traditional curriculum content.

**Concepts measuring media production and creation**

Media production and creation are fundamental concepts of media literacy, but the analysis of archival data illustrated that these concepts are not addressed as information literacy skills by either district or the CILS. Several survey questions measured both practices and perceptions of media creation in the classroom. These questions asked participants to rank reasons for creating media or avoiding media production in their classrooms, and the results are indicated in Table 5.13 and 5.14.
Table 5.13:
Concepts measuring media production and creation: Ranking reasons for creating media

<table>
<thead>
<tr>
<th>Q10. Rank the reasons that you create media</th>
<th>% who rank reason to create</th>
<th>Overall Results Mean (SD)</th>
<th>DPS Mean (SD)</th>
<th>Eagle County Mean (SD)</th>
<th>t-test t (sig)</th>
</tr>
</thead>
<tbody>
<tr>
<td>To teach different perspectives</td>
<td>78%</td>
<td>3.31 (1.98)</td>
<td>3.42 (2.05)</td>
<td>3.82 (1.63)</td>
<td>-0.75 (0.15)</td>
</tr>
<tr>
<td>To stimulate interest</td>
<td>82%</td>
<td>2.41(^a) (1.40)</td>
<td>2.41 (1.44)</td>
<td>2.45 (1.32)</td>
<td>-0.13 (0.73)</td>
</tr>
<tr>
<td>It applies to my subject matter</td>
<td>83%</td>
<td>2.50(^a) (1.47)</td>
<td>2.55 (1.41)</td>
<td>2.33 (1.77)</td>
<td>0.59 (0.62)</td>
</tr>
<tr>
<td>It encourages participation</td>
<td>83%</td>
<td>2.73(^a) (1.44)</td>
<td>2.73 (1.43)</td>
<td>2.20 (1.06)</td>
<td>1.56 (0.20)</td>
</tr>
<tr>
<td>Media resources are available</td>
<td>79%</td>
<td>4.66 (1.77)</td>
<td>4.45 (1.66)</td>
<td>4.73 (1.91)</td>
<td>-0.68 (0.33)</td>
</tr>
<tr>
<td>My school encourages production</td>
<td>76%</td>
<td>4.84 (2.13)</td>
<td>4.97 (2.16)</td>
<td>4.38 (1.91)</td>
<td>1.22 (0.66)</td>
</tr>
</tbody>
</table>

* As ranked on a scale of 1-8, with 1 indicating a prioritized ranking. Overall mean scores without a superscript in common are significantly different at p<.05

Table 5.14:
Concepts measuring media production and creation: Reasons to avoid creating media

<table>
<thead>
<tr>
<th>Q12. Rank the reasons you avoid creating media</th>
<th>% who rank reason to avoid creating</th>
<th>Overall Results Mean (SD)</th>
<th>DPS Mean (SD)</th>
<th>Eagle County Mean (SD)</th>
<th>t-test t (sig)</th>
</tr>
</thead>
<tbody>
<tr>
<td>It doesn’t apply to the subject</td>
<td>34%</td>
<td>3.29(^a) (2.42)</td>
<td>3.27 (2.50)</td>
<td>3.00 (2.83)</td>
<td>0.15 (0.88)</td>
</tr>
<tr>
<td>I don’t have the resources</td>
<td>68%</td>
<td>1.89 (1.69)</td>
<td>1.95 (1.74)</td>
<td>1.42 (0.67)</td>
<td>1.05 (0.09)</td>
</tr>
<tr>
<td>It distracts students</td>
<td>31%</td>
<td>5.36(^b) (1.78)</td>
<td>5.42 (1.89)</td>
<td>5.00 (1.41)</td>
<td>0.47 (0.23)</td>
</tr>
<tr>
<td>My school</td>
<td>20%</td>
<td>5.46(^b) (2.13)</td>
<td>5.00 (2.08)</td>
<td>6.67 (1.51)</td>
<td>-1.77 (0.44)</td>
</tr>
</tbody>
</table>
The results in Table 5.13 indicate that of the teachers who create media in their classrooms, stimulating interest, applicability to subject matter and encouraging participation are ranked as top reasons for creating media use. School encouragement of media creation and availability of resources have the lowest rankings of the overall sample. No significant difference was found between the groups, although the results indicate that Eagle County teachers ranked encouraging participation as the top reason for creating media and application to subject matter as a second reason. The question set indicated in Table 5.14 reports reasons for the avoidance of media creation. Results suggest that the lack of resources is the top-ranked reason for avoiding the creation of media, followed by time constraints and lack of application to the subject matter. The overall sample reported that school discouragement and negative feedback from parents are the lowest ranked reasons for avoiding media use. Independent t-tests yielded no significant differences between the groups in their reasons for avoiding media creation.

This question set allowed respondents to submit open-ended responses indicating their specific reasons for creating or avoiding the creation of media. In Eagle County, these qualitative responses largely support the quantitative results suggesting a lack of resources as the main inhibiting factor. For example, one Eagle County teacher wrote “a
lack of computer lab time to create media” is a main factor hindering the creation of media, while another wrote “I need training and A LOT of it, individualized.” These responses support the quantitative data which suggests that time constraints and resources are limiting factors. Denver teachers also submitted thoughtful responses to the open ended questions, with some teachers writing “I do not understand the concept of creating media” or “what do you mean by media production.” Teachers who understood the concept responded that “student creations mean they demonstrate learning,” “students need technology,” and “students need to be able to compete globally.” One teacher responded that they create media in the classroom because “it’s in the mandated curriculum.” However, the majority of qualitative responses measuring this concept addressed reasons for avoiding media creation. Many teachers wrote that “resources are limited” and “there isn’t enough time to teach content.” Some added that “it isn’t covered on the CSAPs,” and they expressed a “lack of time and technology experience” as limiting factors to creating media. The lack of equipment, resources, and time reemerged as themes in the qualitative responses, supporting the quantitative survey results.

Research Question 2. How do local media literacy practices compare with ideal media literacy practices as established by national media literacy organizations and scholars?

While the first research question could only be assessed by querying teachers and analyzing the quantitative results of the survey, the second research question considers both survey and archival data. The quantitative results listed above indicate some overlap between local and ideal practices. For example, teachers reported using media often to
stimulate interest or teach different perspectives. The ability to access media and information was a concept that emerged in my analysis of the archival data. Survey questions measuring this concept queried respondents about the types of technology available to them and asked them to rank the media and technology they use most often. In terms of the tools used to access information, results in Table 5.10 report that teachers are most often equipped with computers as a means of accessing media/information and Table 5.9 suggests the Internet is the preferred media outlet amongst the overall sample. These media outlets overlap with those suggested in the 12 Basic Principles. Finally, the overall sample disagreed with statements about staff development workshops emphasizing media use. Collaboration and group workshops are strategies to integration suggested by the CML, but survey results indicate that local teachers disagree with statements about staff development emphasizing media use and discussion.

Analysis of applicable archival data suggested that critical evaluation of media and information is a concept that overlaps between media literacy principles and the information literacy standards. Survey questions measuring critical evaluation were framed around discussion, querying teachers about how they discuss media and information with their students. Results can be found in Table 5.12. The quantitative results did not indicate much overlap between local and ideal practices in regard to critical evaluation. Teachers reported sometimes discussing the values portrayed in content and the creative techniques used to produce media. The survey results suggest that teachers sometimes ask students how media content makes them feel or correct erroneous beliefs fostered by media content. Although this quantitative data does not
suggest any remarkable findings in terms of overlap between local and ideal practices, some open-ended, qualitative responses enriched the measurement of this concept.

For example, a DPS teacher responded that discussion of media content is useful in helping students “identify bias/propaganda,” while another suggested that discussion of media content is “discouraged by school administration.” These qualitative responses from DPS teachers suggest that practices of critical evaluation of media content differ on a school-to-school basis. It also suggests that media literacy skills such as the identification of bias are being used locally. An Eagle County teacher reinforced the importance of discussion in an open-ended response, writing:

“Discussing media content allows students to take information they have read/seen and put it into their own words, analyze their own understanding of the information presented and speak with others about other interpretations or understandings or misunderstandings. It expands student literacy because it is a venue in which students can reword what information was presented to them and they can decide, using their own words, whether they disagree or agree. They are more likely to use words the media used, which increases understanding and literacy.”

Finally, it is important to note the significant difference reported in Table 5.12 between the ways the districts reported encouraging debate about how media content depicts controversial content. Debate can be a form of critical evaluation, allowing students to express their own interpretations as well as develop a tolerance for different perspectives. Eagle County teachers reported significantly less agreement with the statement about encouraging debate surrounding the depiction of controversial content.

The Eagle County teacher quoted above spoke to the importance of discussion as a way of promoting student literacy, and several teachers from both districts also
expressed their feelings on promoting literacy through the use and discussion of media content. Many teachers responded to the open-ended questions about how media use and discussion can expand student literacy, however these concepts were also measured in several survey questions. Results in Tables 5.2 and 5.5 indicate that the overall sample expressed disagreement with negative statements about media use and discussion not expanding student literacy. Media literacy principles suggest using media as a standard pedagogical tool by substituting standard curriculum materials with excerpts from the media to practice traditional skills, such as reading comprehension.

Although some survey questions measured the concept of student literacy, the specific examples from district teachers offer a more insightful look at how teachers use media to expand literacy. In Eagle County, teachers responded that using media promotes student literacy by connecting students to the “author’s purpose and perspective,” and some teachers offered specific examples. This clearly overlaps with the 12 Basic Principles, which emphasize critical evaluation of the intentions of media messages. Another Eagle County teacher responded “I think using media content in my subject area (math) is useful in breaking down truth/fact from lies/twisted truths/opinions - i.e. statistics are not always a reliable source of information because it depends on who collected what kind of information from whom.” This specific example represents an overlap between local practices and PLS 12. Basic Principle 5 (Scheibe & Rogow, 2004) suggests “identifying erroneous beliefs fostered by media content by identifying misleading ways data are presented in the media such as citing statistics incorrectly, drawing false conclusions from misleading data, presenting unclear figures” (p. 4).
Another Eagle County teacher wrote “In [grades] 5/6 we look for bias, opinion, and facts. We really do not debate our own beliefs, but become aware of the beliefs of others and the students and their parents see where the facts fit within the realm of their own beliefs.” This example speaks to both the overlap between local and ideal practices, and also the sentiment reported by Eagle County teachers about avoiding debate regarding controversial topics. Although the teachers didn’t rank negative feedback from teachers and parents as being a primary reason to avoid use or discussion of media content, this qualitative response is evidence that some teachers tread with caution when discussing different perspectives. Finally, an Eagle County teacher reported “I think using media can illustrate pop culture...especially to show how history still influences us today. Like using a Spongebob episode parody of E.A. Poe's Telltale Heart to show how Poe's works are timeless literature.” This example is unique because it expresses how this teacher uses media in conjunction with a traditional canonical text to advance literacy skills. This example overlaps with Basic Principle 8, which recommends analyzing “the effect that specific media have had on a particular issue or topic historically and/or across different cultures by discussing how people of earlier generations might have learned about this topic” (p. 5).

Qualitative responses from Denver teachers fell into two main categories: Those who listed ways for media to enhance traditional literacy skills, and those who specifically identified media literacy skills. For example, several teachers responded that using media expands student literacy by exposing students to “comparative grammar, culture, context clues” and requires a sort of “reading comprehension.” Another DPS
teacher suggested that media provides “students [with] a platform to write, speak and read about a topic,” and requires “learning the basics of rhetoric.” One teacher suggested that media use promote literacy concepts such as “content in context; understanding tone and register; understanding implications, connotations, nuance, and intention; discerning regional or slang usage.” Another contended that “literacy is the use of words, [and] when students are discussing they are constantly searching for the correct words to get their ideas out.” Other teachers reinforced the importance of critical evaluation, writing: “Media content can be used to compare/contrast different authors’ point of view about the same subject,” and “students need to differentiate between information, entertainment, and propaganda or the commonalities between them.” Several teachers expressed their beliefs that “discussion of media helps create an appetite for further research, and assists students to step out of their comfort zone to stretch their thinking. It also helps them begin to formulate their own thinking.” Another wrote that “discussing content allows the individual to apply the pre-existing knowledge to analyze the material and synthesize an opinion which can be defended in a discussion. Making this a staple in the classroom encourages kids to engage the material presented regardless of the form it is presented in.”

These open-ended responses support the quantitative data, which suggests that the overall sample reported stimulating interest as the top reason for using and media, and applicability to subject matter as the primary reason for discussing media. They also suggest that some local teachers already utilize media literacy approaches in their curriculum. Some teachers specifically recognized that “media literacy helps students
learn about appropriate behavior and enhances communication skills.” Another wrote that “media literacy in our age is extremely important; how are [students] influenced and how much; as well as differentiating between facts, fiction, primary and secondary sources.” Some respondents highlighted the importance of media literacy skills, writing “media, if used correctly is used to teach higher order thinking skills. The nature of using multiple media [sources] forces the student to analyze which ones suit the theme he/she desires to portray and synthesize the information.” Other open-ended responses from DPS teachers suggested that “the more our students can deconstruct the images and information which forms the foundations of their world, the better off they are in learning how to think for themselves and own their knowledge.” This qualitative response speaks to Potter’s (2001) knowledge structures and dimensions as the foundation for understanding the layers of media messages. This suggests that while some teachers are using media literacy skills more superficially to teach concepts of credibility and bias, while others do consider the dimensions of media literacy that enable students to understand multiple interpretations.

Discussion

The quantitative and qualitative survey results provide insight into the habits of teachers in regard to using and discussing media, as well as offering some measure of their perceptions about media use and discussion. The purpose of the discussion section is to integrate the quantitative and qualitative data and to identify significant themes emerging from the survey results. In this section, I will consider how the survey results answer the research questions, which will involve making generalizations based on the
responses of the overall sample. Although the objective of the research questions is to understand the habits and perceptions of the entire sample, independent t-tests showed some significant differences between the districts. These differences will be discussed in the following section, which will synthesize the quantitative and qualitative survey results in order to understand the central themes that surfaced in the survey. These themes will then be discussed in Chapter 6 along with the concepts identified in the evaluation of archival data. The juxtaposition of themes from the quantitative and qualitative measures of this study will provide a foundation to issue recommendations to the Denver and Eagle County school districts.

Within the results reported for the overall sample, teachers indicated using media often in the classroom and media was perceived positively by the respondents. As aforementioned, the overall sample included a high percentage of teachers with more than two years of teaching experience. Although no significant difference was found between the groups based on years of experience, the results in Table 5.1 indicate that teachers with less than one year of experience teaching reported using media the least. I would speculate that the lower scores from newer teachers are caused by a lack of experience using media and technology. As new teachers, these individuals might be familiarizing themselves with the CSAP standards expected of their students and focusing strictly on curriculum demands. Newer teachers may have a lack of experience with the media and technology resources available in their schools, thus inhibiting them from using media more often. Finally, more experienced teachers have had more time to develop and shape their curriculum based on emerging resources related to their subject.
The data in Table 5.2 suggests no significant difference between groups in their perceptions of media use, and results show that the overall sample expressed greater agreement with more general statements about media use having a place in the classroom and encouraging participation. This suggests that teachers are open to using media; that they recognize it as a tool that can encourage participation. However, teachers may be less familiar with using media to advance specific dimensions of knowledge. Respondents expressed less agreement with the more specific statements about media use and its correlation with Potter’s dimensions of media literacy. By not considering the more in-depth dimensions of media literacy, teachers are limiting the control students have over their interpretations. For example, simply recognizing what it is about a media message that stimulates interest and encourages participation would draw students’ awareness to the aesthetic dimensions. This would give them a greater understanding of how media influence students in the classroom, which could enhance understandings of how media use influences them outside the classroom.

Qualitative responses to the open-ended questions support the quantitative data about perceptions of media use. Teachers in both districts indicated specific ways they use media content in the classroom because it applies to their subject matter, stimulates interest, encourages participation and teaches different perspectives. Qualitative responses also proposed that some teachers believe that “young people learn better with media…it’s how they’re programmed (vs. pre-computer generations).” This last response speaks to the importance of media literacy education. Because young people are being educated in the world of instantaneous information and ubiquitous messages, it is
important that they understand how media affects them beyond the cognitive dimension. This is important because most media effects are subtle and occur over the long-term, thus students must develop the knowledge structures to recognize the specific methods used to elicit emotions or attract attention. This information gathered from the qualitative responses suggests that although teachers find ways to use media content to enrich their curriculum, they recognize the increasingly visual nature of the 21st century.

Regarding perceptions and practices discussing media in the classroom, the results indicated in Table 5.5 show stronger disagreement with the more general negative statements about discussion of media. Similar to the line of questioning about media use, participants indicated less agreement with more specific positive statements about discussing media in regard to Potter’s dimensions of media literacy. The results in Table 5.6 suggest that teachers discuss media most often when it applies to the subject matter, to stimulate interest and encourage participation. These results are supported by the qualitative data from teachers, who responded that they discussed media “to tie students in with the real world,” to practice “identifying bias/propaganda,” and to stay up-to-date with current events. This open-ended response is valuable because it suggests that teachers are presently incorporating media literacy practices into their classrooms. Identifying bias requires critical evaluation of media messages, and several teachers expressed comparing information sources as a reason for discussing media content. This suggests that many of the teachers sampled use discussion to advance media literacy skills, indicating that although media literacy is not a concept identified by the state or districts, teachers are instilling media literacy skills on a classroom-level. Quantitative
data suggests that teachers ranked stimulating interest and encouraging discussion as prime reasons for using and discussing media, shedding insight into my first research question about how teachers perceive media use and discussion.

Results in Table 5.5 indicate a significant difference between the ways the groups agreed to using discussion to recognize the creative techniques as means of expanding student literacy. Teachers in Denver reported significantly stronger agreement with the statement about the recognition of creative techniques as expanding student literacy. This suggests that DPS teachers are addressing the aesthetic dimension of media literacy more often than Eagle County teachers. This could be because DPS teachers are addressing the attention-grabbing, creative aspects of media when they present it to students. This indicates that although there is not a difference between the groups in their reasoning for using and discussing media content, there is a significant difference between the ways the districts perceive discussion as expanding student literacy.

Results of independent t-tests yielded some significant differences between DPS and Eagle County teachers. DPS teachers reported that they were more likely to avoid media use because of the unavailability of resources, while Eagle County teachers said they were more likely to avoid media use because of inappropriate content. The difference in reasons for avoiding media use represented slight statistical significances between the two groups in regard to perceiving media content as inappropriate. This indicates that while Denver teachers are limited by the availability of resources, a tangible factor affecting many teachers, Eagle County teachers self-censor in their use of media content, avoiding what they deem as inappropriate. However qualitative data
suggested that DPS teachers also feel that inappropriate content can inhibit media use. For example, one teacher responded to an open-ended question, saying “our school discourages the use of media in classrooms. Videos and DVDs are banned from our classrooms.” Another DPS teacher reported avoiding discussion of media content because it is “discouraged by school administration” in the open-ended response. These qualitative responses suggest that some teachers in both groups avoid using and discussing media in their classrooms because of school discouragement. The quantitative data suggests that in Eagle County, this is a general sentiment. The juxtaposition of the qualitative and quantitative survey results suggest that perceptions and policies regarding media use and discussion vary on a school-level.

Teachers expressed neither agreement nor disagreement with the questions regarding aversion or encouragement of debate in relation to how media content depicts controversial topics. Although some qualitative responses suggest that teachers use debate as a strategy for teaching critical evaluation, the data in Table 5.4 indicates that Eagle County teachers ranked inappropriate content as their top reason for avoiding media use. Results in Table 5.12 suggest another significant difference between the groups, indicating that Eagle County teachers expressed less agreement with statements about encouraging debate of controversial topics. This represents a pattern in the quantitative data, whereby Eagle County teachers intentionally avoid the use and discussion of media based strictly on content.

Nevertheless, the majority of qualitative responses from teachers stating reasons they avoid media use support the quantitative data, indicating the lack of resources as an
inhibiting factor. Many teachers indicated time constraints as a factor inhibiting media use, and one DPS teacher seemed to sum up the situation, writing: “I would love to use media/technology in my classroom more often. However, it is not readily available to me. It would take a lot of time to borrow media/technology only to have to return it after the class. If it was permanently in my classroom, I would use it frequently.” This testimony supports the quantitative data, and also suggests that some teachers wish they were able to use media more. Although no survey questions measured this concept, several examples drawn from the open-ended responses suggest that a greater availability of resources would increase teachers’ use of media in the classroom. Finally, some qualitative responses suggest that short class periods and time constraints limit the media teachers use in the classroom, also supporting the survey results.

Results in Table 5.8 measured practices using media in the classroom, and the overall results report that teachers use media most often to stimulate interest and teach different perspectives. However, a significant difference was found between the groups in their agreement with the statement about students comparing information from various sources. The data suggests that Eagle County teachers require their students to compare information from various sources such as new media and websites significantly more frequently than DPS teachers. Comparison of information sources is a media literacy skill that promotes critical evaluation and technology-based skills by requiring that students access multiple information sources. Eagle County teachers expressed significantly less disagreement with the statement and the overall sample erred on the side of disagreement.
However, qualitative responses from the open-ended questions negate this data, with teachers from both districts responding that they regularly ask their students to identify bias and differentiate between opinions and fact. This suggests that while teachers ask students to critically evaluate information, they might not require them to evaluate multiple sources. For example, teachers might show students a newspaper article and ask them to identify which characters in the segment are reporting fact, and when; and which individuals are stating their opinion and when. Asking students to compare information sources involves a more in-depth analysis of information content, whereby students compare the facts, statements and opinions given by multiple sources and assess any bias presented in the sources. Although some of the quantitative and qualitative data conflict, time constraints identified in both the quantitative and qualitative responses, are a factor inhibiting the comparison of multiple sources. Whereas using critical evaluation of a single source can be done as a quick exercise in class, comparing and analyzing multiple sources can double the amount of time needed.

In addition to time constraints, a lack of resources was identified as the top reason for avoiding the use and discussion of media content. A much smaller percentage of Denver teachers reported access to DVD players, and results in Table 5.11 suggest that Eagle County teachers use VHS players significantly less than Denver teachers. A lack of resources explains this significance, with fewer DPS teachers having access to the newer DVD technology and relying on more aged VHS players. Eagle County teachers ranked VHS players lowest as the technology used most often, but they ranked DVD players second. The data indicated in Tables 5.10 and 5.11 suggests that although the entire
sample of teachers reported film as a common media tool used in their classrooms, the resources used to present films vary significantly by district.

The quantitative and qualitative results of the survey are useful in answering my research questions. The data suggests ways that local teachers use and discuss media in the classroom, in addition to measuring their perceptions about media use and discussion. Many of these practices overlap with some of the 12 Basic Principles, however the quantitative data suggested that teachers do not regularly discuss the moral, aesthetic or emotional dimensions of media use. Therefore, while some media literacy approaches are being used in local classrooms, these practices are not occurring with the degree of depth that media literacy scholars would recommend. Although my research sought to measure overall perceptions and use, some significant differences were found between the districts. In Chapter 6, I will discuss the themes emerging from the survey results in conjunction with the archival data themes developed in Chapter 4 and draw overall conclusions.
Chapter Six: Conclusion and Recommendations

Conclusion

The purpose of this chapter is to evaluate what I have achieved with regards to the aims of my study. Several themes were examined through the evaluation of qualitative and quantitative data and the results revealed several overlapping concepts between media literacy and information literacy practices and concepts. Some gaps were also found between the state-level information literacy standards, district level plans and classroom practices in Denver and Eagle County. In chapters four and five, I summarized and discussed the findings of the archival data and survey results, and I base my conclusions in this chapter on the juxtaposition of these results. After a thorough examination of the implications of these findings, I will make recommendations for the districts based on the consideration of both archival data and survey results.

A thorough analysis of the CILS and 12 Basic Principles suggested that critical evaluation and analysis, independent learning, excellence in information seeking, and efficient access of information are concepts that overlap between media literacy and the Colorado Information Literacy Standards. Evaluation of these documents suggests that the underlying purpose of information and media literacy skills is virtually the same: To engage students in a critical understanding of how they are influenced by information.
Many scholars consider this type of learning an inquiry-based approach that focuses on the process of critical evaluation of information over information content. This method of teaching and learning has been widely used to teach traditional literacy, and media literacy scholars argue that media can be evaluated using the same inquiry process.

For example, many of the 12 Basic Principles suggest discussion as a method of promoting multiple interpretations and critical evaluation. According to Potter (2001), discussion is a way of fostering all dimensions of media literacy. Although the survey data reported limited agreement with questions about discussion of media content, the open-ended responses suggested that teachers in both districts recognize ways for discussion to promote literacy skills. This is evidence of a gap between the state, district, and classroom level practices using and discussing media. Neither the CILS nor the district documents consider discussion as way of promoting information literacy. It is possible that administrators overlooked discussion as a practice; simply assuming that discussion in a classroom is inevitable. However, the CILS would benefit from integrating the key questions: Who, What, When, Where, How and Why as a framework for discussion of curriculum content. These inquiry-based questions promote independent thinking and critical evaluation skills, and these media literacy approaches could be effective strategies to promoting information literacy skills. Furthermore, the integration of these questions does not require any advanced technology or alterations to current curriculum; but promotes the life-long learning skills.

Survey results indicated that a lack of resources is the main reason teachers avoid media use and discussion in the classroom, which is why the media literacy principles are
effective strategies: They do not require any advanced technology. For example, while showing media content in the classroom might involve accessing and using technology resources, discussion of media content does not require any tools, but still promotes a critical understanding of the layers of media messages and encourages critical understanding of the layers of all messages, whether mediated or not. Therefore, incorporating some basic principles of media literacy into the CILS and district plans could improve the documents by offering strategies for integrating information skills that aren’t technology-based. By taking the focus off of technology and technology-based skills, the district plans could shift gears to an inquiry-based framework, which would minimize the lack of resources or technology proficiency reported by teachers. By emphasizing the importance of information skills and distinguishing them clearly from technology-based skills, the Denver and Eagle County districts would encounter less difficulty in securing staff proficiency.

Although the purpose of the research was to measure practices and perceptions of media use and discussion amongst the overall sample of teachers, some significant differences emerged in the analysis of the quantitative survey data. Eagle County teachers reported significantly less agreement with statements about encouraging debate about controversial topics, and indicated that inappropriate media content is the main reason they avoid using media content. This negative view of media content is significant because media literacy approaches focus on an inquiry-based process that detracts attention from the content of a media message. This approach to using and discussing media involves concentrating energy and attention on the process of acquiring and
analyzing information, rather than drawing attention to the content of a message. One qualitative response from an Eagle County teacher suggested that in middle school, students begin to understand the concepts of bias, opinion and fact within information messages. The teacher reported that students do not really debate their own beliefs, but develop awareness of the beliefs of others. Although this supports the quantitative data about disagreement with the encouragement of debate, the strategy addressed by this teacher overlaps with media literacy principles. This further substantiates the evidence that although the quantitative results do not suggest the use of some media literacy approaches on a local level, the qualitative data collected from the open-ended questions indicates that teachers are using media literacy strategies. Thus, it seems they do agree with the underlying principles of media literacy as long as they can apply it in a way that makes the most sense to their particular circumstances in the classroom.

Other significant differences between the groups were identified in the archival data. Despite both being based on the CILS and Partnership for 21\textsuperscript{st} Century Skills, the ILT and ETIL plans differ in their definitions of and emphasis on technology and information literacy skills. Evaluation of the archival data revealed that many of the information literacy skills proposed in the Colorado Information Literacy Standards are overlooked in lieu of technology-based skills in both district plans. Denver’s ILT plan does not list the CILS as defining \textit{information literacy} and despite being used in the title, the term is never explicitly defined. The ETIL plan lists both the 21\textsuperscript{st} century skills and information literacy standards that serve as a foundation to the plan; however these specific skills are never addressed in the needs assessment or strategies to
implementation. Although the Eagle County plan claims that “the district has adopted” the CILS, the standards are not recognized as defining the components of information literacy. In the ILT plan, the standards are referred to three times (once as the Colorado Standards for Information Literacy) and listed as a Reference, but are not printed in the document or included in the Appendix.

The findings of this study reveal a need for both district documents to be restructured to define separate goals, objectives, strategies and tactics for the technology and information literacy components of the plans. For example, the plans could distinguish between definitions of and strategies for implementing information literacy and technology literacy skills. By stressing the importance of inquiry-based learning and the acquisition of information skills outside of technology use, the district plans could more effectively engender active involvement to advance staff proficiency. Both districts recognize administrative and teacher buy-in as a primary challenge in instituting their plans and although the documents indicate that educator proficiency is growing, it remains limited. By specifically defining the information and technology skills needed by educators and staff, the districts could create a standardized program of ILT or ETIL certification. Creating school-level professional development programs to support teachers in learning about information literacy and technology tools and resources might provide teachers with methods and strategies to use technology-based education to promote general knowledge in their subject. Qualitative responses to the survey questions insinuate that a lack of skills and confidence using technology were another reason teachers avoid using media. Several teachers reported that in order for them to use media,
they would need individualized and in-depth training regarding the technology resources available. The 12 Basic Principles are evidence that information literacy concepts and skills such as critical evaluation, independent learning, and group collaboration can be sharpened regardless of the technological capacity of the school. Taken together, this analysis shows that in Denver and Eagle County, less emphasis is paid to information literacy skills than technology literacy skills on the district and classroom levels. The implications of this affect both students and teachers, as indicated by the need for staff proficiency called for by the district plans, the lack of resources reported by teachers, and the reduced capacity for message interpretation implied by media literacy scholars.

In many ways, this research is an extension of media literacy research that has been conducted on a national level, applying ideal approaches to local practices in Colorado. The research aims were achieved to the extent that analysis of archival data, qualitative and quantitative survey responses provided me with a greater understanding of local practices using and discussing media, and perceptions about media use and discussion. Researching DPS and Eagle County practices allowed me to compare local customs with ideal media literacy approaches to establish overlaps and gaps. Although some significant differences were found between the groups, the majority of respondents reported positive perceptions of media use and a lack of resources as the main reason for avoiding media use. Awareness of the factors inhibiting media literacy approaches on a classroom, district, and statewide level allowed me to make recommendations to the districts about the inclusion of media literacy based not only on expert’s standards but also on teachers’ perceptions about the way media is and can be used in the classroom.
The response rate was a limiting factor in this research. The diversity of size in the two districts researched affected the demographic diversity of the sample, resulting in a higher percentage of respondents from DPS, a much larger district. Further research is needed to determine whether the significant differences between the two districts apply to other regions of the state. For example, examining another smaller district could provide information about whether the differences in agreement about media content and resource deficiency are unique to these districts. Further research would allow me to infer whether DPS teachers are substantiated in their perception of the lack of resources as more significant than a smaller district.

Although the aims of this research focused on teacher perceptions and practices, future research could measure the affects on students. Implementing an experimental media literacy curriculum similar to that conducted by Hobbs and Frost (2003) on a local level would be an effective way to measure whether the integration of media literacy approaches continues to enhance student literacy. However, in order for this to be accomplished, specific, measurable definitions of information literacy must be established by the state and districts. The establishment of a research project similar to that of Hobbs and Frost (2003) is due, given that their research took place nearly ten years ago. The ever-changing nature of media culture necessitates continual research on how teachers can use media as a tool to cultivate traditional literacy skills. Advances in technology have caused a shift in education, requiring that students gain proficiency in computer and technology skills; however school resources are a limiting factor. By expanding the skill sets to include media literacy, schools can cultivate the critical
thinking skills necessary for students to succeed in the 21st century, both independently and in the classroom.

**Recommendations**

**R3. What recommendations can be made to these districts about the inclusion of media literacy in the classroom based on the information from individual interviews and archival data and existing research of media literacy effectiveness?**

In order to answer my final research question, I had to consider how the districts could promote their mission of fostering student achievement and promoting 21st Century Skills through the incorporation of media literacy approaches. Based on the archival data analysis of state and district standards and survey results of teachers’ perceptions, I have the following general recommendations.

1. The information literacy standards could benefit from the integration of key questions as a framework to promoting critical evaluation of all subject matter. This includes the questions indicated in Table 2.3, which ask who created the message; what is communicated or implied by the message; when was the message created; where is the message being directed; how did the producers use creative techniques to capture attention; and why is this message being sent. The key questions do not require any technology resources, and would involve minimal training on the part of the teachers. Some teachers reported already using these questions and many agreed that this type of inquiry increases students’ overall literacy. Because teachers are likely to be using
similar questions in their classrooms, using the key questions as a framework for classifying information literacy might help characterize information skills.

Employing the use of key questions to frame both mediated and non-mediated information addresses the moral, emotional, and aesthetic dimensions of media literacy, broadening student perspectives and knowledge structures. Increased training would allow the teachers to make decisions about broader use of these tools across subjects. The use of key questions also promotes the inquiry process in information seeking. This critical evaluation process takes the focus off media content, and emphasizes the process by which students acquire information. Although encouraging debate about inappropriate content might push teachers beyond their comfort zone, class discussion about the themes and values portrayed in media (without comparing them to our own) could help students understand different interpretations.

2. Defining media as an information source and outlining other information sources accessed by students including textbooks and traditional non-mediated materials will help students develop awareness of credibility and bias in information sources. This may include an understanding of the role of media industries as a unique information source in a democracy that is governed by distinct rules and regulations.

3. On a district level, defining information literacy skills to the same degree that technology literacy skills are defined might help promote an inquiry-based approach. Evaluating information literacy separately from technology takes the
focus off technology and establishing measurable concepts and definitions of information literacy.

4. Creating a resource center for teachers who wish to use media literacy approaches in their classrooms will facilitate the availability of resources. The center could be done in the library or faculty lounge, and promotes the compilation of useful resources. Although teachers did not address the lack of resources for implementation of information literacy, establishing a media literacy library might encourage teachers unfamiliar with media literacy approaches to participate. The development of a resource center could encourage staff development programming to more regularly consider media use and discussion. It also gives teachers access to appropriate media content.

5. Creating an orientation for teachers about the technology resources available in their schools would address the lack of training reported by teachers in the survey responses. Using mentor teachers to teach small group orientation classes can help instill confidence in teachers uncertain of their technology competency. Successful orientations cover the set up, use and disassembly of technology resources. I recommend the orientation be required of all teachers, and after completing it, an annual refresher session be conducted to introduce any new technology. Offering an in-depth orientation for all new teachers would put them on a level playing field within the school and using mentor teachers limits training expenses.

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6. Constructing an inventory of the available technology in each school would give teachers a tangible reference list of the resources available. Allowing teachers to reference this list could also facilitate the maintenance of technology tools, which was listed in the qualitative responses as an inhibiting factor to media use.

7. Asking teachers to include use of media resources within their curriculum. mapping would allow illustrate which teachers demonstrate the most fidelity to their traditional curriculum. Pairing teachers within the district with colleagues from different schools but similar subject areas would encourage media use by offering teachers an experienced perspective about how media and technology can enhance the curriculum. Asking teachers to include use of media resources within their curriculum mapping would illustrate which teachers need increased access to computer labs and technology resources. This could help curb the lack of computer lab time reported as an inhibiting factor to media use and discussion.

8. Within the district documents, outlining the specific technology skills expected of students offers a reference list that can serve as a measurement tool as to which skills students struggle with. Although this doesn’t fall into the realm of this research, it is of interest that in Eagle County, the staff and teacher skills are specifically defined, while student skills are not. DPS did not list skills expected of staff or students. Establishing a framework of what skills are expected of students at each grade level provides the district with measurable concepts that can be evaluated and updated based on emerging technology and student needs.
References


Appendix A: Survey Questions Issued to DPS and Eagle County Teachers

1. How often do you use media in the classroom?
   1-never, 2-rarely, 3-sometimes, 4-often, 5-everyday

2. Please rank the media you use in your classroom with 1 being the media you use most frequently.

   Newspapers
   Magazines
   Internet
   Television
   Radio
   Film
   Other. Please explain.

3. Write on Other

4. What type of technology is your classroom equipped with? (Check all that apply)

   DVD player
   VHS player
   Radio
   Video camera/recording device
   Computer
   Television
   Specialized software that allows for the creation of movies or other media
   Projectors
   Other. Please specify.

5. Please rank the technology you use in your classroom with 1 being the technology you use most frequently.

   DVD player
   VHS player
   Video camera/recording device
   Computer
   Television
   Specialized software that allows for the creation of movies or other media
   Projectors
   Radio
6. Please rank the following reasons that you use media in your classroom with 1 being the main reason you use media in the classroom.

I DO NOT use media in my classroom
To teach different perspectives on a particular subject
To stimulate interest in new topics
It applies to my subject matter
It encourages student participation
Media resources are available to me
My school encourages media use
Other. Please explain in a few words.

7. Write in. Other.

8. Please rank the reasons that you avoid using media in your classroom, with 1 being the strongest reason.

I DO NOT avoid using media in my classroom
It does not apply to my subject matter
It discourages student participation
Media resources are not available to me
Media content is inappropriate
My school discourages media use
Negative feedback from parents
Other. Please explain in a few words.

9. Write in. Other

10. Please rank the reasons that you create media in your classroom, with 1 being the strongest reason.

I DO NOT create media in my classroom
To teach different perspectives on a particular subject
To stimulate interest in new topics
It applies to my subject matter
It encourages student participation
Media resources are available to me
My school encourages media production
Other. Please explain in a few words.

11. Write in. Other
12. Please rank the reasons that you avoid creating media in your classroom, with 1 being the strongest reason.

I DO NOT avoid creating media in my classroom
It doesn’t apply to the subject matter
I don’t have the resources to create it effectively
It distracts students from learning the material
My school discourages media production
Too time consuming
Negative feedback from parents
Other. Please explain in a few words.

13. Write in. Other.

14. Media content from film, magazines, radio broadcasts, newspapers, internet, etc. has a place in the classroom.

15. Media (television, film, magazines, newspapers, internet, radio, etc.) can be used in the classroom to encourage participation from students.

16. Media use in the classroom distracts students from learning the material.

17. It is difficult to use media in the classroom because of negative feedback from parents.

18. I use media in the classroom to teach different perspectives on a particular subject.

19. I use media such as television, film, Internet, newspapers, magazines and radio to stimulate interest in new topics.

20. Staff development workshops in my school emphasize media use such as television, film, internet, newspapers, magazines and radio in the classroom.

21. How often do you discuss media content in the classroom?

22. Please rank the reasons that you discuss media content in your classroom, with 1 being the strongest reason.

I DO NOT discuss media content in my classroom
To teach different perspectives on a particular subject
To stimulate interest in new topics
It applies to my subject matter
It encourages student participation

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Media resources are available to me
It stimulates student discussion
My school encourages media discussion
Other. Please explain in a few words.

23. Write in. Other.

24. Please rank the reasons that you avoid discussing media content in your classroom, with 1 being the strongest reason.

I DO NOT avoid discussion of media content in my classroom
It doesn’t apply to the subject matter
I don’t have the resources to discuss it effectively
It distracts students from learning the material
My school discourages media discussion
Negative feedback from parents
Curriculum demands don’t allow it
Time constraints
Other. Please explain in a few words.

25. Write in. Other.

26. Discussion of media content in the classroom distracts students from learning the planned or ‘textbook’ material.

27. Staff development workshops in my school emphasize discussion of media content in the classroom.

28. It is difficult to discuss media content such as television, film, newspapers, magazines, internet, etc. in the classroom because of negative feedback from parents.

29. It is difficult to discuss media content in the classroom because of negative feedback from school administrators.

30. It is difficult to discuss media content such as television, film, newspapers, magazines, internet, etc. in the classroom because controversial content can instigate controversial classroom discussions.

31. When I discuss media content such as television, film, newspapers, magazines, internet, etc. in the classroom, I avoid provoking debate amongst students regarding how media content depicts certain controversial topics, such as sex, politics or religion.
32. When I discuss media content in the classroom, I encourage debate amongst students regarding how media content depicts certain controversial topics, such as sex, politics or religion.

33. I correct students’ erroneous beliefs that were fostered by media content.

34. I talk about the values portrayed in media content such as television, film, newspapers, magazines, internet, etc.

35. I ask students how media content makes them feel.

36. I talk about the creative techniques used in media to capture attention.

37. My students compare information from various sources, including new media such as websites or blogs.

38. When I present traditional textbook curriculum or other non-mediated course materials to students, I discuss the author or creator of the material.

39. When I present traditional textbook curriculum or other non-mediated course materials to students, I discuss the values and moral themes in the material.

40. When I present traditional textbook curriculum or other non-mediated course materials to students, I discuss when the material was created.

41. When I present traditional textbook curriculum or other non-mediated course materials to students, I discuss why the material is significant to our course of study.

42. I believe using media content to help students recognize what emotions media messages are trying to elicit from them expands student literacy (the ability to interpret words and messages).

43. I believe using media content to help students recognize different creative techniques used in message production does not expand student literacy.

44. I believe using media content to help students recognize the moral themes and values presented in a message expands student literacy (the ability to interpret words and messages).

45. I believe using media content to help students learn factual information such as definitions and dates does not expand student literacy (the ability to interpret words and messages).
46. Write in. Text.

47. I believe *discussing* media content to help students recognize what emotions media messages are trying to elicit from them does not expand student literacy.

48. I believe *discussing* media content to help students learn factual information such as definitions and dates expands student literacy.

49. I believe *discussing* media content to help students recognize different creative techniques used in message production expands student literacy.

50. I believe *discussing* media content to help students recognize the moral themes and values presented in a message does not expand student literacy.

51. Do you believe there are other ways that discussing media content expands student literacy? Please explain.

52. What subject(s) do you teach?

53. What grade(s) do you teach?

54. How many years have you been teaching? (Include teaching in any districts not just the present district)

- Less than one year
- 1-2 years
- More than 2 years but less than 5 years
- More than 5 years but less than 10 years
- More than 10 years but less than 15 years
- More than 15 years

In what district do you teach?

- Denver Public Schools
- Eagle County
Appendix B: Colorado Information Literacy Standards

Based on and aligned with national standards, Colorado’s information literacy standards are tailored to this state and its educational needs. They state clearly and concisely the standards that students must achieve to be “information literate”. Similar in format to Colorado’s other educational standards, the following nine standards offer information literacy concepts in a familiar manner. Each standard is presented along with other Model Content Standards to facilitate opportunities to incorporate instruction in information literacy along with other subject matter.

**STANDARD 1**
The information literate student accesses information efficiently and effectively.

**STANDARD 2**
The information literate student evaluates information critically and competently.

**STANDARD 3**
The information literate student uses information accurately and creatively.

**STANDARD 4**
The information literate student is an independent learner who pursues information related to personal interests.

**STANDARD 5**
The information literate student is an independent learner who appreciates literature and other creative expressions of information.

**STANDARD 6**
The information literate student is an independent learner who strives for excellence in information seeking and knowledge generation.

**STANDARD 7**
The information literate student contributes positively to the learning community and to society and recognizes the importance of information to a democratic society.

**STANDARD 8**
The information literate student contributes positively to the learning community and to society and practices ethical behavior in regard to information and information technology.

**STANDARD 9**
The information literate student contributes positively to the learning community and to society and participates effectively in groups to pursue and generate information.

**INFORMATION LITERACY STANDARD 1**
The information literate student accesses information efficiently and effectively.

**Indicators:**
1. Recognizes the need for information.
2. Recognizes that accurate and comprehensive information is the basis for intelligent decision-making.
3. Formulates questions based on information needs.
4. Identifies a variety of potential sources of information.
5. Develops and uses successful strategies for locating information.

**Rationale:**
The student who is information literate:
• Recognizes good information is central to day-to-day living.
• Knows when to seek information.
• Knows how to frame questions.
• Knows where to seek information.
• Knows how to structure a search to locate best information.

**Alignment:** Colorado Model Content Standards

**Civics**
Standard 2: Students know the structure and function of local, state, and national government, and how citizen involvement shapes public policy.
Standard 3: Students know the political relationship of the United States and its citizens to other nations and to world affairs.

**Economics**
Standard 2: Students understand how different economic systems impact decisions about the use of resources and the production and distribution of goods and services.

**Foreign Language**
Standard 2: Students acquire and use knowledge of other cultures while developing foreign language skills.

**Geography**
Standard 1: Students know how to use and construct maps, globes, and other geographic tools to locate and derive information about people, places, and environments.
Standard 2: Students know the physical and human characteristics of places, and use this knowledge to define and study regions and their patterns of change.
Standard 4: Students understand how economic, political, cultural, and social processes interact to shape patterns of human populations, interdependence, cooperation, and conflict.
Standard 6: Students apply knowledge of people, places, and environments to understand the past and present and to plan for the future.

**History**
Standard 1: Students understand the chronological organization of history and know how to organize events and people into major eras to identify and explain historical relationships.
Standard 2: Students know how to use the processes and resources of historical inquiry.
Standard 3: Students understand that societies are diverse and have changed over time.
Standard 4: Students understand how science, technology, and economic activity have developed, changed, and affected societies throughout history.
Standard 5: Students understand political institutions and theories that have developed and changed over time.
Standard 6: Students know that religious and philosophical ideas have been powerful forces throughout history.

Mathematics
Standard 3: Students use data collection and analysis, statistics, and probability in problem-solving situations and communicate the reasoning used in solving these problems.
Standard 5: Students use a variety of tools and techniques to measure, apply the results in problem-solving situations, and communicate the reasoning used in solving these problems.

Music
Standard 5: Students will relate music to various historical and cultural traditions.

Physical Education
Standard 3: Students demonstrate the knowledge of factors important to participation in physical activity.

Reading & Writing
Standard 1: Students read and understand a variety of materials
Standard 4: Students apply thinking skills to their reading, writing, speaking, listening, and viewing.
Standard 5: Students read to locate, select, and make use of relevant information from a variety of media, reference, and technical sources.
Standard 6: Students read and recognize literature as a record of human experience.

Science
Standard 1: Students understand the processes of scientific investigation and design, conduct, communicate about, and evaluate such investigation.

Visual Arts
Standard 4: Students relate the visual arts to various historical and cultural traditions.
Standard 5: Students analyze and evaluate the characteristics, merits, and meaning of works of art.

INFORMATION LITERACY STANDARD 2
The information literate student evaluates information critically and competently.

Indicators:
1. Determines accuracy, relevance, and comprehensiveness.
2. Distinguishes among facts, point of view, and opinion.
3. Identifies inaccurate and misleading information.
4. Selects information appropriate to the problem or question at hand.

Rationale:
The student who is information literate:
• Determines quality information by accessing for accuracy, validity, relevance, completeness, and impartiality.
• Uses logic and informed judgment to accept, reject, or replace information.

Alignment: Colorado Model Content Standards
Civics
Standard 3: Students know the political relationship of the United States and its citizens to other nations and to world affairs.

Economics
Standard 1: Students understand that because of the condition of scarcity, decisions must be made about the use of resources.
Standard 2: Students understand how different economic systems impact decisions about the use of resources and the production and distribution of goods and services.

Geography
Standard 2: Students know the physical and human characteristics of places, and use this knowledge to define and study regions and their patterns of change.
Standard 4: Students understand how economic, political, cultural, and social processes interact to shape patterns of human populations, interdependence, cooperation, and conflict.
Standard 6: Students apply knowledge of people, places, and environments to understand the past and present and to plan for the future.

History
Standard 2: Students know how to use the processes and resources of historical inquiry.
Standard 4: Students understand how science, technology, and economic activity have developed, changed, and affected societies throughout history.
Standard 5: Students understand political institutions and theories that have developed and changed over time.
Standard 6: Students know that religious and philosophical ideas have been powerful forces throughout history.

Mathematics
Standard 3: Students use data collection and analysis, statistics, and probability in problem-solving situations and communicate the reasoning used in solving these problems.
Standard 4: Students use geometric concepts, properties, and relationships in problem-solving situations, and communicate the reasoning used in solving these problems.
Standard 5: Students use a variety of tools and techniques to measure, apply the results in problem-solving situations, and communicate the reasoning used in solving these problems.

Music
Standard 4: Students will listen to, analyze, evaluate, and describe music.

Reading and Writing
Standard 1: Students read and understand a variety of materials.
Standard 2: Students write and speak for a variety of purposes and audiences.
Standard 4: Students apply thinking skills to their reading, writing, speaking, listening, and viewing.
Standard 5: Students read to locate, select, and make use of relevant information from a variety of media, reference, and technological sources.
Science
Standard 1: Students understand the processes of scientific investigation and design, conduct, communicate about, and evaluate such investigation.
Standard 5: Students know and understand interrelationships among science, technology, and human activity and how they can affect the world.

Visual Arts
Standard 5: Students analyze and evaluate the characteristics, merits, and meaning of works of art.

INFORMATION LITERACY STANDARD 3
The information literate student uses information accurately and creatively.

Indicators:
1. Organizes information for practical application.
2. Integrates new information into one's own knowledge.
3. Applies information in critical thinking and problem solving.
4. Produces and communicates information and ideas in appropriate formats.

Rationale:
The student who is information literate:
• Manages information in a variety of contexts.
• Organizes and integrates information from various sources and formats.
• Communicates information and ideas for a variety of purposes.
• Designs and produces authentic products reflecting real world situations.
• Uses information to draw conclusions and develop new understandings.

Alignment: Colorado Model Content Standards

Civics
Standard 3: Students know the political relationship of the United States and its citizens to other nations and to world affairs.

Economics
Standard 2: Students understand how different economic systems impact decisions about the use of resources and the production and distribution of goods and services.

Foreign Language
Standard 2: Students acquire and use knowledge of other cultures while developing foreign language skills.

Geography
Standard 1: Students know how to use and construct maps, globes, and other geographic tools to locate and derive information about people, places, and environments.
Standard 4: Students understand how economic, political, cultural, and social processes interact to shape patterns of human populations, interdependence, cooperation, and conflict.
Standard 6: Students apply knowledge of people, places, and environments to understand the past and present and to plan for the future.
History
Standard 1: Students understand the chronological organization of history and know how to organize events and people into major eras to identify and explain historical relationships.
Standard 2: Students know how to use the processes and resources of historical inquiry.
Standard 3: Students understand that societies are diverse and have changed over time.
Standard 4: Students understand how science, technology, and economic activity have developed, changed, and affected societies throughout history.

Mathematics
Standard 2: Students use algebraic methods to explore, model, and describe patterns and functions involving numbers, shapes, data, and graphs in problem-solving situations and communicate the reasoning used in solving these problems.
Standard 5: Students use a variety of tools and techniques to measure, apply the results in problem-solving situations, and communicate the reasoning used in solving these problems.

Music
Standard 4: Students will listen to, analyze, evaluate, and describe music.
Standard 5: Students will relate music to various historical and cultural traditions.

Reading and Writing
Standard 4: Students apply thinking skills to their reading, writing, speaking, listening, and viewing.
Standard 5: Students read to locate, select, and make use of relevant information from a variety of media, reference, and technological sources.

Science
Standard 1: Students understand the processes of scientific investigation and design, conduct, communicate about, and evaluate such investigation.
Standard 5: Students know and understand interrelationships among science, technology, and human activity and how they can affect the world.

Visual Arts
Standard 4: Students relate the visual arts to various historical and cultural traditions.
Standard 5: Students analyze and evaluate the characteristics, merits, and meaning of works of art.

INFORMATION LITERACY STANDARD 4
The information literate student is an independent learner and pursues information related to personal interests.

Indicators:
1. Seeks information related to various dimensions of personal well-being, such as career interests, community involvement, health matters, and recreational pursuits.
2. Designs, develops, and evaluates information products and solutions related to personal interests.
Rationale:
The student who is an independent learner:
• Actively and independently accesses, evaluates, and uses information of personal interest.
• Constructs meaningful personal knowledge and communicates it accurately and creatively.
Alignment: Colorado Model Content Standards
Civics
Standard 4: Students understand how citizens exercise the roles, rights, and responsibilities of participation in civic life at all levels - local, state, and national.
Foreign Language
Standard 2: Students acquire and use knowledge of other cultures while developing foreign language skills.
Geography
Standard 2: Students know the physical and human characteristics of places, and use this knowledge to define and study regions and their patterns of change.
Standard 6: Students apply knowledge of people, places, and environments to understand the past and present and to plan for the future.
History
Standard 3: Students understand that societies are diverse and have changed over time.
Standard 4: Students understand how science, technology, and economic activity have developed, changed, and affected societies throughout history.
Standard 5: Students understand political institutions and theories that have developed and changed over time.
Standard 6: Students know that religious and philosophical ideas have been powerful forces throughout history.
Mathematics
Standard 3: Students use data collection and analysis, statistics, and probability in problem-solving situations and communicate the reasoning used in solving these problems.
Standard 4: Students use geometric concepts, properties, and relationships in problem-solving situations, and communicate the reasoning used in solving these problems.
Music
Standard 3: Students will create music.
Standard 4: Students will listen to, analyze, evaluate, and describe music.
Standard 5: Students will relate music to various historical and cultural traditions.
Reading and Writing
Standard 1: Students read and understand a variety of materials.
Standard 4: Students apply thinking skills to their reading, writing, speaking, listening, and viewing.
Standard 5: Students read to locate, select, and make use of relevant information from a variety of media, reference, and technical sources.
Standard 6: Students read and recognize literature as a record of human experience.
Science
Standard 2: Physical Science: Students know and understand common properties, forms, and changes in matter and energy.
Standard 3: Life Science: Students know and understand the characteristics and structure of living things, the processes of life, and how living things interact with each other and their environment.
Standard 4: Earth and Space Science: Students know and understand the processes and interactions of Earth’s systems and the structure and dynamics of Earth and other objects in space.

Visual Arts
Standard 4: Students relate the visual arts to various historical and cultural traditions.
Standard 5: Students analyze and evaluate the characteristics, merits, and meaning of works of art.

INFORMATION LITERACY STANDARD 5
The information literate student is an independent learner and appreciates literature and other creative expressions of information.

Indicators:
1. Is a competent and self-motivated reader.
2. Derives meaning from information presented creatively in a variety of formats.
3. Develops creative products in a variety of formats

Rationale:
The student who is an independent learner:
• Seeks a variety of resources in different formats.
• Uses information to connect to larger ideas.
• Identifies and uses media that matches the purpose of the communication.

Alignment: Colorado Model Content Standards

Civics
Standard 3: Students know the political relationship of the United States and its citizens to other nations and to world affairs.
Standard 4: Students understand how citizens exercise the roles, rights, and responsibilities of participation in civic life at all levels - local, state, and national.

Foreign Language
Standard 2: Students acquire and use knowledge of other cultures while developing foreign language skills.

Geography
Standard 6: Students apply knowledge of people, places, and environments to understand the past and present and to plan for the future.

History
Standard 3: Students understand that societies are diverse and have changed over time.
Standard 4: Students understand how science, technology, and economic activity have developed, changed, and affected societies throughout history.
Standard 6: Students know that religious and philosophical ideas have been powerful forces throughout history.

Mathematics
Standard 2: Students use algebraic methods to explore, model, and describe patterns and functions involving numbers, shapes, data, and graphs in problem-solving situations and communicate the reasoning used in solving these problems.
Standard 4: Students use geometric concepts, properties, and relationships in problem-solving situations, and communicate the reasoning used in solving these problems.

Music
Standard 4: Students will listen to, analyze, evaluate, and describe music.
Standard 5: Students will relate music to various historical and cultural traditions.

Reading and Writing
Standard 1: Students read and understand a variety of materials.
Standard 5: Students read to locate, select, and make use of relevant information from a variety of media, reference, and technical sources.
Standard 6: Students read and recognize literature as a record of human experience.

Visual Arts
Standard 4: Students relate the visual arts to various historical and cultural traditions.
Standard 5: Students analyze and evaluate the characteristics, merits, and meaning of works of art.

INFORMATION LITERACY STANDARD 6
The information literate student is an independent learner and strives for excellence in information seeking and knowledge generation.

Indicators:
1. Assesses the quality of the process and products of personal information seeking.

Rationale:
• Evaluates and uses information processes and products.
• Reflects and critiques personal thought processes and products.
• Develops strategies for revision and improvement.

Alignment: Colorado Model Content Standards

Geography
Standard 6: Students apply knowledge of people, places, and environments to understand the past and present and to plan for the future.

History
Standard 2: Students know how to use the processes and resources of historical inquiry.

Mathematics
Standard 3: Students use data collection and analysis, statistics, and probability in problem-solving situations and communicate the reasoning used in solving these problems.
Standard 5: Students use a variety of tools and techniques to measure, apply the results in problem-solving situations, and communicate the reasoning used in solving these problems.

**Reading and Writing**
Standard 4: Students apply thinking skills to their reading, writing, speaking, listening, and viewing. Standard 5: Students read to locate, select, and make use of relevant information from a variety of media, reference, and technical sources.

**Science**
Standard 1: Students understand the processes of scientific investigation and design, conduct, communicate about, and evaluate such investigation.

**Visual Arts**
Standard 2: Students know and apply elements of art, principles of design, and sensory and expressive features of visual arts.

**INFORMATION LITERACY STANDARD 7**
The information literate student contributes positively to the learning community and to society and recognizes the importance of information to a democratic society.

**Indicators:**
1. Seeks information from diverse sources, contexts, disciplines, and cultures.
2. Respects the principle of equitable access to information.

**Rationale:**
The student who is socially responsible:
- Understands that access to information is basic to democracy.
- Seeks information from diverse viewpoints, scholarly traditions, and cultural perspectives to understand issues.
- Recognizes that equitable access to information is a fundamental right.
- Acknowledges contributions of various cultures and disciplines.

**Alignment:** Colorado Model Content Standards

**Civics**
Standard 1: Students understand the purposes of government, and the basic constitutional principles of the United States republican form of government.
Standard 4: Students understand how citizens exercise the roles, rights and responsibilities of participation in civic life at all levels - local, state, and national.

**Economics**
Standard 1: Students understand that because of the condition of scarcity, decisions must be made about the use of resources.

**Geography**
Standard 4: Students understand how economic, political, cultural, and social processes interact to shape patterns of human populations, interdependence, cooperation, and conflict.

**History**
Standard 2: Students know how to use the processes and resources of historical inquiry.
Reading and Writing
Standard 5: Students read to locate, select, and make use of relevant information from a variety of media, reference, and technical sources.

Science
Standard 1: Students understand the processes of scientific investigation and design, conduct, communicate about, and evaluate such investigation.

INFORMATION LITERACY STANDARD 8
The information literate student contributes positively to the learning community and to society and practices ethical behavior in regard to information and information technology.

Indicators:
1. Respects the principles of intellectual freedom.
2. Respects intellectual property rights.
3. Uses information technology responsibly.

Rationale:
The student who is socially responsible:
• Applies principles and practices that reflect high ethical standards.
• Recognizes the importance of equitable access to information.
• Respects principles of intellectual freedom.
• Respects the rights of producers of intellectual property.

Alignment: Colorado Model Content Standards
Civics
Standard 4: Students understand how citizens exercise the roles, rights, and responsibilities of participation in civic life at all levels - local, state, and national.

History
Standard 2: Students know how to use the processes and resources of historical inquiry.
Standard 6: Students know that religious and philosophical ideas have been powerful forces throughout history.

Reading and Writing
Standard 4: Students apply thinking skills to their reading, writing, speaking, listening, and viewing. Standard 5: Students read to locate, select, and make use of relevant information from a variety of media, reference, and technical sources.

Science
Standard 1: Students understand the processes of scientific investigation and design, conduct, communicate about, and evaluate such investigation.
Standard 5: Students know and understand interrelationships among science, technology, and human activity and how they can affect the world.

INFORMATION LITERACY STANDARD 9
The information literate student contributes positively to the learning community and to society and participates effectively in groups to pursue and generate information.

Indicators:
1. Shares knowledge and information with others.
2. Respects others' ideas and backgrounds and acknowledges their contributions.
3. Collaborates with others, both in person and through technologies, to identify information problems and to seek their solutions.
4. Collaborates with others, both in person and through technologies, to design, develop, and evaluate information products and solutions.

**Rationale:**
The student who is socially responsible:
• Works successfully in the broad learning community.
• Uses information and ideas from a wide range of sources and perspectives.
• Collaborates within a group to identify, solve, and communicate information issues.

**Alignment:** Colorado Model Content Standards

**Civics**
Standard 2: Students know the structure and function of local, state, and national government and how citizen involvement shapes public policy.
Standard 4: Students understand how citizens exercise the roles, rights, and responsibilities of participation in civic life at all levels - local, state, and national.

**Economics**
Standard 1: Students understand that because of the condition of scarcity, decisions must be made about the use of resources.

**Foreign Language**
Standard 2: Students acquire and use knowledge of other cultures while developing foreign language skills.

**Geography**
Standard 6: Students apply knowledge of people, places, and environments to understand the past and present and to plan for the future.

**History**
Standard 2: Students know how to use the processes and resources of historical inquiry.
Standard 3: Students understand that societies are diverse and have changed over time.

**Math**
Standard 3: Students use data collection and analysis, statistics, and probability in problem-solving situations and communicate the reasoning used in solving these problems.
Standard 5: Students use a variety of tools and techniques to measure, apply the results in problem-solving situations, and communicate the reasoning used in solving these problems.

**Music**
Standard 4: Students will listen to, analyze, evaluate, and describe music.
Standard 5: Students will relate music to various historical and cultural traditions

**Reading and Writing**
Standard 2: Students write and speak for a variety of purposes and audiences.
Standard 5: Students read to locate, select, and make use of relevant information from a variety of media, reference, and technical sources.
Science
Standard 1: Students understand the processes of scientific investigation and design, conduct, communicate about, and evaluate such investigation.

Visual Arts
Standard 4: Students relate the visual arts to various historical and cultural traditions. Standard 5: Students analyze and evaluate the characteristics, merits, and meaning of works of art.
### Appendix C: Project Look Sharp’s 12 Basic Principles of Media Literacy

1. **Use media to practice general observation, critical thinking, analysis, perspective-taking, and production skills by…**
   - Encouraging students to think critically about information presented in any media message (including the information from their textbooks or the popular media they use at home)
   - Pointing out ways in which media messages might be interpreted differently by people from different backgrounds or groups
   - Fostering observation and general memory skills by asking students to look for specific things when they view videos or read print material
   - Allowing students to go beyond the curricular issue at hand to identify and comment on incidental aspects of a media message (e.g., the characteristics of the people presenting the material, the techniques used to attract attention, and the ways in which advertising and product messages intrude into other types of media content)
   - Fostering creative skills through encouraging the production of messages about a topic

2. **Use media to stimulate interest in a new topic by…**
   - Showing an exciting or familiar video clip or reading a short book or story (fiction or non-fiction) about the topic
   - Having students work in small groups to read, analyze, and discuss a controversial magazine, newspaper, or online article about the topic
   - Using a short video, magazine illustration, or brief article to stimulate discussion, encouraging students to express what they already know or their opinion about a topic
   - Showing students how to search for information about the topic on the Internet
   - Encouraging students to plan and design a media product (a montage of pictures, a video, a newspaper or magazine report, or a web page) about the topic for other students to view

3. **Identify ways in which students may already be familiar with a topic through media by…**
   - Giving examples from popular media content to illustrate what students might already know about a topic or things they might be familiar with that relate to the topic
   - Drawing links between the way a topic is typically treated academically and how it might be used in popular media (e.g., written poetry versus song lyrics or advertising jingles)
• Clarifying the way specific terminology related to the topic might be used differently in an academic sense than it might be in the popular culture

• Building on the intuitive knowledge students have gained from media about the content area (e.g., about story and character development, problem solving, terminology, rhyming)

4. Use media as a standard pedagogical tool by…

• Providing information about the topic through a variety of media sources (books, newspaper/magazine articles, instructional videos, websites), comparing the usefulness of different media, and addressing conflicting information that comes from different sources

• Using media to convey information more richly and effectively than would be possible with a standard classroom discussion or demonstration

• Encouraging students to follow (and write about) current events reported in the media

• Using media content as assigned homework (reading material, searching for information about a topic in newspapers or magazines, etc.)

• Encouraging students to share information in class that they have gotten from various media sources (inside or outside of class)

5. Identify erroneous beliefs about a topic fostered by media content by…

• Analyzing media content that misrepresents or presents false or misleading information

• Identifying misleading ways data are presented in the media (citing statistics incorrectly, drawing false conclusions from misleading data, presenting unclear figures, etc.)

• Identifying false beliefs about a topic that may have come from fictional media content

• Encouraging students to create their own false or misleading media messages (PSAs, commercials, digitally manipulated print advertisements, etc.) and then having them present the message and “debunk” it for the other students in the class

6. Develop an awareness of issues of credibility and bias in the media by…

• Teaching how to recognize the source (speaker) of a media message and the purpose of producing the message, and how that might influence the objective nature of information

• Clarifying the distinction between fiction and non-fiction in different types of reporting

• Identifying ways to decide what are credible sources about this topic within different types of media (e.g., books, magazines/journals, the Internet)
- Emphasizing the importance of getting information from many different sources and how to give weight to different pieces of information (e.g., if the information is based on research or other evidence vs. personal opinion)

- Producing media messages about this topic, emphasizing ways in which bias can be introduced through the words and tone used to present the topic, sources of information used, what is selected to be presented and what is left out, etc.

- Exploring how media messages reflect the identity of the creator or presenter of the message, and how the same message might come across differently if it were presented or created by someone of a different background, age, race, gender, etc.

7. Compare the ways different media present information about a topic by…

- Contrasting ways in which information about a topic might be presented in a documentary, a TV news report, a newspaper article, an advertisement, or an educational children’s program about a specific topic

- Comparing the amount of time/space devoted to a topic in different media from the same time period (and discussing why the difference occurs)

- Analyzing different conclusions that might be drawn by people exposed to information presented in one medium vs. another

- Discussing the strengths of different media to best get across a particular message

- Producing reports about the topic using different forms of media, or manipulating the same information and visuals to convey different messages

8. Analyze the effect that specific media have had on a particular issue or topic historically and/or across different cultures by…

- Discussing the role that the media have played (if any) in the history of this topic (i.e., ways in which the media have changed the nature of this issue or topic)

- Discussing how people of earlier generations might have learned about this topic, what sources of information were available to them compared to sources available to us now, and what difference that would make in people’s lives

- Exploring the level of knowledge about a topic in different cultures and how that knowledge is influenced by the media available

- Identifying media forms that are dominant or available in other cultures that may be seldom used in the United States, and vice versa

9. Use media to build and practice specific curricular skills by…

- Using print media (books, newspapers, magazines, etc.) to practice reading
- Substituting excerpts from existing media content for standard story problems or practice examples (e.g., to practice math skills, to correct grammar, identify adjectives or adverbs)
- Using media production to practice specific skills (e.g., grammar, poetry, math used in timing and proportions of media messages, scientific principles involved in calculating size, distance, and lighting)
- Preparing examples for practicing skills that include media literacy information (e.g., comparing the lengths of news stories about different topics, computing the Nielsen ratings for different shows, analyzing the ways in which two products are described in advertisements)
- Fostering computer skills by encouraging students to search for information on the Internet, develop multimedia projects, and use computers to present information about a topic

10. Use media to express students’ opinions and illustrate their understanding of the world by…

- Encouraging students to analyze media messages for distortions and bias issues of particular interest to them (e.g., messages about sex and gender, messages promoting harmful behaviors, race and age distortions in the “media world” compared to the real world, and advertising targeted to people their age)
- Encouraging students to express their feelings and knowledge through media messages that they produce
- Encouraging thoughtful critiques of various media productions
- Promoting discussion of different points of view about popular media articles and productions

11. Use media as an assessment tool by…

- Having students summarize their knowledge about a topic in a final report that employs other forms of media beyond the standard written report (e.g., computer-illustrated reports, audio or video productions, photographic illustrations)
- Encouraging students to work in groups to illustrate their understanding of a topic by creating mock media productions (e.g., newspapers, advertisements, news reports, live or videotaped skits)
- Presenting, at the end of a unit, a media message (e.g., from a newspaper, magazine, or video) that contains false information about the topic and seeing if students can identify what is correct and what is incorrect in the message
12. Use media to connect students to the community and work toward positive change by…

<table>
<thead>
<tr>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finding collaborative possibilities for projects with community institutions (museums, libraries, galleries) that may involve students analyzing or creating media messages</td>
</tr>
<tr>
<td>Having students contact community service agencies related to the curricular area and offer their assistance with production (e.g., photography, video, design and layout, or computer skills) to help with agency projects</td>
</tr>
<tr>
<td>Encouraging older students to teach production techniques or media literacy principles to younger students in the same school</td>
</tr>
<tr>
<td>Using media forums (e.g., local community access TV, newspapers, and magazines) to communicate messages or share research projects about the topic</td>
</tr>
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CDE ET-IL Planning Criteria for School Districts

A. Needs Assessment

1. What progress has been made towards meeting needs identified in the previous ET-IL plan?

The primary needs identified for the district’s previous ILT1 planning may be summarized as follows:

- Administrative and teacher buy-in regarding the importance of incorporating educational technology and information literacy in all content area learning as part of a district vision for providing meaningful 21st century learning;
- Educator proficiency in incorporating educational technology and information literacy in the day-to-day conduct of teaching and learning;
- Incorporation of educational technology and information literacy in district curriculum;
- Student proficiency in using tools and information skills to enhance learning;
- Equitable and comprehensive program support (including infrastructure, staffing, funding, and scheduling) to facilitate effective implementation of district ILT goals;
Progress in these need areas has been variable. With respect to each identified need, the following may be noted:

• Buy-in — Attention to ILT provided in The Denver Plan by the creation of an Instructional Technology Advisory Workgroup;
• Educator proficiency — Growing (though still limited) proficiency on the part of teachers in the use of tools and information skills to support learning;
• Integration — Redesign (still in progress) of curricula in social studies and science to emphasize inquiry as the primary modality for learning; development of benchmark projects at various schools that provide models for incorporation of educational technology and information literacy in teaching and learning;
• Student proficiency — Growing (though still limited and widely divergent) proficiency on the part of students in the use of tools and information skills to support learning;
• Equity — Installation (not yet completed) of a districtwide broadband communications/data network that enables essentially unlimited access to global learning opportunities and virtual learning and information communities.

2. Describe the needs assessment you conducted to develop this ET-IL plan.
The district conducts needs assessments through a variety of annual surveys:
• Student Intention Survey (to graduating seniors) — which includes questions related to students’ access to, instruction in, and use of ILT tools and resources.
1 In DPS, the “ET-IL” plan and process are referred to as “ILT” (Information Literacy and Technology). The meaning is the same; only the label is changed.
• School Satisfaction Survey — which includes questions related to students’, parents’, and teachers’ satisfaction with their (or their students’) access to, instruction in, and use of ILT tools and resources.
• School Librarian ILT Survey — which includes questions regarding ILT use, access, and proficiencies in individual schools.
• School Technology Representative (STR) ILT Survey — which addresses ILT use, access and proficiencies in individual schools.
• Preliminary Needs Assessment: ILT Proficiencies (incorporated into each school’s School Improvement Planning [SIP] process) — which includes questions regarding the strengths and weaknesses of each school’s ILT integrations.
• Observations and interviews conducted by the DPS Educational Technology Advisory Workgroup, pursuant to its charge under The Denver Plan to craft the district’s ILT plan.
• School Infrastructure Needs Assessment — which obtains information on the number and functionality of each school’s collection of computers and is used to determine district equity allocations for the coming year.

3. Does your needs assessment include the acquisition of technology and information literacy skills?
   Yes.
4. Does your needs assessment include the acquisition of other 21st century skills?  
Yes.

5. Are there specific challenges in terms of service delivery that you face because of changes in student achievement or in the demographics of your district population?  
The district faces ongoing challenges because of the characteristics of its student population. With respect to the ILT plan, the two most significant challenges are:  
• Achievement — ensuring that ILT planning supports the district’s essential focus on student achievement, as measured by success in CSAP;  
• Equity — ensuring that all students have meaningful access to the tools and experiences that will support their full participation in 21st century learning.

6. List the key results of your needs assessment that will drive your goals, objectives and strategies.  
Of the needs listed in the answer to Question 1 of this section, the most substantial is administrative and teacher buy-in. In the absence of district wide commitment to the vision and goals of 21st century learning that incorporates meaningful use of tools and information skills, the district will continue to make, at best, limited and inconsistent progress. This recognition drives the focus of the current ILT plan on buy-in and professional learning. In recognition of this need, the District has created an Instructional Technology Workgroup to address the current status of information literacy and technology programs district wide and to determine what needs to be done in the near and long term to further instructional technology and 21st century learning in DPS.

7. Describe the current infrastructure and list any upgrades. Include the current and proposed level of service.  
Current Infrastructure:  
DPS utilizes a core central data center design (hub and spoke infrastructure). The DPS wide area network (DPSNet) was designed and implemented in a manner similar to a postsecondary campus model. This efficient distribution of all district voice, data, and video services traversing a high-speed backbone provides the most effective and efficient transport for a limited budget. All elementary schools will be fiber-connected to the core, utilizing a Qwest Communications-managed fiber optic pipeline that provides a minimum of 200 Mbps. All secondary and administrative facilities utilize gigabit fiber through the Cable Franchise Agreement that the City & County of Denver and DPS have with Comcast Communications. Having multiple providers enables DPS to build some redundancy into its vast network, significantly enhancing system reliability.  
In every classroom throughout the district, DPS has nine Category Six Ethernet connections and two coaxial video connections. All backbones within each facility are supported by Gigabit fiber optics. These enable the district to provide centralized voice, data (including filtered Internet access), and video services to every DPS classroom. For emergency-preparedness compliance, DPS also has local telecom services at each district facility.
Proposed Upgrades:
Through future General Fund, E-Rate Grants, and General Obligation Bond initiatives, DPS will implement many upgrades and new technologies. Below are a few proposed projects:
• Content Delivery and Media Distribution (On-Demand Digital Content);
• Voice and Video Conference Bridging;
• Parent and Teacher Portal;
• Voice Over Internet Protocol (VoIP);
• Voice and Data Wireless Support;
• Voice and Data Systems End-of-Life Replacement.
Current infrastructure and proposed upgrades are directly supported through E-Rate purchases.

B. Goals, Objectives and Strategies for ET-IL
1. What are your district’s ET-IL goals?
ILT Mission: Use tools and information skills effectively to support student achievement and a comprehensive program of 21st century learning.
Goals:
1. Buy-in — Engender active involvement by stakeholders across the district in the ILT mission and the efforts required to fulfill this mission (anticipated achievement, August 2008);
2. Staff Proficiency — Attain proficiency on the part of district educators in the use of tools, information skills, and collaboration processes needed to support student learning (anticipated achievement, June 2010);
3. Integration — Incorporate tools and information skills into district content curriculum (anticipated achievement, August 2009);
4. Student Proficiency — Attain proficiency on the part of all district students in the use of tools and information skills to support their learning (anticipated achievement, June 2012, in accordance with requirements of federal ESEA legislation);
5. Equity — Ensure that all students and teachers have meaningful experiences in using tools and information skills to support 21st century learning and to develop proficiency in the use of such tools and skills (anticipated achievement, June 2008).
Rationale:
The ILT mission is grounded in the recognition that Denver Public Schools must prepare students to lead fulfilling lives and be effective, responsible citizens in a global, high-tech, information-rich society. The 21st century is, and apparently will increasingly be, an era characterized by rapid and continual changes within a knowledge-based society, in which economic and intrinsic value derive principally from intellectual ability. This era offers challenges and opportunities that are fundamentally different from the Industrial Age. Learning in the 21st century seeks new purposes, new ways of making meaning, and new methods for acquiring information and knowledge. We must transform all formal institutions of learning, from pre-K through college, to insure that we are
preparing students for their future, not for our past. Schools that ignore the trends shaping tomorrow will cease to be relevant in the lives of their students, and will quickly disappear. David Thornburg, “Reading the Future: Here’s What’s on Hand for Technology and Education”, *Electronic School*, 1998, p. A17.

The ILT mission embraces teaching and learning practices that help students prepare for a lifetime of active learning. Areas of particular importance to these practices include:
- Displaying a desire and capacity for learning anytime, anywhere;
- Achieving proficiency in learning and life skills, such as those identified in the report of the Partnership for 21st Century Skills;
- Achieving proficiency in workplace skills, such as those identified in the SCANS;
- Acquiring a capacity to respond to rapid change.

2. How do the ET-IL goals directly support the district goals?

The district is engaged in an exhaustive effort to redesign itself, through The Denver Plan process initiated last fall and continuing over the next two years. The core element of The Denver Plan is that student achievement is the fundamental measure for the effectiveness of all district programs. The plan has three goals, which are listed below.
- Our children will learn from a highly-skilled faculty in every school that is empowered by robust professional development and timely assessment data.
- Highly-trained principals and assistant principals will serve as instructional leaders of the faculty in DPS schools.
- Collaboration among the Denver community and all DPS stakeholders will support our children in a safe, orderly, and enriching environment in every school and classroom.

All five of the ILT plan goals are designed to provide direct support for each of the goal in The Denver Plan. For example, a “highly-skilled faculty” must, among other skills, be proficient in incorporating tools and information skills in all teaching and learning (Goals 2 and 3). While this faculty’s immediate goal is to increase student achievement as measured by CSAP, the faculty’s long-term goal is to prepare students to live meaningful, productive lives as citizens of the 21st century (Goals 1 and 4). To accomplish these ends, this faculty will need equitable and effective program support (Goal 5). The same logic applies to the other Denver Plan goals.

3. Succinctly list your specific goals, objectives and strategies for ET-IL based on the results of your needs assessment. They should clearly support district goals.

See answers to Questions 1 and 2 above. Objectives and strategies are being developed by the Instructional Technology Workgroup (EdTech Workgroup), which was created in 2006 as part of The Denver Plan process and charged with the responsibility of mapping the role of ILT efforts in support of the district’s overall goals. The EdTech Workgroup anticipates completing the work on objectives and strategies by June 2006. In the meantime, the district’s ILT plan is primarily a conceptual framework that shapes the formulation of more concrete planning elements. A preliminary draft of goals and
objectives, based on the EdTech Workgroup’s discussions through April 2006, is provided in the table that follows.

**Draft of ILT Goals and Objectives for Denver Public Schools**

**Educational Technology Advisory Workgroup — April 2006**

**Goal Objectives**

1. **Buy-in** — Engender active involvement by stakeholders across the district in the ILT mission and the efforts required to fulfill this mission (anticipated achievement, August 2008).
   - Change district focus from primarily content-oriented, departmentalized instruction to incorporating learning goals that encompass 21st century literacies.
   - Conduct ongoing professional development for district administrators that provides awareness and understanding of ILT and 21st century literacies.
   - Incorporate 21st century literacies and instructional strategies into teacher evaluation process.
   - Restructure school scheduling to enable teacher collaboration on design and implementation of 21st century learning.
   - Include ILT implementation among the approved practices in the district’s Professional Compensation program.
   - Determine measures for school- and district-accountability for 21st century literacies.
   - Employ in each secondary school a full-time tech teacher and full-time librarian. Based on enrollment, elementary schools may be recommended for .5 teachers in these two areas.

2. **Staff Proficiency** — Attain proficiency on the part of district educators in the use of tools, information skills, and collaboration processes needed to support student learning (anticipated achievement, June 2010).
   - Conduct ongoing, high quality professional development for all teachers regarding ILT and 21st century literacies.
   - Conduct ongoing professional development that emphasizes teacher collaboration in design and implementation of 21st century learning.
   - Conduct ongoing professional development for district administrators that supports teachers’ work in ILT and 21st century learning.
   - Establish district wide network of 21st century learning facilitators.
   - Establish measurable ILT proficiencies for DPS staff.
   - Create ILT-based Professional Development Units for DPS staff.
   - Implement a program of ILT certification for DPS staff.

3. **Integration** — Incorporate tools and information skills into district content curriculum (anticipated achievement, August 2009).
   - Provide common time in each school for teachers to engage in collaborative work on 21st century literacies and learning.
• Provide flexible scheduling for librarians and instructional technology teachers to support 21st century learning work of all staff.
• Revise district content-area curriculum guides to include ILT and 21st century learning.

4. Student Proficiency —Attain proficiency on the part of all district students in the use of tools and information skills to support their learning (anticipated achievement, June 2012).
   • Establish measurable ILT proficiencies for DPS students.
   • Implement a portfolio- and project-based assessment framework for ILT proficiencies.
   • Incorporate ILT proficiencies into the district’s standards-based report card.
   • Implement an ILT curriculum in middle school.

5. Equity —Ensure that all students and teachers have meaningful experiences in using tools and information skills to support 21st century learning and to develop proficiency in the use of such tools and skills (anticipated achievement, June 2008).
   • Institute a continual program for assessing technology needs for support of 21st century learning.
   • Devise and implement a multi-year plan for meeting district and school-based infrastructure needs.
   • Devise and implement a program of “just-in-time” availability of tools for learning.
   • Determine and obtain adequate levels of technology support staff for each school in the district.
   • Implement a program of continual training for technology support staff across the district.
   • Establish and maintain partnerships with the Denver community to provide support for district technology needs.
   • Implement a plan for providing adequate budgetary support for schools technology needs.
   • Determine and provide software throughout the district that support ILT and 21st century learning goals.
   • Provide and maintain a technology infrastructure that enables the following:
     □ Effective communication among all district staff, and between district staff and parents or community members;
     □ Delivery of content through a variety of media;
     □ Immersion in 21st century media (e.g., streaming video, web-based collaboration, and global communication);
     □ Support for globally-networked student learning;
     □ Facilitation of anytime, anywhere learning; and
     □ Extensive compilation and use of data to inform the decision-making of every educator in the district.
4. How will your ET-IL strategies help meet the Colorado Academic Standards?
See answer to Question 2 above: “The core element of The Denver Plan is that student achievement is the fundamental measure for the effectiveness of all district programs.” The primary test for effectiveness are CSAP results, and CSAP is designed to assess how well students meet Colorado Academic Standards.

5. Has your district adopted ET-IL standards for students? Are these locally designed standards and/or are they based on state/nationally-developed standards such as those produced by the Colorado Information Literacy Standards or the International Society for Technology in Education (ISTE)?
The DPS Information Literacy and Technology (ILT) Proficiencies matrix provides a detailed and comprehensive statement of the district’s ILT standards for students, benchmarked across all grade levels. The DPS Proficiencies draw on the Colorado Information Literacy Standards and the ISTE standards. The EdTech Workgroup is revisiting these standards to replace a tool-specific approach with a habits-of-mind and lifelong learning approach, and to add pertinent 21st century skills (anticipated completion, June 2007). The EdTech Workgroup is also devising strategies for ensuring that every student is “technologically literate” (as defined by the district plan). The initial draft of the ILT plan calls for a combination of strategies (see the answer to Question 7 below).

6. What 21st century learning skills are included in your ET-IL goals?
All those identified by the Partnership for 21st Century Skills:
- Critical Thinking;
- Problem Solving;
- Communication;
- Collaboration;
- Creativity;
- Self-Directed Learning;
- Information & Media Literacy;
- Accountability & Adaptability;
- Social Responsibility.

7. How will your district ensure that every student is technologically literate by the time the student finishes eighth grade?
The EdTech Workgroup is still considering options for achieving technology literacy for all students. The current plan calls for a combination of the following strategies:
- Incorporation of tools and information skills in district content curriculum, so that students become increasingly proficient through steadily more sophisticated use of these tools and skills in their content learning. (Projected date for achieving full incorporation in curriculum design: August 2009. Projected date for achieving full incorporation in all teaching and learning: June 2011.)
• Development and implementation of a district wide ILT literacy assessment process that will determine the proficiency of each student at the end of fifth grade. (Projected development: 2006-07 school year. Projected implementation: 2007-08 school year.)
• Development and implementation of a district wide ILT literacy curriculum that will be required in middle school for all students. (Projected development: 2006-07 school year. Projected implementation: 2007-08 school year.)

5 For the elementary-level matrix, see http://ilt.dpsk12.org/elementaryILTmatrix. For the secondary-level matrix, see http://ilt.dpsk12.org/secondaryILTmatrix.

8. Define technologically literate
Proficient in the use of technology and information skills to support learning.

9. Explain your literacy curriculum/approach
Literacy means the use of a tool or skill to make meaning for oneself. Literacy in reading, for example, means not just that one can decode written words but that one can make meaning of text — applying the text to enhance one’s store of knowledge or to accomplish tasks. Accordingly, the district sees technology literacy not as an ends but as a means — a set of skills and habits that support students and staff in the pursuit of knowledge. This understanding of technology literacy suggests that such literacy must primarily be acquired in the daily work of learning; as with reading, students should acquire technology literacy by using it in increasingly sophisticated, meaningful contexts. But the district also recognizes that this ideal will not be immediately attained, nor ever fully realized for each student. Thus, the district’s technology literacy planning calls for both incorporation of tools and information skills in all teaching and learning, as the preferred and primary methodology, and a district wide literacy course in middle school that enables students who have not yet achieved grade-level mastery to get caught up.

10. Identify the measurement process at 8th grade
Given the strategies described in the answers to Questions 7 and 9, successful completion of 8th grade content curriculum will demonstrate technology literacy.

11. Describe how relevant research will be utilized when defining implementation strategies.
The primary research that guides implementation falls in two areas:
• Cognitive science that demonstrates how learners construct knowledge — which guides the development of all district curriculum;
• Professional development studies that identify the most effective methods for supporting professional learning and sustainable change — which guide the development of district plans for implementation of professional learning that achieves proficiency in the use of tools and information skills to support student learning.
12. How does your ET-IL plan ensure that technology will be fully integrated into curriculum?
Goal 1

13. How will your ET-IL plan foster collaboration?
Goal 2

14. Does your ET-IL plan address your teachers, administrators, and other district employees using tools for data-driven decision making?

Goals 2 and 3 invoke the use of tools for data-driven decision-making, in accordance with The Denver Plan’s goal that staff will be “empowered by… timely assessment data”. The ILT plan supports both the professional learning related to data-driven assessment and development of the infrastructure that supports data-driven decision-making district wide. In particular, the district’s implementation of Infinite Campus (IC) has provided additional data elements for teachers to inform their classroom instruction. The IC Gradebook has been implemented in virtually all middle and high schools and will expand to elementary schools during the 2006-7 school year. In addition to student grades, IC also provides teachers with access to student assessment data. As part of The Denver Plan, the district will also purchase a benchmark assessment tool to be administered quarterly, beginning in the 2006-7 school year. An RFP process has been completed, funds have been allocated, and vendor selection is anticipated in May 2006. The student performance data generated by these new benchmark assessments will also be made available to teachers through IC and/or via a vendor-supplied online tool. These strategies are directly supported through the district’s E-Rate purchases.

15. How do you/will you use technology to communicate with or involve parents and community members?

Specific elements of The Denver Plan’s goal of communication and involvement with parents and community are aimed at enhancing these elements of district work; the ILT plan supports both the professional learning related to these elements and development of the infrastructure that supports them. In particular, the district’s implementation of Infinite Campus has provided DPS with a new method for communicating with parents. The IC Portal allows both students and parents to view the student’s attendance, grades, assessments, and transcripts via a secure Web-based interface. These strategies are directly supported through the district’s E-Rate purchases.

16. Identify any additional strategies based on local needs that are not addressed in the questions above.

Additional strategies, specifically supported through the build-out of the district’s infrastructure, include:
• Immersion in 21st century media (e.g., streaming video, web-based collaboration, and global communication);
• Facilitation of anytime, anywhere learning through mechanisms such as
  □ Using older computer hardware for Internet communication and activity;
  □ Wireless connectivity throughout the district to support individualized access to
    the Internet;
  □ Mobile labs for increased flexibility in learning environments and activities;
  □ Multiple computer/video network connections to enhance teacher flexibility in
    the use of tools to support learning.

The district’s infrastructure development plan aims at providing the capability for
implementing research centers in every district classroom. Installation and use of “mini
computer labs” in every classroom will enable students to access the full range of district
and Internet-based information resources in the classroom environment and in support of
their classroom work. These strategies are directly supported through the district’s E-Rate
purchases.

17. What strategies are in place to maintain and procure technology? What goals will be
established to maintain and procure technology?
The district has several funding sources for maintaining and procuring technology. One is
the district’s General Fund where yearly dollars are allocated to technology purchases,
maintenance and upgrades. The district also has yearly Mill Levy funds allocated to
technology purchases, maintenance and upgrades. Additionally, the district has been very
successful in procuring both General Obligation Bond (GOB) funding and E-Rate
funding for specific technology purchases. At this time the district is preparing to go to
the Denver voters for another GOB, possibly in November of 2007. Significant
technology funding will likely be included in this Bond package. DPS will also continue
to pursue E-Rate funding to upgrade and replace the infrastructures purchased with this
funding. Additionally, the E-Rate program is utilized to substantially fund
telecommunications services required to provide voice and Internet capabilities to all
DPS schools.

C. Collaboration and Integration
1. Who are the staff members involved in the following programs:
a. ILT
  □ Kipp Bentley, Director, Educational Technologies
  □ Stevan Kalmon, ILT Coordinator
  □ Dale Downing, Educational Tech Specialist
  □ Lee Hayward, Educational Tech Specialist
  □ Candy Stocker, Educational Tech Specialist
  □ Matthew Woumlahs, Educational Tech Specialist
  □ Jodi Hyatt, Support Staff
  □ Jody Gehrig, Director of Educational Resource Services
b. E-Rate
  □ Bud Bullard
Nancy Connor, Director of Federal Programs

c. Title II-D Consolidated Application

Kipp Bentley, Director, Educational Technologies

Stevan Kalmon, ILT Coordinator

Nancy Connor, Director of Federal Programs

d. Accreditation

Nancy Connor, Director of Federal Programs

Jaime Aquino, Chief Academic Officer

e. Curriculum and Instruction

Susana Cordova, Director of Humanities

Cathy Martin, Director of Science and Math

Loyola Martinez, Director of Special Programs

Debbie Milner, Elementary Literacy Coordinator

Wendy Downie, Secondary Literacy Coordinator

Tamara Acevedo, Elementary Math Coordinator

Jodi Holzman, Secondary Math Coordinator

Jim Short, Science Coordinator

Elma Ruiz, Elementary Social Studies Coordinator

Gilberto Munoz, Secondary Social Studies Coordinator

f. Professional Development

Maureen Sanders, Director of Professional Development

Debbie Hearty, Associate Director

Theress Pidick, Associate Director

g. Planning, Assessment and Research (PAR)

Joy McLarty, Executive Director, PAR

2. What mechanism is in place for collaboration?

Beginning in September 2005, we moved one of our district instructional technology specialists into the district’s Department of Curriculum and Instruction in order to facilitate collaboration on ILT-related planning and professional development. This move has already yielded substantial dividends, whether measured in events (e.g., joint workshops and meetings) or more generally in the breadth and depth of the dialogue. It is now an expectation in each department that significant work must include the input and joint effort of the other. While this strategic collaboration continues at the district level, we are exploring how to extend it. Primary areas of attention will be (1) working with the 300 new building content specialists who will be assigned to district schools and (2) working with the newly created Department of Professional Development and the eight Instructional Superintendents.

3. How does the ET-IL plan foster integration of all of the programs listed above?

The plan envisions the collaborative developments described, and its goals lend themselves to collaboration by closely aligning with the goals of The Denver Plan.
4. How is the administration involved in ET-IL planning and implementation?
Goal 1 of the ILT plan calls for achieving buy-in and commitment on the part of administration, which is prerequisite to achieving the plan’s other goals. This district, like most, is only beginning to understand the transformative role that tools and information skills can play in teaching and learning, and the district’s necessary focus on relatively narrow goals of student achievement makes it difficult to contemplate the extended challenges of 21st century learning. The ILT plan calls for a patiently urgent professional learning campaign that will not only achieve vigorous administrative support and involvement in the other goals of the plan but will also promote a district wide re-vision of teaching and learning.

5. How is the ET-IL plan integrated into curricula?
Goals 3 and 5 of the plan call for incorporation of tools and information skills in all district curriculum. The mission statement makes explicit that the use of these tools and skills must support both student achievement and 21st century learning, and Goal 5 makes explicit the district’s commitment to equity in the use of tools and information skills.

6. How does the ET-IL plan foster increased student achievement?
The ILT plan fosters student achievement through:
• Support for The Denver Plan, which is oriented to increased student achievement (see answers to Questions 2 and 4 in the Goals Section);
• Incorporation of tools and information skills in support of all district curriculum (Goal 3);
• Use of tools and information skills to support 21st century learning (Mission Statement).

7. How does the ET-IL plan utilize and promote research-based strategies?
Research-based strategies for instruction and professional development are implicit in The Denver Plan, and are being made explicit through the 60 advisory workgroups that are devising strategies, curricula, and instructional strategies for implementing The Denver Plan. The ILT plan’s alignment with The Denver Plan makes use of these strategies. In addition, the plan’s goals related to commitment and proficiency (Goals 1, 2, and 4) are grounded in professional development based on research-based strategies (in particular, the use of learning communities for all professional development).

8. Does the district have a means of coordinating ET-IL plans with other program efforts such as Title I (Improving the Academic Achievement of the Disadvantaged), II-A (Preparing, Training and Recruiting High Quality Teachers and Principals) and V (Innovative Programs)?
Coordination comes through The Denver Plan. See the answers to Question 2 in the Goals section.
D. Professional Development

1. How does your staff development plan address the integration of technology and information literacy skills with instruction?

The Mission Statement and Goals 2, 3, and 4 address integration conceptually (see answer to Question 1 of the Goals section), and the draft of objectives (see answer to Question 3 of the Goals section) provides a more concrete outline. The EdTech Workgroup is crafting strategies for staff development, with anticipated completion of a staff development plan by September 2006. The Workgroup’s discussions have emphasized continual, collaborative professional learning built around the design and implementation of curricula that utilize 21st century learning strategies to guide students toward mastery of 21st Century literacies in the context of content-area achievement.

2. Have you adopted technology skills standards for teachers, administrators, or other staff? Are these standards developed based on any nationally-based standards such as the International Society for Technology in Education (ISTE) or other models? How is staff assessed on the effectiveness of training?

Goal 2 calls for the adoption of standards for all district staff; and the EdTech Workgroup is developing standards and assessments, utilizing the district’s existing ILT Proficiencies Matrix (see the answer to Question 5 of the Goals section), Colorado’s Standard 7 for educators, ISTE’s standards for educators, and the standards proposed by the Partnership for 21st Century Skills. The EdTech Workgroup anticipates that it will complete the standards and assessments to be used by August 2007.

3. Are administrators and staff sufficiently trained in the use of technology as a data management tool? How are administrators and staff assessed on their training?

The Denver Plan calls for all staff to be skilled in the use of technology as a data management tool. The standards, assessment, and professional development pertaining to this use of tools are being devised by the district’s Assessment Advisory Workgroup and the district’s newly created Professional Development Unit; these groups are expected to have a program in place by August 2007.

4. Are there particular challenges you are experiencing in providing sufficient and appropriate staff development activities for your staff? If so, what are they, and how does your plan address them?

Adequate resources: These are addressed in part through the support of funds available through Title II-D of the federal Elementary and Secondary Education Act (NCLB). They are also addressed by combining technology-related staff development with content-related staff development — which is not only more appropriate for the work involved but reduces the amount of separate professional development activities required.

Time: This will be addressed through professional learning communities and combining technology-related staff development with content-related staff development.

Buy-in: This will be addressed through the advocacy and professional learning called for in Goal 1 of the ILT plan.
5. How is your technology support staff provided with training?
District-level staff receive training as needed for the support services provided. School-level staff receive training through the district’s School Technology Representative (STR) program.

E. Technology Infrastructure and Support
1. Describe your basic technology infrastructure. Include telecommunications.
DPS utilizes a core central data center design (hub and spoke infrastructure). The DPS wide area network (DPSNet) was designed and implemented in a manner similar to a postsecondary campus model. This efficient distribution of all district voice, data, and video services traversing a high-speed backbone provides the most effective and efficient transport for a limited budget. All elementary schools will be fiber-connected to the core, utilizing a Qwest Communications-managed fiber optic pipeline that provides a minimum of 200 Mbps. All secondary and administrative facilities utilize gigabit fiber through the Cable Franchise Agreement that the City & County of Denver and DPS have with Comcast Communications. Having multiple providers enables DPS to build some redundancy into its vast network, significantly enhancing system reliability. In every classroom throughout the district, DPS has nine Category Six Ethernet connections and two coaxial video connections. All backbones within each facility are supported by Gigabit fiber optics. These enable the district to provide centralized voice, data (including filtered Internet access), and video services to every DPS classroom. For emergency-preparedness compliance, DPS also has local telecom services at each district facility.

2. Identify what you will need to do to provide adequate telecommunications capacity to meet ET-IL and district program needs.
DPS currently complies with the mandated capacity requirements. However, it is imperative that the Federal E-Rate program continues to fund Internet and telecommunications Services for DPS to sustain these critical services.

3. Describe your basic telecommunications services.
DPS has a core Nortel Option 81C Private Business Exchange (PBX) that supports 172 T1’s. These circuits provide voice interconnectivity to all DPS facilities. This system also utilizes 12 Qwest Primary Rate Interface (PRI) digital T1 circuits that provide the Direct Inward Dialing (DID’s) trunks for incoming and outgoing external calls for all elementary schools. All secondary schools have individual PRI T1’s that serve each facility directly from the Qwest Central Office. All schools have Nortel Key System Units (KSU’s) and PBX’s connected together that allow district integration for five-digit dialing, centralized voice mail, call detail recording, centralized long distance services, among other valuable features.

4. Identify what you will need to do to provide adequate telecommunications, internet, and network services to meet ET-IL and district program needs.
DPS currently complies with the infrastructure capacity requirements involved in meeting the district’s ILT and other program needs. However, it is imperative that the Federal E-Rate program continues to fund Internal Connections for DPS to sustain these critical systems.

5. What infrastructure/services are needed to assure district curriculum support?
The infrastructure developments described in the Needs Assessment section support all of the district’s ILT goals, in particular Goals 3 (Integration) and 5 (Equity). The infrastructure provides an essential blend of 21st century information technologies that enable:

- Effective communication among all district staff, and between district staff and parents or community members;
- Delivery of content through a variety of media;
- Immersion in 21st century media (e.g., streaming video, web-based collaboration, and global communication);
- Support for globally-networked student learning;
- Facilitation of anytime, anywhere learning; and
- Extensive compilation and use of data to inform the decision-making of every educator in the district.

6. What infrastructure/services are needed to assure assistive technologies are identified, provided and supported?
DPS has dedicated staff within the district’s Student Services and Special Education Departments who are trained to work with assistive technologies for identified students. Ongoing training, support and funding are allocated to these specialized staff members. Continued funding will be needed to support the work of these staff members.

7. What infrastructure/services are needed to support staff use of assessment and data tools?
Ongoing professional development is provided to teachers on the use of these tools. With the upcoming purchase of a new benchmark assessment tool, funding has been allocated to provide teachers and school administrators in analyzing and using this new student data to inform classroom instruction. Continued funding will be required to purchase benchmark assessments, to train teachers on using assessment data to inform their instruction, and to allocate staff to build and maintain district data repositories for housing and delivering assessment data to teachers and administrators.

8. What infrastructure/services are needed to support delivery of library information services?
The district uses a Web-based library catalog that runs over the district’s network and is accessible from any Internet-connected computer. Additional library resources, such as online subscription databases (EBSCO, WorldBook Online, etc.) are also available to any computer connected to the district’s network. Continued funding is necessary to maintain
the district’s online library system, to provide support staff for the system, and to train teachers in effectively using the system. Because the district’s library system is Web-based, it is dependent on the ongoing maintenance and support of the overall district data network.

9. What infrastructure/services are needed to support network and data security?
Ongoing funding resources for equipment and staff will be required.

10. What level of technology staff support is needed to assure the infrastructure/services identified above?
Several senior level network engineers are required to maintain and troubleshoot DPSNet to ensure the security and stability of the district’s data and network.

11. How does your infrastructure support communication and involvement of parents and community?
DPS voicemail, email, and websites are available 24X7 to all district stakeholders including parents and community.

F. Policies and Procedures

1. Do you have policies/procedures in place for the areas required/recommended? If so, what are some of their key components?
District policies related to ILT development and technology use are:
• EGAEB- Internet Policy
• EGAEC- Network Connections (Connection to DPS Net)
• EGAEA- Electronic Mail
• IJJ-R- Textbook Selection and Adoption Procedures
• IJL- Library Media Program
• IJL-R- Library Media Program Procedures
• EGAD- Copyright Compliance
• EGAD-R-1- Copyright Compliance (Computer Software)
• Temporary Hand Receipt (for equipment loans)
• Internet Searching Alternatives/Web Site Challenge Procedures
• Equipment Donation Procedures
• Library Collection Mapping Instructions
• Library Allocation Form
• Library Mill Levy Implementation Form
• Resource Allocation Methodology for 2003-2004 Mill Levy funding for libraries and technology
All of these policies and documents are posted on the district’s Web site (http://www.dpsk12.org)
2. How are school staff, parents and students kept updated on these policies?
Staff members are notified yearly of these policies via a DoTS Primer provided to schools and departments. Parents and students are notified through school communications.

3. Have you conducted a security audit of your network? How do you secure your network and safeguard the privacy of data?
An annual audit of the district’s network and access to enterprise data is performed by an outside auditing firm (the last few audits have been performed by Deloitte and Touche). This is also required for the district’s financial rating.

4. Do you have an Internet Safety Policy that contains a “technology protection measure” to protect minors from accessing pornographic images or other activities harmful to minors?
Yes. The district employs Internet filtering and the AUP (cited in item #5 below) also covers this protection topic. Additionally, DPS Board Policy EGAEB makes reference to the protection measures in place and the consequences for network/Internet violations. See http://dots.dpsk12.org/techpolicies.

5. Does your district have an Acceptable Use Policy that both students and staff must sign? Do they include reference to copyright and plagiarism?
Yes. See http://dots.dpsk12.org/InternetUseAgreement.

6. Does your district’s compliance with the Safe Schools Act include technology related infractions?
No. Such infractions are precluded by network-based safeguards.

7. Does your district have policies in place that prohibit, limit, or allow student use of personal technologies (cell phones, wireless computing, instant messaging, etc.)?
These policies are determined at the school site level.

G. Budget Description
1. Provide an estimated budget for anticipated ET-IL expenditures for next three years.
The three-year estimated budget is shown in Appendix 1.

2. Please show clear evidence of the district’s ability to maintain the infrastructure.
In addition to line items shown in the budget (Appendix 1), the district has 95 staff who manage, monitor, and maintain the core infrastructure as well as technology staff in each school (School Technology Representatives) who provide on-site support. The district also maintains a cyclical replacement process, which is funded through mill levy and general funds, for replacement of end-of-life enterprise equipment.
3. How will you coordinate ET-IL fund expenditures with funds available from other Federal, State, and local sources?
All funding sources work in support of ILT work in concert in achieving the district’s technology goals.

4. What are your funding sources for budget items?
- General Fund
- Mill Levy
- General Obligation Bond
- Federal E-Rate

5. Are there any particular funding challenges you may face over the next three years that impact your organization’s ability to implement the ET-IL plan? If so, what are they?
The stability of the E-Rate Program, declining student enrollment, declining State funding, potential funding cut (or the complete elimination) of Title IID funding.

6. Show clear evidence of the district’s ability to fund the non-discounted portion of E-rate eligible items.
DPS is fully compliant, as mandated by the SLD to participate in the E-Rate program. DPS budgets for and pays in-full for 100% of the annual Telecommunications Services and Internet Access (Priority One Services). At the end of the annual E-Rate contract year DPS submits for reimbursement of the funding approval percentage from the SLD (usually 76%-78%). This process ensures that the district maintains services in the event that E-Rate funding is not approved, or if the USAC Program becomes jeopardized. Additionally, DPS allocates E-Rate matching dollars for the non-discounted portion of all requested Internal Connections. This is budgeted out of DPS’ General funds, and the balance is rolled over from each previous fiscal year.

H. Action Plan
1. Provide a basic implementation plan for the strategies outlined in the ET-IL plan for your district.
The action plan is being written by the district’s Educational Technology Advisory Workgroup. Completion of all elements is expected by June 2007.

2. Provide a timeline for assuring 8th grade literacy and full integration of technology in the curriculum. Are there benchmarks for these activities?
See answer to Question 7 of Section B (Goals, etc.)

I. Evaluation Plan
1. What performance measures have you incorporated into your plan to determine whether your ET-IL implementation and investments have been effective in achieving your district’s objectives?
The grid below pairs goals with potential sources of evidence to be collected in order to measure performance for the objectives that will support each goal. Although objectives are still being written by the EdTech Workgroup, the evaluation evidence described here provides a foundation for measurement of the objectives. The formal ILT plan is slated for completion in June 2007, after which the objectives can be quantified and paired with more precise performance measures.

**Goal Evidence**

1. **Buy-in** — Engender active involvement by stakeholders across the district in the ILT mission and the efforts required to fulfill this mission. Evidence of formal and informal adoption of ILT, including district policies that incorporate ILT principles, including The Denver Plan and teacher contract language. Evidence of implementation of policies and practices through observation and surveys.

2. **Staff Proficiency** — Attain proficiency on the part of district educators in the use of tools, information skills, and collaboration processes needed to support student learning. Curriculum guides, lesson plans, teacher self-assessments, and classroom observations.


4. **Student Proficiency** — Attain proficiency on the part of all district students in the use of tools and information skills to support their learning. Student assessment data.

5. **Equity** — Ensure that all students and teachers have meaningful experiences in using tools and information skills to support 21st century learning and to develop proficiency in the use of such tools and skills. Internal district audit of educational technology and information literacy program support, including professional development opportunities and level of participation. Student participation data and surveys.

2. **How often will you evaluate progress on your district’s plan?**

The district will conduct and disseminate an annual evaluation, with an interim mid-year evaluation for use by the EdTech Workgroup and relevant district departments.

3. **Who will do the evaluation?**

The Department of Technology Services (DoTS) will lead the evaluation effort, under the direction of Kipp Bentley. A professional evaluation firm, The Public Good, Inc., will facilitate district stakeholders, including the Educational Technology Advisory Workgroup, and members of several departments (DoTS, Curriculum and Assessment, Educational Resource Services) in developing the **internal capacity** to gauge progress on meeting objectives and develop strategies for overcoming obstacles.

4. **Who will be responsible for documenting the evaluation process?**

Kipp Bentley, with input from ILT staff, the EdTech Workgroup, and the external evaluator/consultant.
5. Show evidence that you have evaluated your district's previous plan and include the key points or findings of this evaluation in your new plan. See answer to Questions 1, 2, and 6 of the Needs Assessment section.

6. Does your plan include evaluation of student assessment data? Evaluation of student assessment data is a central component of The Denver Plan, and the district’s work in this area will be incorporated into the ILT plan. See answers to questions 2 and 14 of the Goals section.

7. How will you evaluate the technology infrastructure and telecommunication services in your district? The district will conduct a technology/telecommunications audit in a representative sample of schools. Surveys of principals, teachers, students, and parents will be conducted within each school selected, and a team of site visitors will conduct site visits and classroom observations to observe how technology is used in the classroom and how information skills are employed in classroom situations. These surveys and observations will be triangulated and assessed against multiple measures of ILT standards, including Colorado Standards for Information Literacy, 21st Century Skills, and ISTE National Educational Technology Standards. The audit will include an assessment of how the district is performing with respect to the various components, as well as recommendations for accelerating progress in areas needing attention. The district conducts ongoing evaluation of the network infrastructure by monitoring a variety of performance metrics (e.g., bandwidth utilization, problem reports, and system downtime). These metrics enable the district to make continual adjustments in hardware, software, and tech support that improve system performance. The district also monitors the quantity and quality of staff training in order to verify that all tech support staff (including all School Technology Representatives) have current knowledge regarding network, hardware, and software installation and maintenance.
**Appendix E: Eagle County School District Educational Technology & Information Literacy Plan 2006-2009**

Approved by the Board of Education April 12, 2006

EAGLE COUNTY SCHOOL DISTRICT RE50J  
757 East Third Street  
Post Office Box 740  
Eagle, Colorado 81631  
http://eagleschools.net

**Superintendent**  
John Brendza  
*****

**Assistant Superintendent**  
Karen Strakbein  
*****

**Directors of Education**  
Secondary – Mike Gass  
*****

**Director of Technology**  
Rick Spitzer

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EAGLE COUNTY SCHOOL DISTRICT TECHNOLOGY INFORMATION
LITERACY PLAN 2006 - 2009
The Eagle County Schools Technology Plan should not be considered a static document. Changes in technology, curriculum, assessment, and state or federal regulations will result in continual modifications of this document. The plan will be reviewed annually by Eagle County Schools (ECS) to meet the changes needed.

INTRODUCTION
Who We Are
The Eagle County Schools educates over 5,400 students in preschool through 12th grade. Student enrollment has increased an average of 3.5% each year since 1997. The District’s student population reflects the diversity of Eagle County’s geography as well as its ethnicity, languages, cultures, and economics.

Geographic Diversity
Eagle County is well known because of its breathtaking scenery and world class skiing at Vail and Beaver Creek resorts. However, much of the county is rural and was founded through ranching, mining, and railroad ventures. The School District encompasses approximately 1,700 square miles and includes at least ten diverse communities. There are eight elementary schools, four middle schools, two high schools an alternative high school on two sites and a grade K-8 Charter School.

Ethnic Diversity
According to the 2006 student count, 47% of the student population was Hispanic while the Colorado average percent Hispanic enrollment was 26%. Of the Hispanic students, 8% are classified as immigrants (Not born in the US and have attended school in the US for less than 3 years.) and 73% are English Language Learners.

Socioeconomic Diversity
Because of the seasonal, resort industry related employment, there is considerable student mobility throughout the District. During the 2003-04 school year, mobility was estimated at 44.6% District-wide. This figure ranged from 8.52% at Eagle County Charter Academy to 83.1% at Red Canyon High School. Also because of the seasonal nature of employment, many families are temporarily unemployed for part of the year. The percentage of students qualifying for free or reduced lunch was 30.6%. This percentage ranged from 0% at the Eagle County Charter Academy to 81% at Avon Elementary. As a result, six of the eight elementary schools qualify for Title I service.

The District’s PPOR for the General Fund for 2004-05 is $6,382. The assessed value of the District is $1,848,546,760. Because of the School Finance Act, we are limited in regard to the amount we can collect through property taxes.

The cost of living in Eagle County is higher than in most other school districts throughout the state. The monthly cost of housing in Eagle County has been estimated to be approximately $400 more than in the Denver area. The average price of a single-family home in Eagle County exceeds $250,500 while the average statewide was $118,000 in 1999.
District Employees

The District employs 440 licensed teachers, 245 classified staff, and 26 school administrators who work in the 16 school buildings and the Central Office. About 38% of the staff has been with the District 3 years or less (on the probationary salary schedule) and the turnover rate of 10%, is above the state average. The average teacher salary is $45,406, compared to the state average salary of $38,157.

A. Needs Assessment

Conducting a needs assessment involves identifying the ET_IL program needs within the larger context of organizational needs and goals. An evaluation of the progress of the previous ET_IL plan was completed. A committee composed of teachers, media specialists, principals, and tech department staff have reviewed the previous plan and made suggestions to future revisions of the plan.

Surveys completed by participants of staff development programs were used to determine program quality and how well the program’s goals were met. Course offerings were modified to meet the needs of staff.

The District also conducts a School Staff survey. This survey included technology components in addition to standards assessment and school climate. The results are compiled by the Directors of Education.

Discussions with principals and a random selection of teachers were also used to determine what problems have been faced and what recommendations could be applied to solutions.

A parent survey of home Internet use was completed to determine training needs for parent and student use of PowerSchool. This was used to plan the implementation of the product and the training needed by parents and students.

In the fall of 2003 the District completed a survey of all sites to determine what hardware existed in the District. This survey summarized existing hardware, tracked growth and examined equity. The results of that survey produced information that was used to develop a District Reallocation process that is still in place today. A review of the needs assessment included an evaluation of that process.

The Reallocation Plan is used to determine the number of computers in each school based on the number of teachers, staff and students. Each summer computers are moved within the District to adjust to changes in the number of students and teachers. This places some restraints on what principals can do with and where they can place the building hardware. Because our greatest achievement gap is seen in the secondary schools, the ratios of computers to students are: high school 3:1; middle school 3.5:1; elementary 4:1.

As our Hispanic population continues to grow, the District continually faces the challenge of identifying and funding purchases of appropriate software to meet their learning needs.

The ECS understands the need to keep our vision focused on helping students be flexible. Technology changes will clearly drive the next set of trends and skills students will need to complete in the post secondary world.
This plan, as all technology plans must remain pliable and dynamic to meet the needs of students and staff. The ECS needs assessment did not address the acquisition of 21st Century Skills. A new assessment is being developed to address these skills.

The results of assessments indicate that teachers are not fully aware of the standards and expectations for technology. Until this year these have not been clearly outlined and communicated to staff. Currently the curriculum adoption plan and the staff development plans do not specifically address the requirements of NCLB and 21st Century Skills. The planning will have the requirements addressed in a way that can be successful and easily assessed in the future.

B. Goals, Objectives and Strategies for ETIL
ECS has established the following ET_IL goals.

Technological and information literacies incorporate the use of tools, information, and resources to solve problems, complete tasks, and communicate ideas. Students and staff must be able to exhibit and demonstrate essential skills from established and evolving technologies, which will be integrated into content curriculum and teaching. The District must prepare students for success in our rapidly changing information driven society for them to be successful in future employment and higher education.

It is the District’s vision to enhance the application of technology and information literacy skills for its staff and students, while providing the resources for a diverse and quality education. Regardless of economic status, all students and staff will be afforded the opportunity to access and incorporate information resources. Mastery of these lifelong learning skills will lead to increased productivity, adaptability, creativity, and achievement.

These ET_IL goals directly support the District goals. Technology should allow learning or demonstration of an achieved skill set to be showcased with certain seamlessness. ECS technology should enable, enhance and encourage further learning opportunities for the student and the teacher. Timeliness of data and ease of access to real time information and programs will be critical in closing the achievement gap in our demographically diverse district. The primary goal of the District is that 80% of students are proficient/advanced on CSAP. The curriculum revisions that are currently taking place integrate the assessment frameworks into the curriculum.

a. ETIL Integration with Curriculum, Instruction, and Literacy

It is the District’s vision to enhance the application of technology and information literacy skills for its staff and students, while providing the resources for a diverse and quality education. Regardless of economic status, all students and staff will be afforded the opportunity to access and incorporate information resources. Mastery of these lifelong learning skills will lead to increased productivity, adaptability, creativity, and achievement.

The specific goals, objectives, and strategies for ET_IL are based on the results of the District needs assessments and support District goals. Integration of information
literacy and technology into the curriculum will further the District’s vision through the following key elements:

**Learning Community and Achievement:**
- improve student achievement through integrated curriculum and assessment tools;
- create engaging inquiry driven learning experiences for students and staff;
- enhance professional development through cluster group and teacher collaboration, coaching, and evaluative feedback; enhance professional development through the use of tech teachers
- support student and staff collaboration to create a dynamic learning environment;
- provide students the needed skills for a seamless transition to employment and higher education;
- provide communications and research tools for students, staff, and the public;
- apply innovative instructional and administrative technologies to driving a more effective and efficient work environment.

**Social Responsibility:**
- appreciate literature and other creative expressions of information;
- strive for excellence in information seeking and knowledge generation;
- recognize the importance of information to a democratic society;
- practice ethical behavior in regard to information and information technology;
- pursue, generate, and communicate information individually and in groups;

**Technological and Information Literacy:**
- access and process information efficiently and effectively;
- evaluate information critically and competently;
- synthesize information accurately and creatively;
- pursue information related to personal interests;
- develop an understanding of relationships within and between systems;
- develop an understanding of visual communication and design elements;
- select appropriate technology tools to solve problems.

The District’s ET IL strategies help to meet the Colorado Academic Standards. The current technology efforts of the ECS currently support the goal of having every student work toward proficiency in all areas. The curriculum is revised and updated in all content areas every five years. During the adoption process support software for teachers and students are piloted and aligned to meet the high level of rigor expected for classroom application of the content. The problem that arises is that ECS is not always able to fund the purchases of the software.

ECS has adopted ET_IL Standards for students at the local level. These are based on state and nationally developed standards such as those produced by the Colorado Information Literacy Standards or the International Society for Technology in Education (ISTE)

**The District has Adopted the Colorado Information Literacy Standards**
See Appendix B.
THE 21ST CENTURY LEARNING SKILLS
The 21st century learning skills that are included in the ET_IL goals are that ECS Students who are technologically literate will:

- Demonstrate a sound conceptual understanding of the nature of technology systems and view themselves as proficient users of these systems.
- Understand and model positive, ethical use of technology in both social and personal contexts.
- Use a variety of technology tools in effective ways to increase creative productivity.
- Use communication tools to reach out to the world beyond the classroom and communicate ideas in powerful ways.
- Use technology effectively to access, evaluate, process, and synthesize information from a variety of sources.
- Use technology to identify and solve complex problems in real-world contexts.

1. Information and Communication Skills:
   Information & Media Literacy:
   - Analyzing, accessing, managing, integrating, evaluating, and creating information in a variety of forms and media.
   - Understanding the role of media in society.

   Communication Skills:
   - Understanding, managing and creating effective oral, written, and multimedia communication in a variety of forms and contexts.

2. Thinking and Problem-Solving Skills:
   Critical Thinking & Systems Thinking:
   - Exercising sound reasoning in understanding and making complex choices, understanding the interconnections among systems.

   Problem identification, formulation and solution:
   - Ability to frame, analyze and solve problems.

   Creativity and intellectual curiosity:
   - Developing, implementing, and communicating new ideas to others, staying open and responsive to new and diverse perspectives.

3. Interpersonal and Self-Directional Skills
   - Interpersonal and collaborative skills: Demonstrating teamwork and leadership: adapting to varied roles and responsibilities; working productively with others; exercising empathy; respecting diverse perspectives.
   - Self Direction: Monitoring one's own understanding and learning needs, locating appropriate resources, transferring learning from one domain to another.
   - Accountability and Adaptability: Exercising personal responsibility and flexibility in personal, workplace and community contexts; setting and meeting high standards and goals for one's self and others; tolerating ambiguity.
• Social Responsibility: Acting responsibly with the interests of the larger community in mind; demonstrating ethical behavior in personal, workplace and community contexts.

THE DISTRICT DEFINITION OF TECHNOLOGICALLY LITERATE

A person who is technologically literate has the ability to select and responsibly use the appropriate technology to communicate, solve problems, and access, manage, integrate, evaluate, and create information to improve learning in all subject areas and to acquire lifelong knowledge and skills in the 21st Century.

ECS students will continue to outpace their counterparts in the state due to the sophistication of the technology available on a daily basis to support the curriculum and learning targets in the curriculum.

Strategies
ECS continues to implement and coach students on the proper application of technology currently available. Integration and demonstration is only limited by the ability of the instructor in a given content area. Continual staff development will create new applications and opportunities for students in the ever-changing technology market. The Technology Curriculum Committee will develop a technology assessment for 8th grade students, by the 2006-2007 school year. Beginning with the 2006-2007 school year, this assessment will be given to all eighth graders as a pre-assessment to determine skills needing development, then as a post-assessment to determine if the skills have been met. As part of the District’s Teacher Advancement Program (TAP) student needs are identified and then research is conducted to find the most effective strategies to meet those needs. The research and strategies are shared in clusters (groups of 4 to 8 teachers) and demonstrated by the master/mentor teachers. Teachers next plan how the strategies are to be integrated into their instructional practices. Master and mentor teachers coach the teachers as these research-based strategies are implemented in the classrooms. Vendors and curriculum designers are including technology in the packaging of new materials. Currently, ECS is revising curricular areas to include URLs and sites that encourage and enhance the learning within the walls of our schools. Teachers are contributing and networking to support each other with resources they have found or have developed. Through the work of the Tech Curriculum Committee the scope and sequence will define the exit expectations for all students. When this is finalized both classroom teachers and technology teachers will be responsible to insure students are developing these skills.

b. ETIL as a Driver for Collaboration

The Teacher Advancement Program (TAP) uses a model that includes teacher collaboration activities called clusters. During clusters, teachers view demonstrations of lessons. Clusters in ECS are the foundation for fostering collaboration.

A cluster is a group of teachers, including technology teachers, led by a master and/or mentor teacher, whose focus is to learn and apply research-based, field-tested instructional strategies to increase student achievement.
Ongoing, applied professional growth takes place two or three times per week within cluster group meetings. Based on the best available student data, cluster groups are specific, focused, and strategy-driven. Their general purpose is to systematically implement the school plan for increasing student achievement at the classroom level. Clusters achieve this goal through the introduction, preparation, and continual reinforcement of instructional best practices for classroom use. Student work is consistently referenced to determine the success of these strategies and to identify additional areas of need.

Cluster groups are led by the master and/or mentor teachers. During Leadership Team meetings (principals, master and mentor teachers and for this planning, the technology teacher) cluster goals and long-range plans, which include how technology is to be integrated, are developed to ensure alignment to the school plan. As cluster leaders, it is master and mentor teachers' responsibility to ensure that individual meeting goals/activities connect to the school plan and are supported with follow-up for proper classroom application. The TAP Leadership Team (principal, master and mentor teachers) provides cluster group oversight, regularly reviewing each group's goals, activities, outcomes, and follow-up in the classroom. Eagle County’s email system also supports collaboration. Teachers and staff belong to various conference groups. These conferences allow them to ask questions, share information, and direct activities.

c. Increase/Improve Technology Access for Teachers and Students

Four-Year Technology Rotation Plan

The District has in place a Four Year Technology Rotation Plan. The objectives are to:

• replace all computers in the District so that no computers are used for more than 5 years.
• replace network printers, network hardware, and servers on an as needed basis.
• simultaneously replace hardware with a common use between sites and across the District.
• simultaneously replace and/or upgrade the District suite of software.
• standardize computer use across the District.

**Rationale:**

• Allows scheduled replacement of hardware as it becomes obsolete.
• Provides for cost efficient support through installation of compatible hardware and software at all locations that are involved in a similar activity.
• Reduces technical support through use of standardized configurations.
• Reduces testing and training issues for technicians.
• Equalizes technology in similar sites or similar use across the District.
• Allows for better vendor negotiations due to large quantity purchases.

**Notes:**

• The plan will not add any new hardware to District inventories.
• Replaced hardware will be removed from the building.
• Hardware needed for new positions or projects must first be purchased by the responsible sites.
• Hardware that is vandalized, stolen or lost will not be replaced.
• Computer software will only include the installed District suite and products licensed by the District.
• Sites do not have an option for the use of these funds for any other building needs or for building defined projects.
• Hardware may be moved by the Department of Technology from some buildings to others to help balance computer types, but the number of computers in a building will remain the same.
• Rotation funds were approved by the school board for this specific purpose. These funds will not be used for any other purpose.

Equipment and Software Standards

Technology hardware, software and network systems are becoming more complex and interrelated each year. In addition, the funds to support and maintain these items are limited. Technology personnel must have the appropriate time and training to support the hardware and software. To work within these limitations the District standardizes hardware, software and network systems.

Any site that chooses to purchase items not on this hardware and software standards list assumes all responsibility for the installation, operation, training and maintenance of the item. Items not on this list may not be connected to a building Local Area Network or the District Wide Area Network without specific prior approval from the Department of Technology.

Data from the survey was used to begin this plan to update the inventory on a four-year rotation basis. The rotation plan was implemented in the 2002-2003 school year.

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Technology Reallocation Plan

In the spring of 2005 the District completed a survey of all sites to determine the hardware ratio that existed in the District’s schools. The results of that survey produced information that was used to develop a District process to balance hardware.

Objectives:
• Use a set District wide computer ratio in all schools.
• Modify the ratio should any specific District curriculum need be identified.
• Manage computer ratios as building populations change

Rationale:
• Equip schools in similar sites, grade levels or use across the District with equivalent capabilities.
• Reduce inequities created by fluctuating student populations.

Notes:
• The plan was implemented beginning in the summer of 2005.
• No new hardware will be added to the inventory.
• Establishes a set number of staff computers.
1 computer for each certified staff, 1 computer for each Head Secretary, Secretary, Registrar, and Attendance Secretary.
• Balance of District inventory uses remaining hardware and is distributed based on a variable ratio.
  3:1 ratio in High Schools,
  3.5:1 in Middle Schools,
  4:1 in Elementary Schools.
• Adjusts ratios over 3 school years using the established four year rotation plan with adjustments being made in the summer before each of the next 3 school years.
• Adjusts ratios across the District based on student projections for the next school year.
• The adjustment is corrected in the fall, if there is a major error in the student projection.
• Uses Cap Reserve funds to purchase network equipment.
• Computers are not moved into a building if the building cannot make the accommodation.
• If an increase in student population occurs, the student to computer ratio will be maintained as close as possible to the established ratio.
• The plan replaces and upgrades the District suite of software, but not building or course specific software needs.

The ECS budget provides ongoing funding to support this plan.
In the spring of 2006 the District began work through an Educational Specifications Committee. This committee will work with the District’s hired consultants in a process to identify standards for the District’s high school programs, including technology.

d. Parental Involvement and Communication

Parents have many options to communicate with the District. PowerSchool is the District’s Student information system. It is a web-based application that is accessed through a secure Internet connection. Parents can use the system to help them find out what’s going on at their child's school anytime, anywhere! Students also have access to allow them to locate the information they need, such as homework assignments. With PowerSchool, they can read the daily bulletin, catch up on their class assignments and check out their grades. School personnel, parents, and students no longer wait for progress reports or other updates for the most current information. Teachers and administrators add the most current grades, attendance, and other data to PowerSchool so that important information and reports are always available. Parents can click on links that allow them to email teachers. A parent can also configure their PowerSchool preferences to email them information when specific events occur.

The District’s email system (@eagleschools.net) allows teachers and administrators to communicate with parents and other stakeholders quickly and efficiently. Conferences and list-serves are also in place to improve communications with specific groups. Parents can obtain the specific email addresses of teachers and administrators through PowerSchool or the District website.

Both High Schools utilize an Auto Dialer, called Parents Choice, to provide attendance and other information to parents. The system calls parents and provides recorded information pertinent to the student.
The District has a full time web master and the District’s website provides a wide range of data to parents, community members and others. The District website is at http://eagleschools.net.

There are also additional strategies available at some locations.
- Neighborhood Net is an after school program that allows students and parents to use computer labs in the schools. These labs are staffed by a District employee who can provide resources and technical support.
- A dual enrollment program with Colorado Mountain College and remediation programs provide services to students at both ends of the spectrum.
- NovaNet provides an option for advanced work as well as for credit retrieval.
- Keystone is an on-line school for advanced learners that provides independent study programs to students from many educational backgrounds and with unique needs.
- Colorado Online Learning provides affordable, high-quality, standards-based, supplemental and fulltime online coursework for Colorado Schools needing credit retrieval, advanced courses, curriculum enhancements and/or to resolve scheduling conflicts.

**e. Technology for Data and Assessment Support**

In ECS, data-driven decision-making is a significant component for planning instruction and for student assessment.

The Northwest Evaluation Association (NWEA) assessments are used by educators to ensure that every student is learning and growing. This includes all students from at-risk to high achievers. Assessments are administered at the beginning and end of the year. Some schools choose to do a mid year assessment.

The District also utilizes Alpine Achievement Systems to provide District administrators, principals, and teachers with Internet-based tools that transform student assessment data into useful information to guide instructional decision making to improve student achievement. CSAP data and other assessments are utilized by Alpine Achievement Systems, The Educational Value-Added Assessment System (SAS EVAAS), methodology developed by Dr. William L. Sanders and his colleagues at the University of Tennessee is also utilized. Value-added assessment follows the progress of individual students. It provides a more precise and reliable way to measure schooling influence by cleaning and analyzing student data to create a powerful and more accurate diagnostic tool as a precise measurement of student progress over time.

Renaissance Learning programs are used as well. Accelerated Reader (AR) is a reading management software program that provides teachers with an easy and effective way to monitor all forms of guided reading practice. Teachers get detailed, objective data to target instruction and ensure success for every student, regardless of level.

STAR Reading and STAR Math helps determine the math level of each student, measure individual and class growth and forecast results on standardized tests. Teachers can obtain norm-referenced scores immediately.
STAR Early Literacy is a computer-adaptive assessment that determines the early literacy progress of pre-K through 3rd grade students. The results allow teacher to intervene more quickly and provide effective instruction during the student's critical years of literacy development.

SuccessMaker is a learning environment that offers a combination of management system, assessment, and curriculum resources to provide administrators, teachers, and students with tools to improve academic performance in language arts skills. The program is very beneficial to second language learners.

Study Island is a CSAP Test Preparation Program for math, reading, writing, and science. Students take a pre-test, complete all content groups covering all the CSAP Assessment Frameworks and pass a post-test in order to complete the program. Study Island records statistics for each user session in a real time report card. Teachers have access to a private page where they can view results for each student. Real-time reports help teachers measure progress and identify deficiencies as they relate to the specific expectation.

PowerSchool, the District’s student information system, provides parents with current grades and assignments, allowing them to become involved in their child’s education. Students also access the system to review grades and assignments.

The District also utilizes Lexile scores with Destiny, the District library system, to prescribe books that best meet student reading abilities.

Reading assessment information and Individual Literacy Plans are housed in FileMaker Pro databases. Teachers have easy and real time access to a student’s reading data and literacy goals using these databases. Also housed in a FileMaker database is up to date information on the language levels of all our second language students.

C. Collaboration and Integration
Collaboration among participants, identification of shared program and curricular goals and common strategies for achieving desired educational results advances ET_IL integration. Collaboration occurs best in an environment where the administration, library, and technical professionals support and encourage cross-program activities that involve the:
• improvement of education services;
• effective use of technology;
• acquisition of information literacy skills;
• application of all to meet student achievement standards.

It is important that ET_IL planners coordinate with District personnel responsible for Title programs and the Consolidated Grants Application, as Title II-D funds are routinely used in support of other Title efforts (i.e. District purchases reading software with Title II-D funds to support Title I activities). The ET_IL planning process must be in collaboration with Title programs to be approved. 50% of Title II-D funds are spent on professional development.
The following staff members participate in technology planning:
Linda Birk - Media Specialist
Gary Burns - Secondary Instructional Coach
Marilyn Earle - Tech Teacher
Curt Fischer - Technology Integration Specialist
Mitchell Forsberg - Elementary School Principal
Nancy Gamble - Technology Teacher
Mike Gass - Director of Secondary Education
Amy Guercio - Technology Teacher
Jackie Hijmans - Media Specialist
Dianna Hulbert - Middle School Principal
Nancy Lindbloom - Technology Teacher
Penny LoFarro - Media Specialist
Carolyn Neff - Director of Elementary Education
Amy Niswanger - Media Specialist
Melisa Rewold-Thuon - ELA Instructional Coach
Barbara Romersheuser – Master Teacher/Media Specialist
David Russell - Technology Teacher
Chad Sloniker - Technology Teacher
Shiloy Sanders - Elementary Instructional Coach
Suzanne Smith - Technology Teacher
Rick Spitzer - Director of Technology

b. E-Rate
Rick Spitzer – Director of Technology
Karen Strakbein – Assistant Superintendent/Director of Finance

c. Title II-D Consolidated Application
Mike Gass - Director of Secondary Education
Carolyn Neff - Director of Elementary Education
Melisa Rewold-Thuon - ELA Instructional Coach

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d. Accreditation
John Brendza – Superintendent
Mike Gass - Director of Secondary Education
Carolyn Neff - Director of Elementary Education

e. Curriculum and Assessment
Mike Gass - Director of Secondary Education
Carolyn Neff - Director of Elementary Education

f. Professional Development
Mike Gass - Director of Secondary Education
Gary Burns - Secondary Instructional Coach
Curt Fischer - Technology Integration Specialist
Shiloy Sanders - Elementary Instructional Coach
Traci Wodlinger - District TAP Coordinator.
g. Technical Professionals
Rick Spitzer – Director of Technology
Stan Lake – Network Systems Engineer
Justin Winstead – Network Systems Specialist
Melody Lueders – Student Information System Specialist
Marta Ellsworth – Student Information System Data Assistant
Diana Valdez – Technology Support Specialist
Nancy Wilmers – Technology Support Assistant
Libby Talukder – Technology Support Assistant
Cameron Meeks – Technology Support Assistant
Steven Hodge – Technology Support Assistant
Jason Butters – Technology Program Specialist
Derrick Breta – Electronic Systems Specialist
Emily Barela – Secondary Support Specialist

Collaboration Mechanisms
The following mechanisms are in place for collaboration.

• The Teacher Advancement Program (TAP) uses a model that includes teacher collaboration activities called clusters. During clusters, teachers view demonstrations of lessons. Clusters in ECS are the foundation for fostering collaboration.
• The District’s Administration Team, which is composed of Principals and District Office Administrators collaborate at bi-monthly meetings and at west end and east end meetings.
• In each school the Instructional Leadership teams (ILT) collaborate on a regular basis.
• The District’s email conferences provide many collaborative opportunities.

   The ET_IL plan fosters integration through all of the programs listed above. All of these mechanisms have a unifying effect on all areas of curriculum.

   The current ECS administration at the District and school level recognize the value of technology and the needs both teachers and students have for improving their skills. A significant part of the District budget is allocated to the development and maintenance of the technology efforts.

   Accessibility to technology allows students the opportunity to seek more resources and allows students to link with the world from a single access point.

   Teachers utilize many more research opportunities online. While print materials are still promoted, online resources are cheaper and many times more recent. Additionally, multiple students can research a like topic and have many different sources to compare facts and opinions.

   As a small district, ECS is continually maximizing the opportunity leverage multiple funding sources for a common achievement goal. As the Consolidated Grant is being developed, the long-range plans of the District, including the ET_IL plan, are utilized.
D. Professional Development

Professional development strategies are in place for District staff. Integration of technology and information literacy with curriculum and school management and in the use of technology for delivery of library services and access to information is included.

Technology integration occurs in many areas. At the end of each year the District hosts a Technology Academy. Many sessions are held in a smorgasbord environment and each addresses needs that have been identified by the staff.

Media specialists, the tech integration specialist, instructional coaches and others address the specific needs of staff members on an on-call basis.

The District’s library program, called Destiny, provides access to many technology resources.

The District subscribes to a service called Atomic Learning. Atomic Learning provides software training using a unique, just-in-time approach. The service has a library of thousands of short tutorials on dozens of applications focused on answering the common questions that teachers, students and anyone else may have when learning software. The tutorials and other valuable educational resources are easy to access whenever and where ever a person may need them. Each of our schools has at least one computer lab as well as computers in classrooms. These computers are used to teach information literacy skills. They are also utilized in integrating technology into the curriculum.

A minimum of 50% of Title II-D funds is spent on professional development.

Staff Technology Skills

The District has recommended technology skills for staff. The expectation is that the staff will use technology as a tool for instructional delivery and managing and reporting student progress and student data.

Training efforts are assessed using a standard feedback form or one requesting specific feedback – such as in Tech Academy.

Basic Skills for Teachers

• Have knowledge of basic technology literacy skills
• Apply technology to the delivery of standards-based instruction
• Use technology to increase student achievement
• Apply technology to data-driven assessments of learning
• Utilize technology to manage and communicate information
• Uses spreadsheets to organize and manipulate numerical data, in order to solve problems and track student progress.
• Uses data base programs to organize, gather, and manipulate qualitative and quantitative data, in order to solve problems and track student progress.
• Uses a word processing program to communicate effectively with text and images.
• Uses email and conferences to enhance professional communication, including use of attachments.
• Uses hyper linked, multimedia, presentation program (such as PowerPoint, or web publishing) to communicate effectively with students and colleagues. Integrates images, sounds, and possibly video, to enhance communication of messages.
• Utilizes Internet resources ethically and effectively to promote student learning.
• Provides leadership to students regarding effective and ethical use of technology resources.

Basic Skills for Administrators
• Uses spreadsheets to organize and manipulate numerical data, in order to solve problems and track student progress.
• Uses data base programs to organize, gather, and manipulate qualitative and quantitative data, in order to solve problems, track employee records, and track student progress.
• Uses a word processing program to communicate effectively with text and images.
• Uses email and conferences to enhance professional communication, including use of attachments.
• Uses hyper linked, multimedia, presentation program (such as PowerPoint, or web publishing) to communicate effectively with students, parents, and colleagues. Integrates images, sounds, and possibly video, to enhance communication of messages.
• Provides leadership to the building staff regarding effective technology use.
• The TAP program has an evaluation instrument that contains indicators that identify areas that allow for improving instructional quality and student achievement.

Basic Skills for Tech Teachers
• Uses spreadsheets to organize and manipulate numerical data, in order to solve problems and track student progress.
• Uses data base programs to organize, gather, and manipulate qualitative and quantitative data, in order to solve problems and track student progress.
• Uses a word processing program to communicate effectively with text and images.
• Uses email and conferences to enhance professional communication, including use of attachments.
• Uses hyper linked, multimedia, presentation program (such as PowerPoint, or web publishing) to communicate effectively with students and colleagues. Integrates images, sounds, and possibly video, to enhance communication of messages.
• Supports the staff in their efforts to acquire the preceding skills.
• Evaluates software programs, installs and troubleshoots programs.
• Troubleshoots hardware problems.
• Provides leadership to the building staff regarding effective Technology use.
• Manages day to day network functions, including users and groups.

Basic Skills for Head Secretary, Athletic Secretary, Counseling Secretary, Attendance Secretary, Registrar, and Counselor.
• Uses spreadsheets to organize and manipulate numerical data, in order to solve problems and track student progress.
• Uses data base programs to organize, gather, and manipulate qualitative and quantitative data, in order to solve problems and track student progress.
• Uses a word processing program to communicate effectively with text and images.
• Uses email and conferences to enhance professional communication, including use of attachments.

**Basic Skills for Students (Information Literacy)**

The integration of Information Literacy into instruction occurs on a seamless basis throughout the K-12 instructional program. Media Specialists pursue national Information Literacy Standards sanctioned by the American Library Association (ALA) and Association for Educational Communications and Technology (AECT) groups.

The effect of the combined effort of the above listed skill sets will provide the best opportunity for the system to evolve and support the vision and direction of the ET_IL.

The District provides every teacher with a laptop computer and requires the use of PowerSchool, PowerGrade and some curriculum software. Administrators and teachers have access to a variety of data management tools and are provided with resources to help use those tools. Data management strand in tech academy and a principal data-mining day in the fall. Winocular and HR forms for admin and Mentors and Masters, ILP/CLP, ESL, and others.

Master teachers also provide training to the Instructional Leadership Teams. They utilize clusters to identify specific student needs using NWEA and CSAP scores. The District’s Administration Team also provided data management training at retreats, during Admin Team meetings and at other times.

There are domains in the District’s evaluation instrument that specifically addresses Instruction – Learning Activities and Materials that evaluates the incorporation of multimedia and technology into lessons.

In addition there is a domain in the evaluation instrument that specifically address Responsibilities: Media Specialist - Information Specialists that evaluates the integration of Educational Technology / Information Literacy in instructional practices across all curricular areas.

The most difficult obstacles to providing appropriate staff development activities include time, calendar restraints, participation, pay, incentives, and staffing for substitutes.

Time constraints are difficult to overcome. The District is spread out over a distance of about 45 miles. Scheduling sessions and accommodating travel time, limits participation. Sending trainers to locations across the District is done, but small attendance is often the result. The school calendar limits the number of training days available in the school year. Other needs also take those calendar times.

Participation in activities is dropping and each year it becomes more difficult to get attendance in sessions on a volunteer basis. Providing pay is difficult on budgets. Other incentives have been tried but are often ineffective. Planning training during the day is difficult because of a variety of staffing issues and the difficulty of obtaining substitutes.
Clusters, which are held for 90-120 minutes a week, provide job-embedded staff development. Because of this, teachers are no longer participating in after-school staff development.

The District’s technology staff has an email conference that is used to distribute needed information. The staff meets once a week in a department meeting. Following the main agenda, the District Technology Support Assistants meet to obtain specific training. The staff also participates in online courses and brings in tech support from a variety of sources.

E. Technology Infrastructure and Support

The physical technology infrastructure required by the District to deliver ET_IL services is very sophisticated. It includes elements of hardware, software, telecommunications services, and the staffing needed to support the technology infrastructure.

a. Telecommunications Capacity

The DO is connected to the Web through a Frame Relay T1 to Qwest Interact and an ATM T1 to CenturyTel. The District has a SonicWall Pro 3060 in which Firewall and Content Filtering is performed. The District Office is a fully switched 10/100 Ethernet network with two (2) gigabit backbones. It is wired with Cat-5E cable. The DO also has wireless connectivity for laptops and mobile computer labs provided through 3 wireless access points.

The DO campus consists of Eagle Valley Middle School (EVMS) and Eagle Valley Elementary School (EVES). Both sites are connected to the DO through six (6) strands of 62.5/125 multi-mode fiber which connects data and the District phone system. An additional twenty four (24) strands of multi-mode fiber has been laid through EVMS to the District’s point-to-point wireless aggregate point. This site pulls one (1) 54Mbps point-to-point wireless connections to Red Canyon High School in Eagle. Currently the other sites/campus are connected to the DO through two (2) T1s. One is for voice and one for data.

The District is using Paradyne CSU/DSUs and Nortel Network Contivity 1740 Routers at all sites and a Nortel Networks Backbone Locator Node (BLN) at the DO. Each site has a Main Distribution Frame (MDF) where all Wide Area Network (WAN) connections feed. The Local Area Network (LAN) at each site spokes out from the MDF. Each MDF has a Nortel Networks 350T or 350F which connects to the 1740 Router. Each is a 10/100 switch with the 350F having two (2) 100Base-T fiber ports. All servers, Intermediate Distribution Frames (IDF), computer labs, hubs, remote switches, printers, and any other device that may have high traffic are connected to the switch. Each server has a 100Mbps connection to the switch.

The current computer lab wiring configuration is to have at least thirty (30) ports wired to a wall rack to which every device in the lab is connected. These jacks are in turn connected to either a hub or switch that is back boned back to the MDF. The District is currently moving to wholly switched networks. Wiring at each site is either Cat-5 for our older schools with the DO, GCMS, RHES, BCES, BCMS, and AES wired to the Cat-5E
standard. Our four (4) campuses (DO/EVMS/EVS, RHES/GCMS, GES/EVHS, and BMHS/MMES) all have at least six (6) strands of 62.5/125 multi-mode fiber wired between them. The District is currently using two (2) strands for data and two (2) strands for voice. Rooms that do not have sufficient ports for all network devices use external, non-racked 6-8 port Asanti switches or 4-8 port D-Link Hubs. The District attempts to separate collision zones as best as possible.

The District will need to continue to increase bandwidth to the Internet. Each year more applications are added that use the Internet and Internet sites deliver more bandwidth intensive services.

b. Telecommunications Services
The District provides the following network access, network services, and other services:
• Internet access - 2 dedicated T1 lines
• Web services - Sites for each school and department
• E-mail - Through FirstClass by OpenText
• Scheduling - Through FirstClass by OpenText
• Conferencing
• Student system - PowerSchool
• Financial system - Sage
• Windows File sharing - Minimum 300 Mb for Staff and 100 MB for students. Backed up nightly on SDLT backup tapes
• Network Printing - Color and Black and White
• District wide phone system - Tadiran Coral Phone Systems
• HVAC control - Johnson Control Systems
• Food Service Point of Sale Systems - Winsnap
• Transportation maintenance and support systems - FleetMaintenance, soon to be upgraded to iMaint
• Bus routing and scheduling - VersaTrans
• Sub Caller Support - Subfinder
• Technology Work Order System - FileMaker Data base

The District computer network uses Windows 2003 with Active Directory, configured in a multi-level domain hierarchy, for the network operating system. Client machines currently supported are mainly Gateway and Apple computers, running WinXP and OS X (10.2, 10.3 and 10.4). The District data network is laid out in a hub and spoke configuration where the District Office (DO) is the hub. The DO is the central location for all District information, both voice and data. Currently there are 16 (sixteen) servers providing:
• Domain Name Server (DNS) Services
• Web Services
• E-mail services
• Voice mail
• Scheduling
• Text Conferencing
• Human Resource Data Warehousing
• Financial Reporting
• Student Information
• District Office File Sharing (DO)
• Domain Host Control Protocol (DHCP) Services (DO)
• Software Installation Support
• Multiple FileMaker Pro data bases

c. Equipment Access for Instruction

SpED Resources

Assistive technologies support is a job element of the Technology Integration Specialist (TIS). The TIS provides technical support for Special Ed. Teachers and staff, including the installation setup and training on the IEP databases, as well as all assistive technology devices and software. The TIS also models strategies to include special needs students in regular classroom activities using assistive technologies.

The TIS provides assistance in identifying new technologies that help meet the needs of students who use assistive technologies. This assistance may be in the form of new software or hardware solutions, as well as making more efficient use of existing technologies. The TIS also obtains quotes and purchases most software and hardware used by special needs students, with the approval of the Director of Special Education. As new operating systems are adopted, the TIS is responsible for identifying new versions of existing software, or new solutions to software needs. The TIS has a SpEd Support Laptop, with all applications used by the District, in order to provide ongoing support in these applications.

If a SpEd computer is in need of troubleshooting or repairs, it is first looked at by the TIS. If this person cannot perform necessary repairs, the problem is handed off to the technology support specialists. When repairs are complete, the TIS follows up at the building, reinstalling special applications, restoring user settings, and testing all specialized applications and hardware peripherals attached to the computer.

The TIS also performs all training in hardware and software solutions that comprise assistive technology solutions in the District.

Assessment and Data Tools

The District utilizes Alpine Achievement Systems to provide District administrators, principals, and teachers with Internet-based tools that transform student assessment data into useful information to guide instructional decision making to improve student achievement. CSAP data, NWEA data, and other assessments are utilized by Alpine Achievement Systems. These contracts need to be continued. Internet access is required to use this service.

The Northwest Evaluation Association (NWEA) assessments are used by educators to ensure that every student is learning and growing. This assessment requires that each building have servers in place with the appropriate server software.
Other District assessments mentioned earlier also require specific computers, servers, and software. All these systems require ongoing maintenance agreements and all services require a sophisticated amount of ongoing District technical support to maintain and operate.

d. Equipment Access for Delivery of Library Information Services

The District uses Destiny for library information services. This system is District wide and provided from one District server. Media specialists must be properly trained to enter and maintain materials in the system. Destiny requires ongoing maintenance agreements and a sophisticated amount of ongoing District technical support to maintain and operate.

Most school media centers have small labs in them with PC host computers and patron access stations. The high school media centers are stronger on the hardware side with wide computer access. Most host stations use a laser scanner to check materials out with. The District owns 3 PHD devices to conduct inventory.

Software in place includes: Microsoft Office, Destiny, Alliance Plus Online, AV-Access, Follett Support Services, Web Path Express, a wide variety of curriculum support software – accessible via Destiny, plus the following online subscription services: World Book Online, Grolier Online, EBSCO, Britannica Online, INET Library, STAR assessment and AR quizzes. The Union Catalog is delivered via Destiny at all sites and continued efforts to make sure MARC records and quality control is made so that data base records conform to international cataloging standards. Ongoing efforts toward a Union catalog to make sure MARC records and quality control is accomplished so that data base records conform to international cataloging standards and supervised by highly qualified media specialists.

e. Network and Data Security

The District maintains firewalls and antivirus systems to protect data and operating systems. All services are password protected and have specific IP addresses that restrict access. These systems require ongoing maintenance agreements and a sophisticated amount of ongoing District technical support to maintain and operate.

The department of technology staff, outlined earlier, meets the needs for support. The District’s web services, library resources, PowerSchool can be accessed by the students, parents, and the community from anywhere in the world using Internet access. Email can be used by anyone to make contact with any District staff member.

f. Level of Technology Support and Maintenance

The District Department of Technology has 12 positions that provide a high level of technology support and maintenance. The positions and job descriptions are listed here.
**Director of Technology**
Initiate, develop, implement, evaluate, and coordinate both instructional and administrative/management technologies and technology based programs throughout the District.

**Network Systems Engineer**
Develop, design, bid, project manage, install, implement, administrate, maintain, upgrade, monitor, and establish standards for the Eagle County School’s LAN/WAN systems for voice, video, and data. Support the District’s departments with network application support.

**Network Systems Specialist**
Assist the Network Systems Engineer in the design, project management, installation, implementation, administration, maintenance, upgrade, monitoring, and establishment of standards for the Eagle County School’s LAN/WAN system for voice, video, and data. Support the District’s departments with network application support.

**Student Information System Specialist**
Direct all activities involved in the support, implementation configuration, and management of the District student information system and all modules related to that system. Provide all data and support necessary to complete and submit required state and federal reports.

**Student Information System Data Assistant**
Assist with all activities involved in the support, implementation, configuration, and maintenance of the District student information system data and all modules related to that system. Provide all support necessary to ensure complete and accurate data for the student information system.

**Technology Support Specialist**
Provide technical support and repair for technology, including computers and computer peripherals, network equipment, network and telecommunication wiring, telecommunications equipment, television broadcasting equipment, audio-visual equipment, software, and all other school and office equipment.

**Technology Support Assistant**
Provide building level support and repair troubleshooting for technology, including computers and computer peripherals, network equipment, and software. Provide instructional technology support for teachers and staff, as needed.

**Technology Program Specialist**
Develop and maintain the Eagle County Schools website and the sites of all District schools. Provide consultation, support and assistance with the implementation of program and data base infrastructures to ensure and optimize integration with existing and new technology. Develop, maintain and support all District FileMaker Pro databases.

**Electronic Systems Specialist**
Maintain all aspects of technical products and systems of low voltage electrical and electronic components, equipment, and machinery. Provide guidance with the development, design, testing, and implementation of such equipment.
Secondary Support Specialist
Provide support to the Director of Secondary Education and the Director of Technology to assure smooth operation of the departments.

Maintenance Agreements
The District retains and oversees all maintenance agreements for software, hardware, repairs, and support at the District level. This reduces overall costs because of discounts and the ability to keep all agreements current. This ensures that the support and maintenance can be delivered efficiently.

F. Policies and Procedures
District policies and procedures protect not only the user, but also the integrity of the network and data. While some policies remain static, others need to be revisited to determine their utility in the face of changing technologies and changing information literacy needs.

a. Increased Access for All Students and Teachers
The District is continually providing additional access to District resources. Parents have access to their student’s grades, homework assignments, and attendance as well as school bulletins. Students have access to their grades, homework assignments, and other information. Students and staff have access to all Internet resources. District resources can be accessed from inside the District and in some cases from outside the District. All critical data is password protected and accessible only by those who have the need or rights to know.

The following systems are accessible by staff and/or students.
- PowerSchool – District student information system
- First Class - District email
- EagleSchools.net – District web services
- Destiny - District library system (includes numerous online data bases.
- HRForms - District Human Resources evaluation data base
- Winocular – District application data base
- SAGE – District financial and purchasing data base
- ELA FileMaker Pro data base– District English Language Acquisition
- ILP FileMaker Pro data base– District Individual Literacy Plan
- Preschool FileMaker Pro data base – District Preschool
- Lesson Plan FileMaker Pro data base – District elementary lesson plans

b. Data and Network Security
A security audit of the district network has been performed by a company named ISC. Some areas were identified as possible security concerns and are being addressed.

c. Internet Safety Policy and Children’s Internet Protection Act Compliance
CIPA requires a school to have an Internet Safety Policy that protects minors from pornography or activities that could harm them. The Children's Internet Protection Act (CIPA) was enacted as part of the Consolidated Appropriations Act of 2001. CIPA compliance is required for E-Rate and Title II Part D of No Child Left Behind programs
and technology funding through Title III of the Elementary and Secondary Education Act. Under CIPA, the Internet Safety Policy must also contain a “technology protection measure” that prohibits access to graphic images considered pornography or harmful to minors.

The District has adopted policies to address this act and complies with all the requirements of CIPA.

The District enforces a policy of Internet safety for minors that includes monitoring the online activities of minors and the operation of a technology protection measure that protects against access to visual depictions that are obscene, child pornography, or harmful to minors. The District also enforces a policy of Internet safety with respect to adults. Protection measures cannot be circumvented by individuals through the use of passwords. The District monitors and attempts to block all proxy portals and other online sites that circumvent the protection measures.

The District also monitors unauthorized online access by minors, including "hacking" and other unlawful activities. Information is provided to staff and students about the harm caused by disclosure, use and dissemination of personal information.

The District provided public notice and held a public hearing regarding the Internet Safety Plan and Acceptable Use document.

To meet the requirements of CIPA, the District has purchased, installed, and maintains SonicWALL Solutions for Education. SonicWALL has an installed base of 190,000 Internet security appliances protecting millions of students, employees, and home users. SonicWALL security solutions is an easy-to-manage security and content filtering solution that protects the entire district wide area network.

Even though schools and libraries benefit from the wealth of information available on the Internet, not all information is appropriate. SonicWALL prohibits students and the District employees from accessing Websites that have pornographic, violent, or otherwise objectionable content.

SonicWALL's Education Editions are tailored to the needs of educational institutions and libraries. This solution also includes Internet security appliances with content filtering to protect the LAN from Internet hackers and prevent students from accessing objectionable content, allowing the school or library administrators to have control over Internet access.

A high number of servers are added to the Internet daily. Server addresses may change daily. Software and hardware systems are being developed to bypass content filtering. These events make it impossible to guarantee that students or employees will never view pornographic, violent, or otherwise objectionable content. SonicWALL updates the filtering lists daily and this helps reduce the probability of objectionable material being accessed in the District. In addition, the District has the ability to add addresses to the filtered list at any time.
d. Student and Staff Policies

The District website provides access to all District policies. In addition, some schools require a student and in some cases a parent signature on District policies or school acceptable use documents.

The District has adopted an acceptable use policy. Eagle County Schools Internet Services is to support education in Eagle County Schools Re50J, to provide employees with email services and to provide the public with access to school and District information via the web. Use of the system must be consistent with the philosophy and educational objectives of Eagle County Schools.

The District uses the web to post information, projects, and pictures that can be viewed by anyone in the world with access to the Internet. This policy includes the ethical and legal use of documents as well as procedures to protect student and staff and to maintain intellectual property rights.

The District email system is intended for the purpose of conducting official District business. The acceptable use policy includes the ethical and legal use of email.

The ECS recognizes the need for safety in all aspects of education. At times, students could be most vulnerable when not actively supervised online. It is our intent to block unwanted material and deal with infractions that involve technology of all genres.

The District does not have a policy in place that prohibits, limits, or allows student use of personal technologies such as cell phones, wireless computing, instant messaging, or other emerging technologies. At this time the District manages issues with and use of these devices as a behavior issue.

G. Evaluation Plan

Evaluation and outcome measurement of the Previous ET_IL Plan was completed. Included here are notes from a meeting that evaluated the previous plan. It indicates that the District must address or improve in the following areas.

A. NEEDS ASSESSMENT

• A survey instrument should be developed that more specifically addresses District needs as they relate to 21st Century Skills. NCLB requirements, assessments, and curriculum integration. The needs assessment should be tailored to the student level, teacher level, and administration level.
• The District should address the issue of highly qualified personnel and the FTE requirements for technology teachers and library media specialists in the buildings.
• The District should adopt a specific curriculum rubric to include technology, ETIL, and staff development in the planning and curriculum adoption process.

B. GOALS, OBJECTIVES and STRATEGIES FOR ETIL

• ETIL and technology requirements should be added to job descriptions and specific elements added to the evaluation rubric. Technology is built into evaluation, but it doesn’t define what technology is.
• The District should adopt Colorado Information Literacy Standards or the International Society for Technology in Education (ISTE) as much as possible, recognizing that it is impossible for most schools to meet all standards.
• The 21st century learning skills should be included and cross referenced to the District ETIL goals.
• The District should identify and adopt a specific assessment process at 8th grade and have a specific plan in place to provide the student skills in previous grades to meet the requirements of NCLB.
• Programs and the ability to hire quality personnel is often undercut because District tries to hire part-time staff who have reduced or no benefits and lower annual salaries.

C. COLLABORATION AND INTEGRATION
• Technology items should be worked into cluster group meetings, to promote ETIL and enhance collaboration.

D. PROFESSIONAL DEVELOPMENT
• The time frame for Tech. Academy should be re-examined, perhaps offering it in August.
• Basic technology skills and standards for teachers, administrators, or other staff should be a requirement for hiring and maintaining positions.
• Attendance at District training is less than half of what it used to be. Some kind of incentive and strategies for staffing, time, calendars and substitutes need to be developed.

F. POLICIES AND PROCEDURES
• Additional AV equipment should be considered as a standard for classroom monitors.
• Definitions of software to support curriculum and set training for its use should be developed.
• Software licensing, what was purchased, what are we licensed for?

G. EVALUATION
• A specific process needs to be developed to ensure an annual review of the plan.
• Evaluation Plan for this ETIL Plan that directly links back to the proposed strategies and clearly defines how strategies will be evaluated.

*End of notes from a meeting

Ensure ETIL Implementation
The following measures have you incorporated into this plan to ensure that the ET_IL implementation and investments have been effective in achieving the District’s objectives?
• Technology ratios have been established for elementary and secondary schools to ensure that all have the necessary equipment to meet the District goals.
• Laptop computers have been issued to each licensed staff member to ensure that all have access to technology at all times to meet the District goals.
• Attendance of all new teachers at new teacher orientation session on technology is required.
• Data mining strategies have been developed for determining needs which leads to development of School Improvement Plans
• All teachers are using PowerSchool and PowerGrade for attendance, grading, and reporting.
There is an annual evaluation process to review the District’s ET_IL plan. This is conducted and documented by the Technology Support Team and administration.

The plan also includes and evaluation of student assessment data. ECS uses multiple assessment software and analysis software so that results can be compared and used. These include:
• CSAP
• Alpine Achievement
• NWEA Dynamic Reports
• Teacher Benchmarks
• ECS data bases - CLP/ILP, ESL, Lesson Plan

All sources of data are used to identify student needs, develop SIPs and school long range plans. Pre/post assessments are utilized in clusters to measure student growth in regards to teaching strategies implemented.

The Educational Value-Added Assessment System (SAS EVAAS), developed by Dr. William L. Sanders is utilized. This value-added assessment follows the progress of individual students. It provides the District with a more precise and reliable way to measure schooling influence by cleaning and analyzing student data and compares the results in a way that provides a better predictor of student needs and student progress.