

4-7-2005

# Media Literacy and Critical Thinking: Is There a Connection?

Edward Arke

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MEDIA LITERACY AND CRITICAL THINKING: IS THERE A CONNECTION?

by

Edward T. Arke

Submitted in partial fulfillment of

the requirements for the degree

Doctor of Education

Interdisciplinary Doctoral Program for Educational Leaders

School of Education

Duquesne University

August, 2005

[signature page]

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### Abstract

This study investigated the relationship between media literacy and critical thinking skills. To date media literacy advocates have not developed a quantitative means of measuring media literacy. While numerous claims that media literacy and critical thinking are related, a review of the existing literature has not revealed any academic support for the assertion. As a result, a demographic survey and test to measure each skill set respectfully was administered to a sample of undergraduate college students. For this study, a new media literacy measure was developed. Statistical analysis of the test results did show a statistically significant correlation between the scores recorded on each measure ( $r(34) = 0.322, p < 0.05$ ). The results did not provide support for statistically significant correlations between college students' self-reported level of media literacy education or self-reported media consumption and their critical thinking scores. This study provides a starting point for the quantitative measurement of media literacy and makes an argument for the inclusion of media literacy education at institutions of higher education.

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Doctor Of Education, August 2005

Duquesne University

Chair: Robert Bartos, Ed.D.

This study investigated the relationship between media literacy and critical thinking skills. To date media literacy advocates have not developed a quantitative means of measuring media literacy. While numerous claims that media literacy and critical thinking are related, a review of the existing literature has not revealed any academic support for the assertion. As a result, a demographic survey and test to measure each skill set respectfully was administered to a sample of undergraduate college students. For this study, a new media literacy measure was developed. Statistical analysis of the test results did show a statistically significant correlation between the scores recorded on each measure ( $r(34) = 0.322, p < 0.05$ ). The results did not provide support for statistically significant correlations between college students' self-reported level of media literacy education or self-reported media consumption and their critical thinking scores. This study provides a starting point for the quantitative measurement of media literacy and makes an argument for the inclusion of media literacy education at institutions of higher education.

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## CHAPTER 1

### INTRODUCTION

Thousands of media images intersect with Americans' daily lives on a regular basis. "Media are penetrating cultures and inundating people with information at an ever-accelerating pace." (Christ & Potter, 1998, p. 5). Media scholar George Gerbner claims: "As a nation we now devote more time to the consumption of mass-produced communications than to paid work, or play, or anything except sleep (and the 'late show' is cutting into that, too)." (Morgan, 2002, p. 80) A number of national and international organizations have been formed in the last decade devoted to the idea of better preparing individuals to sort through the barrage of messages to which they are exposed. This educational endeavor has been labeled the media literacy movement.

Media literacy is a growing academic field in the United States. Educators here have started to react to the successes of other nations such as Canada, Australia, Great Britain and New Zealand in teaching students about the media and its messages. "Four years ago, only seven states specified that students need to learn media literacy. By 2002, all 50 states referred to media literacy in their curriculum recommendations" (Tugend, 2003, p. 1). But while the field is growing in interest and participation, relatively little research is available examining the usefulness of this instruction.

A media literate person is expected to have the ability to "decode, evaluate, analyze and produce both print and electronic media" (Aufderheide, 2001, p. 79). Feuerstein (1999) writes "One purpose of (media literacy) M.L. programs is to promote

the (critical thinking) C.T. of students towards media texts” (p. 45). Therefore, research connecting media literacy education and critical thinking skills is being sought.

The Goals 2000: Educate America Act calls for “the proportion of college graduates who demonstrate an advanced ability to think critically, communicate effectively and solve problems” (Berko, et. al., 1998, p. 175) to increase substantially. Since basic educational units at both the elementary and secondary levels across the United States approach the task of critical thinking education differently, institutions of higher education will be required to ensure that graduates develop critical thinking skills by at least one of a number of ways, including media literacy education.

#### Statement of the Problem

Scharrer (2002) states, “The results of participation in media literacy curricula are not often explicitly defined and measured, but there is a generalized notion about what these outcomes are.” (p. 354). Among the most common outcomes listed by media literacy supporters is a notion that students will become more critical or analytical when they consume mass media. While a number of media literacy approaches and curricula have been developed and implemented, research including empirical studies appears to be lacking (Singer & Singer, 1998). This study will determine if there is a significant relationship between scores measuring media literacy and critical thinking skills in the hopes of establishing causality between media literacy education and critical thinking abilities.

#### Hypotheses

The area of media literacy research is relatively new therefore the hypotheses in this research will focus on whether the relationship between media literacy and critical thinking exists. Other independent variables such as self-reported media literacy education, state of residency for elementary and secondary education, and media consumption will also be examined. The hypotheses being tested are:

H1: There will be a statistically significant relationship between college students' scores on a media literacy measure and a critical thinking skills measure.

H0: There will be not be a statistically significant relationship between college students' scores on a media literacy measure and a critical thinking skills measure.

H2: There will be a statistically significant relationship between college students' self-reported level of media literacy education and their scores on a critical thinking skills measure.

H0: There will be not be a statistically significant relationship between a college student's self-reported level of media literacy education and their scores on a critical thinking skills measure.

H3: There will be a statistically significant relationship between the amount of media students consume and their scores on a critical thinking skills measure.

H0: There will be not be a statistically significant relationship between the amount of media students consume and their scores on a critical thinking skills measure.

### Significance of the Problem

“Media literacy is an issue of increasing concern among educators from a variety of backgrounds” (Covington, 1997, p. 37). Thousands of media images intersect with our

lives every day. Gerbner writes that television particularly has penetrated our lives to such a degree that its consequences are felt around the world. He adds that new delivery systems “signal even deeper penetration and integration of the dominant patterns of images and messages into everyday life” (Morgan, 2002, p. 193).

At just a few hundred years old, mass media is a relatively new social and cultural phenomenon. Its growth and penetration has been fueled by the technological advances that have presented the necessary instruments to deliver mediated messages to the masses. To complement the technology there has also been “an accompanying level of literacy among large numbers of people to utilize the disseminated information. But the mass media both depend on and affect human literacy and education” (Blake & Haroldsen, 1975, p. 39). Some scholars believe the “human appetite” for mass media rises with education (Blake & Haroldsen, 1975, Schramm, 1973).

With technological advances and additional media choices being developed, the media presents information at an ever-accelerating pace and substantially increasing volume. A basic definition of “media literacy” was developed in this country at the 1992 National Leadership Conference on Media Literacy. In just over a decade, the field has grown to an eighteen-project poster session on media literacy issues at the 2003 National Media Education Conference in Baltimore. More classes, degree programs on the undergraduate and graduate level, and research efforts are being developed to promote growth in the field.

As scholars in the field work to establish and offer a precise definition of media literacy, there is also a need and desire to establish credibility for the educational efforts

currently undertaken in this area. A number of generalized concepts regarding the outcomes desired and expected from media literacy education have been circulated, but they “are not often explicitly defined and measured” (Scharrer, 2002, p. 354).

Hobbs and Frost (2003) report there is a small body of current research that looks at the impact of media-literacy instruction on cognitive skills, attitudes and behaviors of young people, but that there is “little school-based empirical research...to demonstrate the impact of media-literacy curriculum on students’ attitudes, behavior, knowledge and academic performance” (p. 332). The research included in Hobbs literature review focuses on middle and high school students and is representative of the current state of published studies in the field. Singer and Singer (1998) believe teaching children to understand mass communication mediums like television can result in a more critical and intelligent audience, “but a body of literature encompassing empirical studies appears to be lacking” (p. 179).

Dorr, Graves and Phelps (1980) believe much of what children watch on television has not been produced with their welfare or parents’ values in mind. They feel since it is unlikely TV content will be altered in significant ways it is important to undertake another approach to improve television’s effects. Their suggestion is to make children more critical evaluators of the medium’s content.

Others write about the need to evaluate whether their media education efforts are successfully reaching students. “Yet it is arguable that what media education needs at present is a form of evaluation that enables teachers to explore and test out a variety of possibilities, aiming at expanding understanding rather than checking current practice

against already fixed standards” (Scrimshaw, 1992, p. 242). The current study attempts to develop a media literacy measure that will enable teachers to determine whether students are grasping media literacy concepts and are able to apply higher-order thinking skills to media texts.

One reason research involving media literacy at the higher education level is necessary is to determine whether such educational experiences could be a beneficial and integral part of college and university curricula. Gerbner believes the study of mass communication and popular culture increasingly is becoming an educational responsibility. He states that while attempts to meet the responsibility have had some success, there have been few inroads into the curriculum made and that it is most clearly missing in the preparation of teachers (Morgan, 2002, p. 79).

Many institutions look to improve students’ critical thinking skills. For example, a Christian liberal and applied arts and sciences college in central Pennsylvania states in the introduction to its College-Wide Educational Objectives: “By raising the right questions, exposing students to multiple perspectives, and encouraging critical thinking, Messiah seeks to enable its students to respond with maturity to the world’s complexities” (Messiah, 2003, p. 198).

Ruminski and Hanks (1995) cite Wright State University as an example. “A major goal in the mission statement of the College of Liberal Arts at the university is to improve students’ critical thinking. Most schools propose to do that” (p. 4). Establishing a connection between media literacy and critical thinking skills could provide colleges and universities with another means of accomplishing their educational goals and objectives.

## Operational Definitions

The definitions provided for the following terms are operational for the scope of this research study. The author recognizes there are limitations and debate over some of the terms and definitions. The following articulates the definitions that will be utilized in this study.

Critical Thinking: “deciding rationally what to do or believe” (Norris, 1985, p. 40). A more academic and comprehensive definition takes this form: “The intellectually disciplined process of actively and skillfully conceptualizing, applying, analyzing, synthesizing, and/or evaluating information gathered from, or generated by, observation, experience, reflection, reasoning, or communication, as a guide to belief and action” (online @ [criticalthinking.org](http://criticalthinking.org)). A combination of these definitions is applicable to the way media literacy is said to enhance a person’s media experiences. And while there is some disagreement about specific definitions, “there is considerable agreement among experts that critical thinking includes skills in applying, analyzing, and evaluating information.” (Ruminski & Hanks, 1995, p.5)

Media Consumption: the amount of time spent with mass media outlets. Those outlets would be: television, radio, recorded music, newspapers, books, film, magazines and the Internet/World Wide Web.

Media Literacy: “the ability to access, analyze, evaluate and communicate messages in a variety of forms” (Christ & Potter, 1998; Aufderheide, 1993). This definition was developed at the National Leadership Conference on Media Literacy in 1992 and marked the start of a formal field of academic interest in the topic.



Media Literacy Education: explicit instruction with the purpose of giving students “an informed and critical understanding of the media, its techniques and impact.” (Quin and McMahon, 2001, p. 311)

Self-Reported Media Literacy Education: the amount of exposure to intentional media literacy education as reported via responses to a survey distributed as part of the study. Participants were asked to identify if they had some exposure or formal instruction in media literacy.

## Limitations

The first limitation to be recognized for the purposes of this study is the inability to measure the “cross-over” of the skills being tested. Hobbs and Frost (2003) claim their published study is the “first large-scale empirical work measuring the acquisition of media-literacy skills in the United States” (p. 349). In the discussion section of her research summary for *Reading Research Quarterly* (2003) Hobbs cites the importance of subsequently measuring whether the skills learned in school transfer outside the classroom. This observation points to the difficulty of measuring the amount of successful integration of these skills to media experiences outside of the classroom setting. The measurements in this study will be administered in classroom settings while most common media experiences occur in other locations.

Second, college-age students may not recognize the value of honing a non-tangible skill such as critical thinking. In a survey published in 1995, 63 percent of the Journalism and Mass Communications faculty responding indicated that students may not perceive critical thinking as a “real world” skill (Ruminski & Hanks, 1995). If students have difficulty recognizing the importance of the study, they may not fully apply themselves to the exercises and measurements presented to them.

Another limitation stems from the rather immature state of the field of media literacy. At this point there does not appear to be a recognized measure of media literacy. Hobbs has based her instrument on the work of Australians Quin and McMahon, but her instrument has not been widely tested and is not widely available. A new media literacy

measurement will be designed and piloted for this study. Reliability and validity studies will be performed on the pilot data to insure the usability of the test.

## CHAPTER 2

### REVIEW OF THE LITERATURE

The purpose of this research is to examine whether there is a connection between media literacy and critical thinking skills. The implications of such a connection for higher education curriculum could be significant. While still in its infancy as an academic field, media literacy is an educational area that has an established history in other parts of the English-speaking world. Australia, Canada and Great Britain implemented media literacy requirements in their basic education system long before the recent additions in the United States (Heins & Cho, 2002).

Conversely, through the mission statements of various institutions it appears the desire to have graduates become more developed critical thinkers has been a goal of many American colleges and universities for decades. Therefore, this examination of the literature includes a look at the development of the media literacy movement in the United States, a discussion of what critical thinking entails, a rationale for how the two concepts might be linked, and how they fit together into higher education curriculum discussions.

“Kids spend on average 1,000 hours each year watching television”(McBrien, 1999, p.76). Others have estimated the average American family watches over seven hours of television a day (Baran, 2002). With this amount of exposure, television has become a major source of influence on children’s knowledge, beliefs and future world experience (Singer, 1994). “Television continually grows in its influence on individuals’ and society’s use of leisure time, on their awareness of political and social reality, on

their forming of personal values in culture and ethics” (Brown, 1991, pg. 1). Add to this the amount of time spent watching films, listening to CDs or the radio and playing interactive games on the computer or surfing the Web, and it becomes apparent that instruction on understanding, interpreting and evaluating the media is needed at all educational levels.

### The Development of Media Literacy in the United States

A basic definition of “media literacy” was developed at the 1992 National Leadership Conference on Media Literacy and is used as the working definition for this research. Since that formal deliberation, the availability of more tools to allow students to produce their own media works, the rapid transnational transmission of programming and a concerted effort over the years by a number of countries to develop national media literacy curricula (Christ, 2002) has helped to fuel an increased pace and urgency of the discussions of media literacy in the United States.

Everyone possesses some degree of media literacy. We all have some degree of awareness regarding the media, its messages and the impact it has on our lives. Potter (2001) describes media literacy as a continuum much like a thermometer “where there are degrees. We all occupy some position on the media literacy continuum”(p. 7). Defining the concept of media literacy and building a continuum of measurement, however, is still an issue of discussion and debate among scholars.

Christ and Potter (1998) indicate media literacy has been treated as a public policy issue, a critical cultural issue, or as a scholarly inquiry from a physiological, cognitive or anthropological tradition. They also indicate the term has been used

synonymously with media education and can span across different kinds of media.

However, common ground for many researchers in the field is provided by the concepts agreed upon in the 1992 definition and the idea that all members of society can benefit when they are empowered with skills to help control the effects of media on themselves.

During the late 1970s through the mid-1980s there were a number of systematic efforts to develop integrated curricula and long-term projects in media education, some of which were federally funded. An early effort was the work of Dorr and her associates in the Boston area from 1974 to 1976. The project consisted of a 6-hour curriculum developed and tested with “more than 200 White, Black and Hispanic persons—half of them elementary school children and the rest adolescents and adults” (Brown, 1991, p. 153). The results indicated that the children learned about the media and how it operates but did not necessarily apply their newly gained knowledge in a manner that led to more selective television viewing. So while they were becoming more knowledgeable about media operations, they were not becoming more media literate in the sense they were analyzing and evaluating their media choices more.

When major funding in the United States ceased, the largest structured experiments disappeared (Brown, 1991). Interest seems to be returning, at least in some states, with programs like Maryland’s Assignment: Media Literacy curriculum. The New Mexico Media Literacy Project has also been active and aggressive in providing media literacy education resources for grade school and high school instructors since 1993.

Generally, the focus of media literacy education has been K-12 education because many educators believe students at that level are still shaping their worldview and are

more open to a variety of analytical and evaluative techniques. It is also easier to legislate the inclusion of curricular items in the basic education system, although the attention such mandates receive varies from state to state and school district administration to administration.

Media literacy discussions can also have direct applications to higher education. For example, “the process of defining media literacy requires teachers and scholars to take a hard look at what and how they teach” (Christ & Potter, 1998, p. 7). Certain core areas of knowledge and thinking are sometimes identified as goals or intended outcomes of higher education. These principles, listed in mission statements or college-wide goals, include critical and analytical thinking skills.

In the past, many educators who have been incorporating media literacy concepts into the curriculum have not been doing so as part of an organized, systematic approach to education. Instead, ideas and lesson plans have been developed haphazardly through reading, professional development or conversations with other colleagues (Hobbs, 1998).

Hobbs (1998) indicates this bottom up momentum represents an important source of energy for the media literacy movement in the United States. In the summer of 2003, the National Media Education Conference in Baltimore drew over 350 people from around the world and across disciplines who have an interest in media literacy education. A 3-day conference was designed to explore the rights, roles and responsibilities of citizens in a media age. The event brought presenters and proposals from Argentina, Australia, Canada, Great Britain, New Zealand, South Africa, Taiwan and elsewhere. The global nature of the information shared and of the media literacy field itself is a

reflection of the transnational dissemination of media messages referred to earlier in this review.

Great Britain's efforts in media literacy education are often the focus on any discussion of how the field of study has evolved. "As early as 1929, a British board of education urged teachers to elevate children's standards of taste and evaluation about motion pictures" through specific training as part of the general educational process (Brown, 1991, p. 56-57). The British Film Institute has published a number of curriculum guides and other documents that have been at the center of the development of media literacy in the United States, including curriculum statements for both primary and secondary media education. Those documents emphasize ways in which media literacy topics can be addressed as well as ways subsequent analysis and discussion ensues (Scharer, 2002).

The early media literacy instruction followed an inoculation theory or was viewed as a precautionary measure. Bajkiewicz (2002) argues the perceived need to inoculate people was aimed particularly at the young. He believes this perspective still exists in some aspects of today's media literacy movement, especially among groups trying to correct potentially harmful behaviors and among activists who denounce any media usage.

In Australia, the Victoria Board of Studies has established media education goals that are being implemented as part of a plan which ran through 2004. Their guidelines acknowledge the significant impact the media has on people's lives. It acknowledges the way media influences how people spend their time and perceive themselves and others



and plays a crucial role in the creation of personal, cultural and national identity.

(Considine, 2002) The Australians have implemented measurements that examine concepts and skills familiar to American educators and students, but which thus far have not been incorporated into the educational approaches of many institutions in the United States.

The Canadian approach to media literacy education recognizes the value of media assessment and evaluation. Educators in that country believe a student can be protected from undesirable media content through education about the messages and methods to analyze the content for him- or herself. (McBrien, 1999). Canadian researcher and educator John Pungente (1995) has developed nine factors he believes necessary for the development of successful media education programs. Among them is collaboration between teachers, parents, researchers and media professionals to provide students with a diversity of skills and expertise.

Media education in Canada began with “screen education” in the mid and late 1960s. Much like the British, early efforts centered around the medium of film. The Canadian Association for Screen Education (CASE) sponsored the first large gathering of media teachers in 1969. Budget cuts and a shift to basic literacy education caused the first efforts to die out in the early 1970s. By 2000 renewed growth at the elementary and secondary levels occurred as media education became part of the English Language Arts curriculum across the country. Each Canadian province and three northern territories are responsible for their own education system. ([www.media-awareness.ca](http://www.media-awareness.ca))

Building on the roots established in Canada, Australia and the United Kingdom, media literacy is beginning to find its way into the curricular frameworks of America's institutions of higher education. North Carolina's Appalachian State University has the nation's first institutionalized graduate program in media literacy (Considine, 2002).

The program is the outgrowth of the institutions “interdisciplinary commitment to media literacy in undergraduate teacher preparation, a long established undergraduate minor in media studies, and a national media literacy reputation made most visible when the college co-hosted the first national media literacy conference in September 1995” (Considine, 2002, p. 7). A solid research base and consistency in classroom approach can help to establish media literacy as a critical area of study for students of all ages. While the pressure on teachers at the basic education level is focused on other areas or literacies, the development of such skills at the higher education level can add practical value to the liberal arts emphasis of many institutions and their curricula.

The most recent push for media literacy education in this country stems from arguments surrounding a connection between media literacy and a young person’s well being. In 1995, the Carnegie Council on Adolescent Development argued media literacy “may help protect young adolescents against strong advertising pressures to smoke, drink, have sex or eat unhealthy foods” (p. 118), and following the Columbine High School tragedy the U.S. Department of Education made available nearly \$1 million in grants for the purpose of implementing media literacy programs.

The National Communication Association has tried to capture and convey competency standards in their *K-12 Speaking, Listening and Media Literacy* statements. Among the 23 standards is “The effective media participant can demonstrate knowledge and understanding of the effects of the various types of electronic audio and visual media, including television, radio, the telephone, the Internet, computers, electronic conferencing, and film on media consumers.” (National Communication Association,

1996) As a result of the NCA standards many school districts began including or reviewing communication skills education in their programs. (Berko, et. al., 1998)

In 1998, NCA copyrighted an updated list *K-12 Speaking, Listening, and Media Literacy Standards and Competency Statements* ([www.natcom.org](http://www.natcom.org)). Of the 20 standards published, the final five standards cover competencies for media literate communicators. The organization also states: “Media literacy is recognized as a fundamental competency for literate citizens” (National Communication Association, 1998, p. 1).

The NCA’s efforts were designed to respond and implement national educational reforms based on the Goals 2000: Educate America Act. Among those goals and objectives: “Goal 5: By the year 2000, every adult American will be literate and will possess the knowledge and skill necessary to compete in a global economy and exercise the rights and responsibilities of citizenship...Objective 5: The proportion of college graduates who demonstrate an advanced ability to think critically, communicate effectively, and solve problems will increase substantially” (National Education Goals Panel, 1992, p.16). While not much has been written about the success or failure of the Goals 2000 initiative, it does point to a desire to have Americans become more literate about the media options they consume in an era where the media’s role in society continues to grow.

### Defining Critical Thinking

In their book *Media and Literacy: Learning in an Electronic Age- Issues, Ideas, and Teaching Strategies*, Adams and Hamm write, “Helping children become critical consumers of electronically-produced information is a major societal responsibility”

(Adams & Hamm, 2000, p.29). The idea of a “critical” consumer helps to blend the concepts of critical thinking and media literacy.

Definitions of critical thinking range from the simple and succinct to elaborate academic prose. For example, Stephen Norris writes in *Educational Leadership* that: “Thinking critically can be defined as rationally deciding what to do or believe” (1985, p. 40). On the other hand, Michael Scriven and Richard Paul define critical thinking as “the intellectually disciplined process of actively and skillfully conceptualizing, applying, analyzing, synthesizing, and/or evaluating information gathered from, or generated by, observation, experience, reflection, reasoning, or communication, as a guide to belief and action” (online@criticalthinking.org).

Media literacy advocates seek to provide individuals with a set of analytical skills that enable consumers to be more critical in their media consumption and in some cases have those skills also apply to other behaviors such as smoking cessation. This makes at least one connection between the media literacy movement and the philosophical field of critical thinking become more apparent.

Television is recognized as a major influence on children’s knowledge base, beliefs and future world experience (Singer, 1994). The analytical and evaluative components of media literacy aim to have viewers be more active and alert about the media content they consume and the programming selections they choose. Critical thinking scholars indicate those who possess critical thinking skills are able to analyze, interpret, evaluate, explain, and self-regulate, among other things (Facione, 1998). Learning to approach life, and particularly media consumption choices with this skill set

can enable consumers of all ages to be more discriminating about how they utilize not only television but all aspects of media.

An academic study that illustrates the overlap between media education and the philosophical approach to critical thinking was published in 1995 and conducted on members of the Association for Education in Journalism and Mass Communication (AEJMC). In their report, Ruminski and Hanks (1995) discovered that AEJMC respondents to their survey frequently used the words “analyze” and “evaluate” as part of their definitions of the term critical thinking. The researchers categorized these and other terms under the heading of “processing information” which is a major concept of the American Philosophical Association’s definition of critical thinking. Analyzing and evaluating are two of the four key skills identified in the consensus definition of media literacy. The report later concludes, “Responses to the open-ended question asking for definitions of critical thinking assume critical thinking skills are mainly skills in analysis of information” (Ruminski and Hanks, 1995, p. 8). This is an end result media literacy educators hope to instill in their students.

In his book, *Media Literacy: Keys to Interpreting Media Messages*, Silverblatt (2001) links media literacy and critical thinking skills when he notes the primary element of media literacy as: “A critical thinking skill that enables audiences to develop independent judgments about media content” (p. 2). He continues by stating that media literacy is first and foremost about applying critical thinking skills to our primary source of information, the media.

Since such data is lacking, a primary goal of this research project is to provide at least some empirical data and discussion to the field of media literacy and its contribution to critical thinking development. This report will examine the relationship between the two fields of study.

### The Intersection of Two Educational Outcomes

It is implied throughout the literature that there is a connection between Media Literacy and Critical Thinking. There is at least one international study that examines the potential link. Feuerstein (1999) looked at media literacy as a means to develop critical thinking in children ages 10-12 in six Northern Israeli primary schools. Of her three hypotheses, the third is the most applicable to this research project: “As pupils increase their experience with media literacy they will demonstrate greater proportional gains in media analysis and critical thinking skills” (p. 47).

After conducting pre and post-tests to measure the impact of course content in media literacy related materials, Feuerstein concludes: “As pupils increase their experience with a media literacy program, they will show greater gains proportionally in media analysis and critical thinking skills” (p. 50), providing support for her third hypothesis. Her statistical analysis indicates a significant difference between students who participated in media literacy instruction and those who did not on tests that measured language difference and narrative difference.

Two independent variables proved to be significant: test type and socio-economic status. Lower socio-economic status pupils tended to show greater improvement in achievement scores than those in the high socio-economic status group in the media

narrative post-test (Feuerstein, 1999, p.49). The author of the study attributes part of that difference to a more concentrated and focused video production component in their program.

Feuerstein's research is valuable since it provides some empirical evidence of connections between media literacy instruction and critical thinking skills. However, the study does more to confirm the potential benefits of adding coursework to the curriculum than to point to a connection between media literacy and critical thinking skills. The current research project seeks to establish a more direct correlation between the two types of skills in the hopes of encouraging more curricular development in the area of media literacy.

### The Role of Higher Education

In 1994, the Association for Education in Journalism and Mass Communication (AEJMC) and the Association of Schools of Journalism and Mass Communication (ASJMC) asked a joint committee to review the mission statements and stated purposes of journalism and mass communication education. As part of the study, the panel cited an earlier AEJMC Curriculum Task Force that concluded "...The purpose of media education is to produce well-rounded graduates who have critical thinking skills as well as practical skills" (@ aejmc.org). Of the 176 program responses to the 1994 joint study, over 36 percent of the programs listed critical thinking or analytical skills as specific kinds of learning they expected their students to develop through their curriculum.

Many liberal arts colleges and universities and their respective journalism and communication programs state their desire to graduate "critical thinkers" as part of their



goals and mission. For example, Messiah College states that: “By raising the right questions, exposing students to multiple perspectives, and encouraging critical thinking, Messiah seeks to enable its students to respond with maturity to the world’s complexities.” (Messiah College, 2003, p. 198) Another example is Boston University’s College of Communication, which lists as one of its four objectives “to stress critical thinking, creativity and personal integrity” (@ aejmc.org).

An electronic survey to identify the extent media literacy is being taught in institutions of higher education across the United States was reported in July of 2002. Despite a low rate of return (74 responses to 3200 emails sent), the organizers were able to identify 61 institutions with some degree of media literacy curricula. This led them to conclude that “media literacy education is still in a formative stage of development” (Silverblatt, et. al, 2002). The researchers were able to identify three institutions that have added a media literacy course to their general education requirement (Morehead State University, Wesley College and St. Louis Community College) and eight institutions (Webster University, Appalachian State, New School, Rutgers University and Southern Illinois University –Edwardsville at the Masters level; New York University, Rutgers University and University of Alabama at the Doctorate level) that offer advanced degrees in media literacy. These findings, as sketchy as they might appear, indicate the consideration of including and in some cases requiring media literacy as part of a higher education curriculum.

## Summary

Educators at various levels are taking a closer look at including media literacy skill development in their curriculums. While it might be advantageous to offer this type of analytical experience to younger students, basic educators are hard pressed to infuse additional literacies in their curriculum given the directives and focus provided through the No Child Left Behind Act. The literature seems to bear out the benefits in terms of critical thinking abilities that media literacy education can provide. Given that for a variety of reasons students may not receive instruction in media literacy as part of their basic education package, institutions of higher education should consider adopting coursework in these areas.

Many institutions of higher education aim to graduate students that demonstrate critical thinking skills. While the benefits of providing media literacy education may seem somewhat apparent after reviewing the literature, what is lacking are empirical studies linking media literacy to critical thinking skills. This research looks to examine the correlation between media literacy and critical thinking with the goal of contributing to a body of knowledge that may prove helpful to colleges and universities looking to strengthen their curriculum in this area.

## CHAPTER 3

### METHODOLOGY

This study examines whether a correlation exists between a college student's media literacy skills and their critical thinking skills. Each skill will be measured through a test designed to isolate the particular skill set desired. The critical thinking measure chosen has been in use for several years and has established validity and reliability. For media literacy, a measure will be developed based on past research practices. The researcher intends this initial trial of the measure to serve as a pilot for future tools in the field. Since there is no known existing measure from which to work, such a pilot will be a valuable addition to the field. Steps to insure reliability and validity have been taken as part of the test construction process.

A survey of participating students will also be conducted to examine any relationships between such factors as past media literacy education, hours engaged with the media, and the student's academic major in college with the variables under study. Multiple regressions can help determine if there is any influence present in several independent variables associated with media literacy education.

To measure academic achievement it is necessary to set goals, objectives or learning targets in order to gauge the amount of impact a particular lesson, course, curriculum or program has had or is having. A taxonomy can serve as an outline around which to organize and arrange learning targets and thinking skills (Nitko, 2001). One of the most common and widely recognized is Bloom's Taxonomy.

Bloom's taxonomy was actually co-written by five authors and published in 1956. The taxonomy was developed to facilitate communication among college examiners about objectives, test items and test procedures at a time when educators were attempting to share ideas about learning objectives and testing (Bloom, et.al., 1971). The six categories listed under the objectives for the cognitive domain are knowledge, comprehension, application, analysis, synthesis and evaluation and they are arranged in a hierarchical fashion to represent lower and higher-order thinking skills. In discussing the uses of the Taxonomy, Bloom writes: "If a teacher is interested in building a valid achievement test himself, he should try to have his test items reflect the relative emphasis instruction has placed on the various taxonomic categories" (Bloom, 1971, p. 40). The instrument to be designed for the present study will be based on the idea of reflecting measurement in each of the taxonomic areas of a selected taxonomy.

In 1986, Stiggins, Rubel and Quellmalz developed a simplified taxonomy based on the work of Bloom et. al., which can be used to illustrate an assessment strategy. The five fundamental components in the Stiggins taxonomy are recall, analysis, comparison, inference and evaluation. These components recur in lists of basic cognitive operations proposed by philosophers, psychologists and educators (Stiggins, et.al., 1986, p. 7).

Another educational theorist whose work was consulted during the construction of the media literacy measurement was Robert Gagne'. Gagne' classifies student performances into five domains: intellectual skills, cognitive strategies, verbal information, motor skills, and attitudes (Gagne', 1979, p. 217). Since motor skills are not a domain relative to this study they are not included in the measurement instruments.

However, the questions that are included for the purpose of media literacy assessment do relate to the remaining four domains of Gagne's work.

**Table 1—Relationship between instrument and theory**

<u>Measurement question:</u>	<u>Bloom, et.al.</u>	<u>Gagne'</u>	<u>Stiggins, et.al</u>
#1-6—fact based recall from the messages	Knowledge	Verbal info.	Recall
Summarize the message	Comprehension	Verbal info	Recall
Explain the purpose of the message	“	“	“
What information or points of view may be missing from this message?	Evaluation	Intellectual skills	Comparison
Identify the sender of this message. Where did the information originate?	Analysis	Cognitive strategies	Analysis
How does the sender attract and hold your attention?	Analysis	Cognitive strategies	Analysis
What attitude or feelings are you left with after reading/listening/viewing the message/story?	Evaluation	Attitudes	Evaluation
What does this information suggest?	Synthesis	Attitudes	Inference

Nitko (2001) lists several practical criteria for selecting a Taxonomy of Cognitive Learning Targets. Among them are completeness, simplicity and reporting. In terms of this study, Stiggins, et.al.'s taxonomy might be more applicable from a completeness and simplicity standpoint. Reporting is defined by Nitko as the “usefulness of the taxonomy as a means of organizing reports of assessment results for individual students, educational officials, government officials or the public” (p. 30). Since Bloom's Taxonomy is a more widely recognized means of organizing cognitive skills than the others consulted, Bloom

provides a framework that is most useful to the construction of the media literacy measure.

### Target Population

The target population for this study is college students enrolled at a Christian liberal and applied arts and sciences college in Pennsylvania. A purposive sample of students in a Communication-based course that is open to non-Communication-based majors was utilized to provide a degree of diversity in the participants. Future testing may be expanded to other institutions, classes that are focused on other disciplines, or a more generally diverse population in terms of quantity and demographic construction, to further broaden the sample and make the findings more generalizable.

### Method of Sampling

Participants for the study were gathered initially from undergraduate classes at the institution where the researcher is an Assistant Professor of Communication. Their willingness to participate will be ascertained through the processes dictated by the IRBs at Duquesne University and Messiah College. Participation will not be a condition for a grade in any course in which the testing is conducted. By measuring a diversely enrolled Communication-based class the researcher aimed to assemble a population that is not homogeneous and therefore is representative of the student body at large. Since research in this area of the field seems to be in the early stages, a purposive sample to initiate this type of quantitative process should be adequate and appropriate.

The sample size was thirty-four. This number provided a reasonable amount of data for correlational analysis. The sample size is in line with an average class size of 35 at the institution where the research occurred. One student was unable to participate in the testing required for full participation in the study because of an absence the first day



of testing. Another student provided incomplete data on the demographic survey due to a late arrival to class the day it was administered.

### Measurement Devices

The study requires two formal measurement devices for quantitative data and a brief survey to collect information related to qualitative analysis and for possible limiting of extraneous variables through multiple regression analysis. The variables of media literacy and critical thinking skills will be measured through formal testing procedures utilizing measurement tools that have been analyzed for validity and reliability.

The California Critical Thinking Skills Test (CCTST) is distributed by Insight Assessment and the California Academic Press. The CCTST is the most relevant to this study since it is designed to assess an individual's critical thinking and reasoning skills and for the gathering of data on critical thinking skills development. It is also geared toward students at the higher education level.

The test was updated in 2000 and is supported by the publishers. The test's website boasts concurrent validity with the quantitative, analytical and verbal portions of the Graduate Record Examination (GRE), the Watson-Glaser Critical Thinking Appraisal (which measures critical thinking in relation to reading comprehension) and college GPA. The CCTST's construct-content validity has been verified by the 1990 Delphi Report and a replication research study at Penn State University sponsored by the U.S. Department of Education. The reliability-internal consistency for the Form 2000 has KR-20 alphas ranging from 0.78 to 0.84 ([www.insightassessment.com/test-cctst.html](http://www.insightassessment.com/test-cctst.html)). George and Mallery (2001) state "There is no set interpretation as to what is an acceptable alpha

value” (p. 217), but they do provide the following guidelines: “ $\geq .9$ —Excellent,  $\geq .8$ —Good,  $\geq .7$ —Acceptable,  $\geq .6$ —Questionable,  $\geq .5$ —Poor, and  $< .5$ —Unacceptable” (p. 217). Using these guidelines, the CCTST would be in the acceptable to good range based on the figures the publishers have provided.

In reviewing the initial edition of the test, McMorris writes “Pretest scores correlate with college GPA (.20), SAT-V (.55), SAT-M (.44), most Nelson-Denny reading scores (.40s) and posttest scores (.70).” For reliability he concludes internal consistency is around .70 (Conoley & Impara, 1995, p. 144).

A review by Michael also supports the appearance of content validity. He feels the CCTST benefits from the contributions of the Delphi panel in its development. The Delphi panel, consisting of 46 nationally visible scholars in critical thinking, spent two years defining CT for general education at the lower division college level. Those scholars contributed to the development of the CCTST (Conoley & Impara, 1995, p. 145-146).

To measure media literacy, a test was developed specifically and, to date, exclusively for this study. Scharrer (2002) writes that little research exists to define and test anticipated outcomes from a social science research perspective. She notes a few exceptions, but for the most part research evidence supporting the effectiveness of media-literacy curricula is rare.

One of the exceptions listed by Scharrer is the work of Hobbs and Frost. They have been working to quantify media literacy skill measurement and published a study in *Reading Research Quarterly* which measured the media literacy of Grade 11 students in

an English media/communication course. The research measures for the study examined students' comprehension and message-analysis skills in response to three nonfiction message formats: "reading a print newsmagazine article, listening to a U.S. National Public Radio (NPR) audio news commentary and viewing a television news segment targeted at teenagers"(Hobbs & Frost, pg. 338, 2003). They gathered paper-and-pencil responses to open-ended questions to determine the students' ability to identify purpose, target audience, construction techniques, point of view, omitted information and comparison-contrast.

The measurement device was adapted from the work of Quin and McMahon of Australia who tested a large sample of Australian students to assess different skill levels in analyzing media. No validity or reliability information was published for the Hobbs/Frost measurement, although interrater reliability for the coders was reported at a Cronbach's alpha level of .89 to .93 (Hobbs & Frost, 2003). Using the George and Mallery's (2001) guidelines, this measure would rate as good to excellent. The report provides sample questions in one area and brief descriptions of each area of analysis that will be utilized in the development of a measurement instrument for this study. Efforts were made to contact the researchers to explore the availability of their measurement tool, but neither responded to several inquiries.

### Media Literacy Assessment

The media literacy score was obtained by calculating the sum of scored responses to questions on three forms of media. Following Hobbs and Frost, this study presents for analysis by the subjects information from television, radio, and print sources. Gagne'

(1979) advises that when cognitive strategies are being assessed by means of a lengthy problem-solving task, a number of occasions “must be provided on which the student can display the quality of his performance within this domain of learning outcome” (p. 234). The questions posed are formatted as multiple choice for general recall and as open-ended questions to measure higher levels of analysis or evaluation. In each test for television, radio and print source materials, the questions are worded in a similar fashion to provide for the reliability or dependability required for accurate assessment. The use of three different media analysis situations would seem to be a reasonable minimum to base a reliable assessment of mastery (Gagne, 1979).

The assessment scale or rubric is tailored after work published by Worsnop. In *Assessing Media Work*, Worsnop (1996) provides several assessment scales. The scale most applicable to this research project is the Assessment Scale for Response to Media Texts (p. 76). The scale provides six levels, numbered 0 through 5. For use in this research, a corresponding numeric value has been assigned as points to each of the open-ended questions. Since there will be one evaluator for the project, the rubric will be consistently applied throughout the evaluation. For this study, the following guidelines were utilized:

5—The student integrates personal feelings, reflections and beliefs within the text of their response. The personal response is rooted in the text, has a clear level of understanding of the whole text, and makes connections to other texts.

4—The student connects personal feelings, reflections and beliefs within the text of their response. The personal response refers to the text and conveys a sense of understanding of the text.

3—The student begins to explore personal feelings, reflections and beliefs within the text of their response. The response also makes some connection to the text and is not solely opinion.

2—The student essentially retells or paraphrases the text or makes reference only superficially to personal feelings or experiences. Or the student writes about personal feelings or opinion without connecting to or referring to the text.

1—The student response shows little or no interaction with or understanding of the text.

0—The student response is irrelevant, incomprehensible or nonexistent (Worsnop, 1996).

Since media education is a relatively new curriculum area it will be important to connect the measurement instrument to existing educational theories and practice. Few curriculum theorists are familiar with the field of media literacy. (Scrimshaw, 1992) As noted earlier, the instrument used in this study has been linked to taxonomies of learning such as those established by Bloom and Gagne’.

The stated hypotheses for this study also indicate a desire to measure variables such as media consumption in relationship to media literacy and critical thinking skills. Media consumption was measured in terms of light, medium and heavy usage. The medium designation of 4-7 hours is consistent with average media usage patterns found

in other studies and surveys. The light and heavy designations were then set to bookend either side of medium.

### Statistical Methods

Since the relationship to be examined is bivariate in nature, the study tests for Pearson's product-moment correlation. Huck (2000) states Pearson's is the most frequently used bivariate correlational procedure in situations where there are two quantitative variables that can be measured as raw scores. In addition, Nitko (2001) cites the Pearson index, denoted by  $r$ , as most commonly used to study validity of assessment. Validity is an important consideration given the relatively untested measure that will be employed to score media literacy.

In addition, to examine the secondary hypotheses and to try and strengthen the relationship between the dependent variables, stepwise multiple regressions will be employed. This procedure will help determine which additional variables are significant predictors of high scores on both the media literacy and critical thinking measures. The SPSS statistical package will be utilized to conduct the statistical analysis.

Independent variable data and demographic data for use in the multiple regression portion of the study will be gathered by a brief survey that is focused on the variables identified in the hypotheses section. Again, the purpose is to examine whether a statistically significant relationship exists between media literacy and critical thinking skills.

### Research Design and Procedures

Each measure utilized in the study was administered at separate class meetings, with the survey being given at an initial meeting of the subjects during which the research procedures were explained by the researcher. Students were voluntary participants and

were not penalized for opting out of the experiment. All other research guidelines, including the completion of a mandatory release form, employed by the Duquesne University IRB were followed. The release forms are on file as required by IRB protocol.

The media literacy measurement administered is an unproven test. This administration of the measure serves as a pilot study of the test. The pilot test will allow for a measurement of validity and reliability with post-test statistical analysis and provide an opportunity to eliminate any confusing or irrelevant questions from future uses of the survey instrument. The pilot will allow necessary time limits to be established and provide for the establishment of testing conditions that can be reproduced for future studies.

#### Time Schedule

The researcher utilized the following time schedule for the administration and completion of this project:

November 2004—The measurement components were administered. There was a day in between the implementation of critical thinking and media literacy measures. A 50-minute class period was utilized for each test. The California Critical Thinking Skills Test (CCTST) was administered according to the protocol established by the assessment organization. For the media literacy measure, 15 minutes for each of the three subtests was allotted.

December 2004—Statistical analysis was conducted. CCTST results took approximately three weeks to be obtained from Insight Assessment. Media literacy scoring and analysis



was conducted in the interim. All of the results were then entered into the SPSS statistical package, version 12.0 for analysis and evaluation.

January 2005--The final two chapters of the dissertation were drafted. This process was completed for review and defense on April 7.

## CHAPTER 4

### RESULTS

The following hypotheses were examined for this study:

H1: There will be a statistically significant relationship between college students' scores on a media literacy measure and a critical thinking skills measure.

H0: There will be not be a statistically significant relationship between college students' scores on a media literacy measure and a critical thinking skills measure.

H2: There will be a statistically significant relationship between college students' self-reported level of media literacy education and their scores on a critical thinking skills measure.

H0: There will be not be a statistically significant relationship between a college student's self-reported level of media literacy education and their scores on a critical thinking skills measure.

H3: There will be a statistically significant relationship between the amount of media students consume and their scores on a critical thinking skills measure.

H0: There will be not be a statistically significant relationship between the amount of media students consume and their scores on a critical thinking skills measure.

The media literacy and critical thinking measures were administered in early November 2004. The California Critical Thinking Skills Test (CCTST) was mailed to Insight Assessment in Millbrae, California on November 24<sup>th</sup> for evaluation by the company's Capscore system. The results were returned on December 18<sup>th</sup>. The media literacy measure was scored and coded in the interim.

After reviewing the participant survey, the media literacy measure and the data provided by Insight Assessment, the following data categories were identified and entered into an SPSS 12.0 data file:

- Control Number
- Class Standing
- Gender
- Self-reported Media Literacy Education
- Media Consumption
- College Major
- Primary State for Basic Education
- Media Literacy Score
  - Sub-scale scores for Radio, TV and Print measures
- CCTST Score
  - Sub-scale scores for Analysis, Evaluation and Inference skills

SPSS 12.0 for Windows was used to carry out the data analysis in the areas of correlation and multiple regression. More detail follows, including tables and figures, which presents the research results and any trends which may have emerged from the analysis. This chapter is organized in a manner to discuss each of the bivariate correlational hypotheses pairs. Also, an analysis of variables that may or may not predict both media literacy and critical thinking skills outcomes will follow.

### Research Findings

Hypothesis 1 asks whether there is a significant relationship between scores on a media literacy measure and a critical thinking skills measure. The initial analysis was a Pearson's (r) correlation with a one-tailed test of significance. The one-tailed test was selected since the existing research base provides clear knowledge of the direction of the correlation. The expectation would be a positive correlation between the two variables of the Media Literacy score and the score on the CCTST. Table 4-1 shows the results of the analysis:

**Table 2—Media Literacy/Critical Thinking Correlation**

		Media Literacy Score	Critical Thinking Score
Media Literacy Score	Pearson Correlation	1	.322(*)
	Sig. (1-tailed)	.	.032
	N	34	34
Critical Thinking Score	Pearson Correlation	.322(*)	1
	Sig. (1-tailed)	.032	.
	N	34	34

\* Correlation is significant at the 0.05 level (1-tailed).

A significant positive relationship was found ( $r(34) = 0.322$ ,  $p < 0.05$ ) indicating high scores on the Media Literacy measure related positively to high scores on the CCTST.

Analysis was also conducted to determine if Media Literacy scores correlated to each of the three subsets of Critical Thinking. Insight Assessment provided sub-scores for Analysis, Evaluation and Inference. Pearson's (r) was again applied:

**Table 3—Media Literacy/Critical Thinking Sub score Correlations**

		Media Literacy Score	Analytical Thinking	Evaluative Thinking	Inference
Media Literacy Score	Pearson Correlation	1	.467(**)	.114	.294(*)
	Sig. (1-tailed)	.	.003	.260	.046
	N	34	34	34	34
Analysis	Pearson Correlation	.467(**)	1	.480(**)	.650(**)
	Sig. (1-tailed)	.003	.	.002	.000
	N	34	34	34	34
Evaluation	Pearson Correlation	.114	.480(**)	1	.671(**)
	Sig. (1-tailed)	.260	.002	.	.000
	N	34	34	34	34
Inference	Pearson Correlation	.294(*)	.650(**)	.671(**)	1
	Sig. (1-tailed)	.046	.000	.000	.
	N	34	34	34	34

\*\* Correlation is significant at the 0.01 level (1-tailed).

\* Correlation is significant at the 0.05 level (1-tailed).

A significant positive correlation was reported between Media Literacy and Inference, with a highly significant correlation between Media Literacy and analytical thinking or Analysis.

Insight Assessment states the Inference category on the CCTST includes the sub-skills of examining evidence, proposing alternatives and drawing conclusions. It is one of the three sub-scores added to determine the sum Critical Thinking score. It also represents the largest portion of the total score, accounting for 16 of the maximum 34 points available on the overall measure (Insight, 2003).

Analysis on the CCTST has dual meaning. The first definition includes such sub-skills as decoding significance and clarifying meaning. The term also represents such

sub-skills as detecting arguments and analyzing arguments into their component parts (Insight, 2003).

Evaluation also has a dual meaning when used in relation to the CCTST. Sub-skills for this area include assessing claims and arguments, justifying procedures and presenting arguments (Insight, 2003). The Pearson's analysis does not indicate a significant correlation between the Media Literacy measure and the Evaluation segment of the CCTST. Evaluation represents 11 of the 34 available points on the critical thinking measure.

Hypothesis 2 calls for the examination of the relationship between college students' self-reported level of media literacy education and their respective scores on the CCTST. A student's level of media literacy was determined by taking a sum score of their responses to questions pertaining to their exposure to formal media literacy instruction on a pre-test questionnaire. Again, Pearson's one-tailed significance was used to examine the relationship between the variables. The results did not indicate a significant relationship ( $r(33) = .171, p = .341$ ) between the two variables in question.

A more detailed analysis categorizing the perceived type of media literacy education (informal vs. formal) was also performed. There was not a significant relationship identified between the various media literacy education responses and the critical thinking score ( $r(33) = .063-.170, p = .172-.363$ ). Most of the students ( $n = 25$ ) indicated at least some self-perceived formal education in media literacy, in many cases reflecting their enrollment in the course in which the experiment was conducted.

Hypothesis 3 looks to determine if there is a significant relationship between the amount of media consumption and their scores on a critical thinking measure. This time, Pearson's two-tailed significance was utilized since previous research does not provide a clear indication of the direction of the correlation between these two variables. As with the second pair, a significant relationship was not identified ( $r(33) = .023$ ,  $p = .897$ ). This may be attributed to the large majority of students ( $n=28$ ) that reported medium (4-7 hours per day) media consumption.

**Table 4—Media Consumption and Critical Thinking**

		Media Consumption	Critical Thinking Score
Media Consumption	Pearson Correlation	1	.023
	Sig. (2-tailed)	.	.897
	N	33	33
Critical Thinking Score	Pearson Correlation	.023	1
	Sig. (2-tailed)	.897	.
	N	33	34

This study was also designed to examine whether any of a number of other variables influence media literacy and critical thinking skills. The following tables show the ANOVA and Coefficients for the most significant independent variables:

**Table 5—ANOVA—Media Literacy as Dependent**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	617.279	5	123.456	1.727	.162(a)
	Residual	1930.236	27	71.490		
	Total	2547.515	32			

a Predictors: (Constant), Critical Thinking Score, College Major, Media Literacy

Education (More Formal), State/Educated, Media Literacy Education (Formal)

b Dependent Variable: Media Literacy Score

**Table 6—Media Literacy Coefficients**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	35.669	5.297		6.733	.000
	Media Literacy Education (Formal)	3.756	3.007	.260	1.249	.222
	Media Literacy Education (More Formal)	6.134	4.220	.269	1.453	.158
	College Major State/Educated	.115	.089	.218	1.293	.207
	Critical Thinking Score	-.011	.046	-.047	-.240	.812
		.417	.276	.273	1.508	.143

a Dependent Variable: Media Literacy Score

**Table 7—ANOVA—Critical Thinking as Dependent**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	229.192	5	45.838	1.434	.244(a)
	Residual	863.354	27	31.976		
	Total	1092.545	32			

a Predictors: (Constant), Media Literacy Score, State/Educated, College Major, Media

Literacy Education (More Formal), Media Literacy Education (Formal)

b Dependent Variable: Critical Thinking Score



**Table 8—Critical Thinking Coefficients**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	6.457	5.664		1.140	.264
	Media Literacy Education (Formal)	2.508	2.012	.265	1.247	.223
	Media Literacy Education (More Formal)	.938	2.925	.063	.321	.751
	College Major	-.006	.061	-.019	-.106	.917
	State/Educated	.050	.029	.323	1.713	.098
	Media Literacy Score	.186	.124	.285	1.508	.143

a Dependent Variable: Critical Thinking Score

No significant relationships were indicated as a result of the multiple regression calculations, although the significance of the connection between the media literacy and critical thinking scores begins to approach the .10 level in this model.

As a control measure, independent sample t tests were used to analyze whether there were statistical differences between variables such as gender, college major, and the state where students primary education was provided, and media literacy and critical thinking scores. For the media literacy measure, there was a significant difference recorded between the mean scores for males and females.

**Table 9—Media Literacy by Gender**

	Gender	N	Mean	Std. Deviation	Std. Error Mean
Media Literacy Score	Male	13	42.69	8.976	2.489
	Female	20	51.65	7.066	1.580

**Table 10—Independent t-test for Media Literacy/Gender**

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Media Literacy Score	Equal variances assumed	.610	.441	-3.199	31	.003	-8.958	2.800	-14.669	-3.246
	Equal variances not assumed			-3.038	21.419	.006	-8.958	2.948	-15.082	-2.833

As a result of the independent t-test to control for gender, a partial correlation controlling for the gender variable was conducted. The analysis shows that the significance of the correlation between the scores on the media literacy measure and the CCTST was not impacted by the variance in means by gender of the media literacy scores.

**Table 11—Partial Correlation controlling for Gender**

Control Variables			Media Literacy Score	Critical Thinking Score
Gender	Media Literacy Score	Correlation	1.000	.457
		Significance (2-tailed) df	. 0	.009 30
	Critical Thinking Score	Correlation	.457	1.000
		Significance (2-tailed) df	.009 30	. 0

Media literacy means analyzed by the state in which the subjects received their basic education also showed some additional variance. Pennsylvania-educated students scored lower on average on both the media literacy and critical thinking score measures.

**Table 12—Critical Thinking and Media Literacy by State Educated**

State/Educated		N	Mean	Std. Deviation	Std. Error Mean
Critical Thinking Score	Pennsylvania	21	18.24	5.291	1.155
	Other	13	19.62	6.577	1.824
Media Literacy Score	Pennsylvania	21	46.76	9.944	2.170
	Other	13	49.77	6.747	1.871

The final independent t-test analysis was conducted on the basis of college major. Communication majors and those subjects outside of the discipline scored virtually the same mean on the media literacy measure. That is contrary to the finding on the CCTST, where non-Communication majors averaged nearly 2.5 points higher.

**Table 13—Critical Thinking and Media Literacy Means by College Major**

	College Major	N	Mean	Std. Deviation	Std. Error Mean
Critical Thinking Score	Communication	15	20.13	5.854	1.511
	Other	19	17.68	5.598	1.284
Media Literacy Score	Communication	15	47.87	7.367	1.902
	Other	19	47.95	10.102	2.318

### Summary

The results of the statistical analysis lead the researcher to conclude that there is evidence to support at least one of the research hypotheses. There does appear to be support for the belief that media literacy can lead to improved critical thinking skills as measured by the tests utilized for the study. The significant correlation between the scores on each of the measures support the belief that there is a significant relationship between scores on the media literacy and critical thinking skills tests administered.

There was not sufficient evidence to support the remaining research hypotheses. Quantitative data does not indicate a significant relationship between college students' self-reported level of media literacy education and critical thinking skills. The data also does not support the notion of a significant relationship between the amount of media students consume and their scores on a critical thinking skills measure.

## CHAPTER 5

### INTERPRETATIONS, CONCLUSIONS AND IMPLICATIONS

The purpose of this study was to provide some quantitative research data in a field where the body of formal literature is rather light. Some scholars in textbooks, professional publications and other venues have indicated or assumed a connection between media literacy and critical thinking skills. While their suppositions seem valid, there is little research to support those beliefs. Through a media literacy measure administered to a sample of college students this paper does support with quantitative data the connection between media literacy and critical thinking skills that has been assumed by other researchers.

A measure of media literacy skills was developed based on the educational and assessment philosophies of Bloom and Gagne'. The results of that measurement were compared to the results of the California Critical Thinking Skills Test (CCTST). The correlation between the scores proved to be statistically significant, therefore supporting one of the three research hypotheses. It is that result, coupled with other observations, which will be the focus of the concluding chapter.

The other two research hypotheses could not be directly supported by the data gathered in this study. The amount of self-reported media literacy education and the amount of self-reported media consumption was not found to be related in a statistically significant way to scores on the CCTST. Those results do provide the basis for future research questions and study.

### Statement of Problem

After reviewing the literature the need for a quantitative study to examine the relationship between media literacy and critical thinking skills became very apparent. The development of critical thinking or analytical skills as a result of media literacy education has been assumed by a number of scholars working in the field. Evidence to support that assumption has been less frequent. This study attempted to determine whether there is a significant relationship between scores measuring media literacy and critical thinking skills in the hopes of establishing a correlation between media literacy education and critical thinking abilities. Once a correlation has been established in the literature researchers may then begin to explore whether causality between the two skills sets exist.

### Interpretations

The data gathered for this study support the suggestion that media literacy education can help students develop critical thinking skills. Analyzing scores from a newly developed media literacy measure and scores on the California Critical Thinking Skills Test (CCTST) with a one-tailed Pearson's (r) correlation, a statistically significant relationship at the  $<.05$  level was determined. The  $p <.05$  level of significance is the most frequently cited level (Huck, 2000). This finding helps provide support for the previous assumption of a connection between the two processes.

When analyzing the critical thinking data even further a stronger correlation between media literacy and analytical thinking was determined. The CCTST provides sub-scores that include the area of analysis. A comparison of the media literacy scores

with the analysis sub-scores produced a highly significant statistical relationship at the .003 level. The finding provides support for the pre-existing assumption that media literacy is a process of analytical thinking. Analysis is also one of the four core components of the consensus definition of media literacy established at a National Leadership Conference in 1992.

Evaluation is another of the four core components of media literacy. In the examination of the sub-scores for Evaluation a statistically significant correlation was not found. Analysis and Evaluation are strongly related according to the CCTST data. Why this study did not find a similar correlation between media literacy and evaluation as it did for media literacy and analysis is an area for future study. One possible explanation for the discrepancy is the omission of any questions on the media literacy measure that asks subjects to justify their reasoning. Insight Assessment's definition of evaluation is based on the assessment of credibility of statements and on the ability to "present one's reasoning in the form of cogent arguments" (p. 1). Future versions of the media literacy measure may consider adding a question dealing with why a particular conclusion was reached. The addition could help to better align the two measures. Another possible adjustment would be to breakdown the media literacy measure into subscales for a more detailed analysis similar to the analysis conducted on the CCTST.

The second hypothesis guiding the study posited a statistically significant relationship between self-reported media literacy education and critical thinking skills. The statistical analysis did not find support for the hypothesis. An observation as a result of coding the survey that accompanied the measures is that many college students are not

aware of any media literacy education prior to coming to campus. Over half (57.6%) did not report receiving media literacy education during their basic educational experience. Nearly 70% seemed to recognize the course in which the study was carried out as a formal media literacy educational experience. This interpretation of the data is important in the context of media literacy advocates pointing to the presence of media education in the core curricular frameworks of all 50 states (Kubey, 2004). There apparently is little importance placed on the media education, at least explicitly, since many students do not realize they are being exposed to such instruction.

The third hypothesis tested a statistically significant relationship between self-reported media consumption and critical thinking scores. Nothing was found in the literature to indicate such a relationship could exist. The two-tailed Pearson's supported the null hypothesis.

Again the analysis provides some interesting information. Nearly 85 percent of the respondents indicated medium (4-7 hours) media consumption. The few responses on the high and low end of the scale limited the scope of the comparison. While the comparison with critical thinking skills scores was limited by the sample size, the consumption reported is consistent with the declaration that "they (and we) easily devote one-third to one-half of our waking lives to the electronic media" (Kubey, 2004, p. 22). It may also be possible students do not realize the total amount of time they spend with media. In reality, there may have been more heavy media users in the study's pool of participants than was acknowledged in the self-reporting section of pre-testing survey



that was conducted. An important media literacy component is getting consumers to realize just how much time and what a significant role the media occupies in their lives.

The data gathered for this study provides a preliminary foundation for the examination of the relationship between the emerging field of media literacy and the more established, although still somewhat undefined field of critical thinking. While critical thinking is more recognized among educational administrators, there is an apparent lack of clarity in terms of how to provide instruction in that area. The results of this study indicate media literacy education can be one means of developing or improving a student's critical thinking abilities.

### Conclusions

There are a number of conclusions that can be reached as a result of undertaking this study. Some may be directly related to testing phase of the project, while others stem from the literature review, anecdotal evidence and other ancillary aspects of the research conducted to complete the dissertation. The conclusions also lead to a number of recommendations for ongoing research in the area of media literacy.

Based on the data gathered in the quantitative portion of this project, media literacy education can be a valuable tool in aiding the development of critical thinking skills. A statistically significant positive correlation between performance on a media literacy measure and a critical thinking skills measure was found. The relationship would indicate a similarity between each subject's materials. Therefore, providing instruction in media literacy would help further the educational goals and objectives of many

institutions of higher education that strive to develop critical thinkers or critical thinking skills as part of their overall curriculum.

This research finding is consistent with one of the conclusions reached by Feuerstein. She stated: “As pupils increase their experience with media literacy they will demonstrate greater capability in media analysis and critical thinking skills” (Feuerstein, 1999, p. 51). Her research was to further explore the extent to which the critical thinker is able to continue independent analysis even with separation from the original learning situation and its guiding educator. Should this concept be supported, it would provide evidence that the critical thinking skills developed by media literacy education can remain with a student well beyond the length of the class. A search for additional publications by Feuerstein in the 6 years since her original research was published did not turn up additional information.

Five years ago the 29<sup>th</sup> General Conference of the United Nations Educational and Scientific and Cultural Organization (UNESCO) touted media education as the “entitlement of every citizen, in every country in the world” (Kubey, 2004, p. 21). While some researchers have indicated the presence of media education elements in the core curricular frameworks of all 50 states, the results of a survey conducted within this study shows that if the current cohort of college-age students is receiving formal media education, school districts and teachers are not explicit about the concepts they are teaching. If the sample’s answers are an accurate representation, a majority of the students are not receiving the media education experiences to which they are entitled.

Since educators are often working to deliver educational experiences that promote critical thinking, what better way to deliver such experience than to directly relate them to cultural institutions with which they spend such a large portion of their waking hours? If majority of college students are spending 4-7 hours a day with the media as the pre-test survey indicates, then what better way to tie classroom instruction with experiences that are occurring outside of school each day? This observation can be applied to students at both the basic and higher education levels.

Scharrer (2002) writes: "It is necessary to move beyond implicit assumptions about the benefits such efforts (media literacy education) can achieve and toward their explicit definition and measurement" (p. 354). Media literacy advocates need to be more explicit about the educational opportunities in the field that are being offered and the benefits such instruction provides, and they should participate in a process to develop national standards for media-literacy assessment. While the sample size (n=34) for this study may be somewhat narrow, the measurement device for media literacy that was developed represents at least a starting point for future efforts in bringing widespread recognition and acceptance of media literacy education in this country. The media literacy test administered also looks to determine whether students are asking critical questions about media messages and to establish the level of engagement with the messages that students are experiencing.

Since there are few quantitative studies in circulation, the media literacy measure developed for this project is significant in several ways. The test provides a means of gauging where an individual's current state of media literacy. The few measures

uncovered during the literature review process were developed to take measurements surrounding a particular media education curriculum- for example, whether a media violence lecture or course was successful in addressing the goals and objectives of the instructors, rather than gauge a more general level of media literacy.

The measure utilized in this study was also successful in showing that a disparity in media literacy exists in a sample of college students. The test could be utilized in a number of situations and scenarios to plot a baseline media literacy mark and to determine an individual's relationship to the mean. The range of scores also is consistent with educational expectations for a range of ability levels. Some studies have concluded a student's media literacy improves with focused instruction on the concepts. The measure included in this study can also be implemented in a pre- and post-test manner to gauge improvement.

The media literacy test developed here is not specific to a particular educational goal or objective other than measuring or plotting a student's media literacy level. Unlike Hobbs (2003) study, for example, which examined the integration of media-literacy instruction within a yearlong course in high school English language arts. Her measurement was also concerned with the development of students' message comprehension, writing, and critical thinking skills.

The results of this study also found the mean score for female students to be higher than males. Quin and McMahon (1995) published similar findings after testing over 1400 Australian high school students in 1991. They offered general literacy as a possible explanation since students were required to read questions and provide written

answers. Other Australian Monitoring Standards tests had revealed female students in their subject pool had superior literacy skills to their male counterparts.

Additional discussion to insure the inclusion of media education in the basic as well as higher education curriculum for all students in the United States is still necessary. A majority of the respondents to the survey portion of this study either did not receive or were unaware of media literacy education during their elementary and secondary education experience. If for whatever reason basic education institutions are unable or unwilling to provide media literacy instruction, higher education venues should be an obvious place to look for the inclusion of such learning experiences. Many institutions of higher education tout critical thinking as a skill provided as part of their curriculum. Since a relationship between media literacy and critical thinking has been established, formal media education classes would be a viable option for colleges and universities to deliver, via their curriculum, on this promise. Media literacy advocates should not be satisfied at just the inclusion of media literacy language or requirements in the core curriculum frameworks of the 50 states. The implementation of instruction that actually corresponds with the state objectives must now be formalized.

One area of higher education where media literacy should be introduced is in schools of education. Hobbs (2004) writes: "Because even young teachers are often not experienced with how to analyze visual or electronic messages, and do not themselves know how to create messages using media and technology, strengthening young people's media literacy skills in the 21<sup>st</sup> century will continue to be an enormous challenge" (p. 56-57). As educators passionate about media literacy continue to spread their message, it

is important to consider ways to educate future teachers and parents about the importance of the field.

Anecdotally, the limited circulation and familiarity of the term media literacy should be noted. In catalog searches, “media literacy” often results in a limited number of hits. Specifically, in the case of Cumberland County, Pennsylvania, the search term resulted in no matches within the county’s library system. Cumberland County is a blend of suburban and rural communities just to the west of the state capitol, Harrisburg. The fact that the system lists no resources in such a vital area is somewhat alarming. But that fact also illustrates the limited circles in which media literacy is discussed. Far more needs to be written and circulated regarding the value of media literacy and the importance of providing more education in this area.

#### Limitations

The author recognizes there are limitations to the inferential claims that can be made as a result of the data gathered from a sample size of 34. However, while the measures were administered in a Communication course, 44% of the respondents representing at least 5 other majors were present in the sample. Also, at least nine different states and at least two other countries were represented in the sample as well. Huck (2000) writes, “It is the quality of the sample (rather than its size) that makes statistical inference work” (p. 133). Therefore, while the sample was one of convenience there is evidence that it is representative of the college campus from which it was selected.

It is also noted that the results of the correlation between media literacy and critical thinking skills did not control variables such as grade point average or grade received/expected in the class. Such a control was not considered in the development of the study, but could be included in future studies to ensure the test results are not a result of another academic variable or intelligence factor.

This dissertation study was designed as a starting point for future quantitative efforts in the area of media literacy measurement. It should be recognized as a preliminary effort or foundational point for further development and sophistication. Because of the lack of literature reflecting anything of this nature being conducted in the past, this study should be read as a conversation starter as the field of media literacy continues to mature.

### Recommendations

The study carried out and reported in this document provides the basis for further study in the area of media literacy measurement. Researchers in the past have indicated a need and desire for quantitative approaches to media literacy. Much of the past published material has been primarily qualitative in nature, aimed at middle school students, or somewhat limited in scope. The media literacy measure developed for this study is applicable to students on a number of levels, including those beyond formal education. Because it is based on educational principles that are widely recognized and because it is adaptable in terms of the messages it analyzes, the media literacy test piloted here can be adapted and replicated by other researchers without difficulty. Should the measure gain

wide acceptance it would provide a universal means of gauging an individual's media literacy.

Media literacy education should become a widely accepted means of developing critical thinking among college students. The correlation between media literacy and critical thinking indicates the former may be a viable way for delivering a skill set that colleges and universities strive to provide as part of their educational goals and objectives. Some advocates even argue such an educational experience is an entitlement, although data gathered for this study indicates not all students are receiving or are aware of such an experience as part of their formal education.

As we try and increase the relevancy of educational programs for students, it should also be noted again that teaching media literacy in the classroom closely correlates to what students at many educational levels are doing outside of school. Again, noting anecdotally, students in another course of this researcher reported contact with the media upwards of 20 hours in a 30-hour period as logged for a class exercise. There is little doubt that making coursework relevant succeeds in improving the learning potential of students of all ages.

Finally, further advocacy for the field of media literacy needs to occur. Some accomplishments have been noted from the literature that has been amassed over the last decade. But while those advancements should be noted, there is also a body of literature that reiterates hopes and goals for the field that were stated years ago. More needs to be done to educate the general public about the impact such educational situations can have. It seems as media consolidation continues in this country, there are fewer and fewer



mentions of media literacy in the mainstream media. Divisions among advocates, academics, educators and others promoting media literacy need to be closed so that energies can be spent bring about more substantial positive accomplishments in the field.

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APPENDIX A  
PRE-TEST SURVEY

Control #: \_\_\_\_\_

Class Standing:      Freshman              Sophomore              Junior              Senior

Gender:      Male              Female

Previous media literacy education:

NONE

Some exposure: in Grade School / High School / College

Formal class: in Grade School / High School / College

More than one formal class

Media Consumption:

Light—(0-3 hours per day)

Medium—(4-7 hours per day)

Heavy—(7+ hours per day)

College major: \_\_\_\_\_

State/Country where most of your previous education occurred: \_\_\_\_\_

APPENDIX B  
RADIO MEASURE



**Radio Measure—The Virtues of Leisure**

Control # \_\_\_\_\_

1. Which Greek philosopher was referred to in the story?
  - a. Plato
  - b. Hercules
  - c. Aristotle
  - d. Socrates
  
2. Author Al Gini is from which university?
  - a. Loyola Marymount
  - b. Loyola in Chicago
  - c. Loyola in Louisiana
  - d. Mount St. Mary's
  
3. \_\_\_\_\_ was referred to as a character flaw.
  - a. Leisure
  - b. Laziness
  - c. Maturity
  - d. Work
  
4. According to the story, we equate \_\_\_\_\_ with being busy.
  - a. play
  - b. work
  - c. importance
  - d. leisure

5. Al Gini suggests we \_\_\_\_\_ before we recreate.
- a. work
  - b. read
  - c. think
  - d. rest

Please briefly summarize the message:

What is the purpose of the message? (check all that apply): \_\_\_to inform, \_\_\_to persuade, \_\_\_to entertain, \_\_\_self-expression, \_\_\_to teach, \_\_\_to make money.

Identify the sender of this message. Where did the information originate?

What information or points of view may be missing from this message?

How does the sender attract and hold your attention? (check all that apply): \_\_\_the use of sound, \_\_\_multiple voices, \_\_\_word choices, \_\_\_expert opinion \_\_\_music. Others:

What does this information suggest about the place of leisure in 21<sup>st</sup> Century America?

How has this message changed what you believe about the way you utilize your leisure time?

APPENDIX C  
TV MEASURE

**Television Measure—Sacred Noise**

Control # \_\_\_\_\_

1. *Sacred Noise* is set in
  - a. Los Angeles.
  - b. New York City.
  - c. Philadelphia.
  - d. Toronto.
2. *Sacred Noise* is
  - a. a sound effects library.
  - b. a company that shoots commercials.
  - c. a commercial music company.
  - d. a Canadian media company.
3. Employees of *Sacred Noise* “steal” sounds from
  - a. their own recording libraries.
  - b. the television.
  - c. the radio.
  - d. laser discs of movies.
4. To make sounds their own, *Sacred Noise*
  - a. records noises in the field.
  - b. manipulates sounds they’ve acquired elsewhere.
  - c. pays or trades for sounds they’ve acquired.
  - d. all of the above.

5. The commercial discussing turkey breasts was for what company?
- a. Purdue
  - b. Gold Star
  - c. Boarshead
  - d. Armour

Please briefly summarize the message:

What is the purpose of the message? (check all that apply): \_\_\_to inform, \_\_\_to persuade, \_\_\_to entertain, \_\_\_self-expression, \_\_\_to teach, \_\_\_to make money.

Identify the sender of this message. Where did the information originate?

What information or points of view may be missing from this message?

How does the sender attract and hold your attention? (check all that apply): \_\_\_the use of color, \_\_\_lighting, \_\_\_movement, \_\_\_the use of sound, \_\_\_camera angles, \_\_\_music.

What does this information suggest about the use of sound effects and music in television commercials?

How has this message changed what you believe about the way in which television commercials are made?

APPENDIX D  
PRINT MEASURE

**Print Measure—New Leash on Life**

Control # \_\_\_\_\_

1. The prison inmates raise dogs for
  - a. breeding.
  - b. guide dogs.
  - c. police dogs.
  - d. a & b.
  - e. b & c.
  
2. The inmates care for the dogs for
  - a. 8 weeks.
  - b. 12 months.
  - c. 16 months.
  - d. 24 months.
  
3. Puppies Behind Bars operates in \_\_\_\_\_ prisons.
  - a. 6
  - b. 8
  - c. 10
  - d. 4
  
4. The program has been in existence for \_\_\_\_\_ years.
  - a. 7
  - b. 9
  - c. 8

- d. 4
5. \_\_\_\_\_ pet food company donates food for Puppies Behind Bars.
- a. Purina
- b. Dads
- c. Iams
- d. Milk Bone

Please briefly summarize the message:

What is the purpose of the message? (check all that apply): \_\_\_to inform, \_\_\_to persuade, \_\_\_to entertain, \_\_\_self-expression, \_\_\_to teach, \_\_\_to make money.

Identify the sender of this message. Where did the information originate?

What information or points of view may be missing from this message?

How does the sender attract and hold your attention? (check all that apply): \_\_\_the use of language, \_\_\_ quotes, \_\_\_ expert opinion, \_\_\_ human interest, \_\_\_ emotions. Other:

What does this information suggest about the relationship between prison inmates and the raising of dogs for use by those with sight impairments?



How has this message changed what you believe about the rehabilitation of inmates in prisons?