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# Virtualizing The Word: Expanding Walter Ong's Theory Of Orality And Literacy Through A Culture Of Virtuality

Jennifer Camille Dempsey

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VIRTUALIZING THE WORD: EXPANDING WALTER ONG'S THEORY OF  
ORALITY AND LITERACY THROUGH A CULTURE OF VIRTUALITY

A Dissertation

Submitted to the School of Education

Duquesne University

In partial fulfillment of the requirements for  
the degree of Doctor of Education

By

Jennifer Camille Dempsey

May 2014

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Jennifer Camille Dempsey

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Approved March 4, 2014

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## ABSTRACT

# VIRTUALIZING THE WORD: EXPANDING WALTER ONG'S THEORY OF ORALITY AND LITERACY THROUGH A CULTURE OF VIRTUALITY

By

Jennifer Camille Dempsey

May 2014

Dissertation supervised by Dr. Gary Shank.

This dissertation seeks to create a vision for virtuality culture through a theoretical expansion of Walter Ong's literacy and orality culture model. It investigates the ubiquitous and multimodal nature of the virtuality cultural phenomenon that is mediated by contemporary technology and not explained by pre-existing cultural conventions. Through examining the theoretical underpinnings of orality and literacy culture, the dissertation explores the cultural shift that is just beginning to restructure human consciousness through the ways that society is connecting, exploring and communicating. Further, this dissertation examines the contrasts between virtuality culture features and those related to traditional literacy and orality types, including the gap between the theory of secondary orality and virtuality culture. This dissertation also proposes three ways that contemporary technology creates human presence related to virtuality culture. Finally, this dissertation describes the broad implications for the evolution of virtuality culture in

areas such as education, technology, literacy, philosophy, politics, linguistics, ethics, history, the arts and cultural studies.

## DEDICATION

I dedicate this dissertation to a very special group of women. This work could not have been completed without their support and friendship. In honor of Alice, Angel, Brooke, Candie, Cheri, Emily, Fadumina, Holly, Jeanette, Jenny, Jessica, Kathy, Marie, Melissa, Mindy, Sarah, Shelley, Tara, and Vanessa - You have been there during the most challenging times encouraging me to stay focused and finish this work. There were days where I remembered all that you have accomplished, which helped me find the courage and determination to keep going during the rough patches. Thank you also to Sue for your leadership, support and encouragement. I am grateful for all the times you guided me and reminded me that everything just “takes the time.” Thank you also to Maureen for encouraging me to keep moving forward and to stay focused on what I want in my life. I am grateful to you for your leadership, support and caring. You are all such an inspiration. I am so blessed that you are in my life. May this work remind you that anything is possible. Love you ladies!

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CHAPTER I  
INTRODUCTION

Finding The Ground

Contemporary culture is just beginning the process of restructuring human consciousness. This awareness is based on an understanding how cultures have evolved throughout history, along with how technology has impacted human communication and expression. As the theoretical underpinning, this dissertation will explore Walter Ong's conceptions of primary orality and literacy cultures (Ong, 1982/2002). It will explore how the cultural shift in human consciousness from orality to literacy can inform the current transition from literacy to a "virtuality" culture. This phenomenon is mediated through a myriad of contemporary and emerging technologies. This dissertation also includes building upon Ong's framework through defining the communicative and expressive features related to contemporary virtuality culture. These newly identified features may then influence the future direction of cultural studies including areas such as communication, education, history and philosophy.

Historically, human consciousness first became literate through the influence of grounded oral traditions. At that time, literacy was a tool for extending orality, in a way that is similar to how technology now mediates literacy and the other features of our contemporary culture. However, this transition from oral culture, to a merger of orality and literacy, to primarily literacy alone, and currently to literacy mediated by technology, has taken centuries to occur (Ong, 1982/2002). As literacy became more commonly recognized, our consciousness expanded and the purposes of education were restructured to create a transition from a dominant culture of orality to one of literacy.

This is particularly important to consider when considering Ong's (1982/2002) idea that writing restructures consciousness (p. 77). When Walter Ong observed this shift from orality to the beginnings of literacy, it was not just a shift in modality, but also a paradigm shift because of the ways that humans began to think differently. Therefore, human thinking was completely restructured as a species because of the nature of writing. In the shift to virtuality, it appears that contemporary culture is thinking differently as a species as we collectively educate each other in more immersive ways. This cannot be explained through traditional approaches to literacy and orality. Virtuality culture is also not constrained by features of orality and literacy, although they are certainly informed by them. Also, although virtuality culture can be mediated by and actualized through contemporary technology, virtuality is not constrained by it, because virtuality possesses the quality of potentiality already evident within culture. Also, they are also not bound to the characteristics of secondary orality culture (Ong, 1982/2002). The features of contemporary culture have not been realized and therefore need to be defined.

### The Emergence of Virtuality Culture

In beginning this process, the work of this dissertation attempts to create a rationale for how contemporary technologies might be used to mediate the experiences that are necessary to create broad and culturally relevant contexts for learning. It attempts to do this through exploring the features of thought and expression as they relate to the emergence of contemporary culture, which appears to be evolving from a primarily literacy-base to virtuality-base. This work expands upon Walter Ong's framework for orality and literacy. It is the backdrop of important cultural history defined by Ong that has allowed for the development of virtuality culture to begin. In this beginning process

of creating a grounded situation model, it is important to recognize that human beings are communicating with each other using contemporary technologies in ways that have not been previously possible. Considering the vast landscape of contemporary technology tools, there are many ways to facilitate human communication and expression with immediacy and intention, both internally and externally as we connect to the greater culture, or what McLuhan conceptualized as the “*Global Village*” (McLuhan & Powers, 1986/1989). In describing virtuality culture it should be noted that this dissertation is not merely providing a contemporary definition of technology. The expansion of this idea will be discussed in more in detail in Chapter three.

Our transition from an educational culture of technology-mediated literacy to one that is more “virtuality” dominant will take time. Evidence of this includes the centuries of ancestral communities who have passed ideas on to new generations through stories, informing both oral and literacy cultures (Thornburg, 1996). Although contemporary technology may have taken inspiration for some its foundations in the primordial elements of storytelling, virtuality is not exclusively dependent upon these traditions.

Contemporary technology now finds itself in a similar place to literacy during its infancy, in the same way that orality cultures matured into ones more focused on literacy as a result of the influences of reading, writing and text. This growth was a precursor to virtuality culture that is not limited, and has included as an early sign of expansion, the technologizing of the terms and features of literacy and orality (Ong, 1982/2002). This can be seen in some of the new dynamics created in the technology-mediated natural forms of multisensory communication such as: dramatization, debate, dialogue, video and storytelling. Developing new pathways and approaches to technology-mediated

environments, communication, and expression is essential to support culture in adapting to the evolving nature of virtuality.

### Beginning This Theoretical Quest

To begin this journey, Chapter two will honor the legacy of Dr. Walter Ong, the scholar who illustrated the connection between orality and literacy culture, and inspired the new concept of virtuality culture. In section 1 will briefly introduce Ong's life and work, including his seminal works related to orality and literacy culture. This includes a summary in Table two of what Ong (1982/2002) defines as the 'features of orally based thought and expression' in his book entitled *Orality and Literacy*. A brief introduction of his work related to rhetoric and the origins of consciousness appears in the section to follow. These concepts helped to provide a historical context for rhetoric, which has implications for future research related to virtuality culture. Chapter two also includes an overview of Ong's interest in the medieval period relative to the evolution of culture. Ong believed the time period was instrumental in stimulating the particular human mindset that created the backdrop for the development of the communications and technologies that flourished during the Renaissance, and which have become even more sophisticated today. The next section explores the evolution of literacy cultures, which is essential to understanding the underpinnings of traditional literacy, as well as the historical and theoretical constructs of contemporary culture. This is an essential part of Walter Ong's theoretical work, and thus, is crucial to this expansion of his work. What follows in Chapter two are the "features of literacy based thought and expression" which like the "features of orally based thought and expression," have been extracted from Ong's *Orality and Literacy* (1982/2002) text. These literacy features appear in Table two.

Next a brief overview of secondary orality, Ong's hypotheses related to what he believed was mediated through the popularity of electronic communication devices such as television, the telegraph and the telephone will be described. This dissertation's primary function is to address a gap between where Ong's work left off with the notion of "secondary orality" and the newly defined term of "virtuality culture." The distinctions between secondary orality and virtuality culture will be more thoroughly outlined in Chapter three.

Next, in chapter two, the topic of communication and human consciousness will be explored by introducing the reader to the Shannon-Weaver Theory of Communication. Although this theory does not directly relate to Walter Ong's work, it is a definition that can inform communication as it relates to orality, secondary orality and virtuality. This approach to information theory will support the expansion of Walter Ong's work and its application to the more diverse forms of communication present in contemporary culture. What follows is an overview of the importance of mechanized imagery and text in communication," which in all its varied forms, helped suggest the direction of the contemporary history of human communication and expression. A short explanation of virtual rhetoric is provided in the section that follows.

In creating a theoretical expansion to include virtuality culture, it is important to define the terms, 'virtual' and 'virtuality.' An overview of these terms, along with the definitions that are used in this dissertation with a particular emphasis on Peirce's (1902) seminal version, also appear in Chapter two. What should be clear about the definitions is that the history of virtuality in the context of contemporary culture is a fairly recent phenomenon however, the original ideas can be traced back to Aristotle.

Chapter two also contains definitions of appropriate technology terms, beginning with a definition of technology provided by Ong (1982/2002), as it is compatible with the themes of this dissertation. Considering the impact of the cultural evolution for both “digital natives” and “digital immigrants,” terms used freely in our contemporary culture, the definitions will be provided. Finally, the terminology related to technology concludes with a definition of Technological Pedagogical Content Knowledge (TPACK). This approach to integrating contemporary technology into learning experiences includes an overview of the model, which is referenced more fully in Chapter four as it relates to implications and suggestions for future research.

Chapter two is concluded by introducing terminology related to the complicated nature of literacy at the intersection of contemporary technology and cultural practice. This includes background related to Ong’s (1982, 2002) exploration of literacy as it relates to the current shift towards a literacy-virtuality consciousness. This section provides a context for defining “literacized” technology terms related to a contemporary interpretation of Ong’s “technologizing the word.” Key terms found in the literature, included in Table 3, are: cyberliteracy, digital literacy, electronic literacy, gaming literacy, graphic/visual literacy, hypermedia/branching literacy, information literacy, media literacy/multimedia literacy/new media literacy, metaliteracy, multimodal literacy/multiliteracy, postliteracy, reproduction literacy, socio-emotional literacy, technological literacy, teleliteracy and transliteracy. The terms are briefly defined and illustrate the complex nature of describing the convergence between literacy culture and the evolutionary nature of virtuality culture. Although this list is comprehensive and describes some of the current trends related to both literacy and virtuality, it is important

to point out that it is beyond the scope of this dissertation to catalogue and define all of the available and potentially relevant terms.

Chapter three begins with an outline of the theoretical task and a vision for expanding Walter Ong's orality and literacy discussion to include virtuality culture. Next, theoretical analysis is described as the chosen methodology. This also involves an alignment of the literacy and orality inventories of thought and expression with those constructed in the investigation of virtuality culture. This comparison of orality, literacy and virtuality inventories appears in Table 4. The next section of Chapter three includes a detailed overview of the features common to virtuality based thought and expression. These are also outlined in Table 5. Following Table 5 is a theoretical analysis of the features of virtuality culture grounded in contemporary and historical theory. The next section of Chapter three addresses the potentiality of virtuality in the section relating to becoming a culture of virtuality, which is embodied by Plato's concept of *chora*.

Next, is an explanation of the nature of dialogue and its transition into concepts related to the connections between orality, literacy and virtuality features. A brief explanation of the contrasts between orality-literacy and orality-virtuality cultures is also presented in Chapter 3. Next, a suggestion that the orality-virtuality contrast may include rhetoric, based on historical precedence is provided. Another important connection to be made in Chapter 3 is in the difference between secondary orality and virtuality culture.

The concept of "presence," created through the use of contemporary technologies, is proposed in Chapter 3. This includes a definition and outline of the terms: primary, secondary and tertiary presence. The specific approaches related to: 1. primary direct singular presence, 2. primary direct collective presence, 3. secondary direct singular

presence, 4. secondary direct collective presence, 5. tertiary direct singular presence and 6. tertiary direct collective presence are also shared. Suggestions about the mediated and unmediated consequences of each approach are presented in the context of presence.

The next concept addressed in Chapter 3 is the concept of the “sensorium,” helping to address the “interiority and exteriority” concepts of human consciousness proposed by Ong (1982/2002). A continuation of the shift in human consciousness is addressed in a brief section about the voice of virtuality in human thought structure. As contemporary technology is an important part of mediating experiences related to the sensorium, an introduction to these technologies and virtuality culture is included. They describe the possibilities, related to the characteristics of contemporary technologies, in creating presence. The last section in Chapter 3 provides a grounding in Ong’s concept of “technologizing the word” which has been appropriated to create the notion of “virtualizing the world” as well as to demonstrate the reciprocal ways that literacy “literacizes technology” and vice versa.

Finally, Chapter 4 includes a framing for the broad observations and implications for future research related to the concepts that emerged. This includes the notion that virtuality culture restructures our consciousness and the question of how we will evolve with contemporary technologies. Implications in the evolution of communication involving knowledge, politics, the sciences, education and other areas are also presented. This chapter also includes topics related to the need to explore virtuality in education and educational technology. It also asks questions as to how virtuality culture might influence the Technological Pedagogical Content Knowledge framework, including the student learning activity types inspired by TPACK (Harris & Hofer, 2009). A call for the

continued study of multimedia learning and virtuality in connection with e-learning is included at the end of Chapter 4. The dissertation concludes in Chapter 4 with a reflection on what the implications mean for future work, as well as the evolution of culture. The dissertation closes with the acknowledgement of the unfinished nature of culture, which creates the potential that is virtuality, waiting to be actualized.

## CHAPTER II

### CONCEPTUAL REVIEW

#### Overview

This chapter considers eight main points that will be identified, discussed and summarized. The findings will also be included in a summary at the end of the chapter. The first point of this chapter is that Dr. Walter Ong's work is significant in grounding contemporary culture and the evolution of communication. It was important to include it as the grounding element in this dissertation, particularly in expanding his theory to include virtuality. Therefore, this chapter begins with Walter Ong's biography, along with his principal works that relate to orality and literacy culture.

The second point is that primary orality, a cultural period not informed by writing, constitutes a significant area of Ong's focus. This makes it an appropriate next step for outlining his features of orally based thought and expression, which arise out of chapter three of Ong's *Orality and Literacy* (1982/2002) text. These features are comprehensive and are aligned later in the chapter with both the features of literacy and virtuality based thought and expression. The chapter then addresses how writing codified oral performance in the transition from orality to literacy, which was a major development that led to the shift to literacy based culture. Described as technologizing the word by Ong (1982/2002), writing became a major catalyst for this shift, which is addressed in this chapter.

The third point is that the study of primary orality includes rhetoric, which is not focused on writing, but is part of the foundation of verbalization. This was a significant

area of investigation for Ong, primarily through the work of Pater Ramus. A brief overview of rhetoric in the evolution of human consciousness is included in this chapter.

The fourth point is that the medieval period created a cultural foundation that is important to consider in the evolution of technology. This includes advances in writing and print, as well as the emergence of manuscript culture, which were instrumental in setting the foundation for print culture. This is further emphasized in the next section that addresses the characteristics and features of literacy communication and expression. This includes addressing the fundamental differences between speaking or hearing modalities addressed through orality culture and those that are visual in literacy culture.

The fifth point is that the shift in using electronic modes of communication was fundamentally different than those reflected through oral and literacy cultures. Ong labeled this shift as “secondary orality” (1982/2002). An explanation for the many modes of electronic modes of communication, in what he referred to as electronic culture, are included in this chapter.

The sixth point is that in order to explore cultural shifts in communication, such as those related to literacy, secondary orality and virtuality, it was important to adopt a theory of communication. This includes a focus on the Shannon-Weaver Theory of Communication, which appropriately addresses all areas of communication addressed in this dissertation. A brief overview of this theory is included in this chapter.

The seventh point is that the mechanization of imagery and text in communication was a major contributor in the shift to literacy based communication. This chapter addresses printing technology, along with its impact in influencing human experience and mass communication forms. It is very significant to point out that this shift fundamentally

changed the way that communication evolved, as images and text were interwoven in mass culture. This included a focus on the evolution of visual rhetoric and visual culture also briefly referenced in this chapter.

Finally, the eighth point is that it was important to consider the history and scholarly origins of the terms “virtual” and “virtuality” in expanding on Ong’s cultural theories. These are included in the chapter along with their definitions, along with those that relate to technology terms. Definitions are included for technology, digital natives, digital immigrants, Technological Pedagogical Content Knowledge (TPACK) and barriers to technology integration since they inform the work of this dissertation. Next, a focus on terms that involve both elements of literacy and technology in a “literacized” way are included, along with a comprehensive list with brief definitions. This also includes a comparison of specific literacy-virtuality terms and concepts.

#### The Wisdom of Walter Ong

Dr. Walter Ong’s work was concerned with the impact of the shift from orality to literacy culture on culture and education. Dr. Walter Ong’s work has influenced cultural studies, philosophy, education and many other scholarly areas for over seventy years. He earned his bachelor of arts degree from Rockhurst College, a master’s degree from Saint Louis University and a Ph.D. from Harvard University. Ong’s dissertation included a focus on the work of Peter Ramus the controversial 16<sup>th</sup> century logician and educational reformer. As an ordained Jesuit priest in 1946, Ong taught at Saint Louis University. Ong was quite prolific in writing, which is evidenced by some of his most prominent works related to orality and literacy. These are included in the next section.

One of Ong's early influential works, *Ramus, Method, and The Decay of Dialogue* (1958), is the by-product of his dissertation, addressing the transitional stage between the Classical style of education and the modern version. It includes a focus on Ramism in the intellectual traditions of education, the Ramist dialectic related to Aristotelian thought and logic in the Middle Ages, the stages of Ramist rhetoric, and the diffusion of Ramism that included a spatial model for the mind, that encouraged a state of mind that encouraged print culture. This text influenced Marshall McLuhan in the writing of his book, the *Gutenberg Galaxy* (1962/2011).

Ong's book, *The Barbarian Within and Other Essays and Studies* (1962b), explores the intellectual and cultural challenges of literature, contemporary culture and religion. This book involves insight into how these areas translate into communication modes and their impact on society. Starting with a focus on the relationship between literature and the human being, Ong (1962b) addresses the dialectic of the "radically acoustic quality of the dialogue between man and man in which all verbal expression has its being" (p. 26). Another key concept involves the relationship between teaching and communication, which involves a focus on the technological culture that Ong (1962b) describes is manifested in the "Middle Ages, the Renaissance and into the nineteenth century" through "the *artes sermocinales* or communication arts" (p. 220). Finally Ong (1962b) addresses the concept of the "wilderness and barbarian," which involves considering intellectualized achievements of culture as well as the "existentialist dialectic of self-versus-other (inside-looking-out versus outside-looking-in), which dominates so much of the profoundest thinking of our time" (p. 260).

As his work evolved, Ong penned *In The Human Grain: Further Explorations of Contemporary Culture* (1967) exploring breakthroughs in communication, which included the nature of knowledge and communication related to the senses and relationships, literary study and modern culture, as well as Darwinian evolutionary influences upon myth and artistic imagination. Ong's (1967) book also addresses "changed relations between man and the physical world," which have in turn impacted the way the humanities and religion relate to man (p. 129).

In the same year, Ong crafted *The Presence of The Word: Some Prolegomena for Cultural and Religious History* (1967/1981), to address major developments in cultural evolution and human consciousness through his description of "the sensorium," or the sum of all perception through our collective senses. This included a focus on the relationship between religion, the Word of God and the sensorium, as well as transformations of the word through the influence of oral culture and communications media. Also addressed in the book is his interest in the auditory synthesis of the word through acoustic space, sight and the concept of reality, as well as the impact of the word in interiorizing cultural and religious history.

Three years later he published his fifth major work, *Rhetoric, Romance and Technology: Studies in The Interaction of Expression and Culture* (Ong, 1971). This volume addresses the dynamic and complex relationships between oral performance and cultural progress, while also connecting rhetorical traditions with the concepts of knowledge storage and retrieval. It also explores the decline of rhetoric in the late sixteenth century and the emergence of dialectic or logic during the seventeenth and eighteenth centuries. Specifically, Ong (1971) includes the connection between

contemporary technology and romanticism as it emerged in the nineteenth century. Overall, this work creates an important context for understanding contemporary communication, the related arts and expression related to rhetoric and its influence on 20<sup>th</sup> century electronic technologies.

Next came, *Interfaces of The Word: Studies in The Evolution of Consciousness and Culture* (1977a). This work includes a focus on the effects of the word and reading in transforming our consciousness, as Ong (1977a) explores the evolution of “technological inventions of writings, print and electronic verbalization” (p. 17). It further articulates the challenges of this evolution and what Ong (1977a) refers to as the “alienation within the human lifeworld” which has restructured consciousness “affecting men and women’s presence to the world and to themselves in creating new interior distances within the psyche (p. 17). This work also includes a focus on various disciplines such as cultural anthropology, media studies and linguistics while addressing topics related to the writer’s audience, oral noetics, logic and irony.

His seventh volume, *Orality and Literacy: The Technologizing of The Word* (Ong, 1982/2002), has been one of Ong’s most influential works, and has the most direct bearing on the implications of this dissertation. In this work Ong (1982/2002) includes a comprehensive summary of human communication and technology starting with describing the orality of language, the literate mind and the challenges of the term “oral literature.” This text also includes an overview of oral traditions, the characteristics of orally based thought and expression, an overview of writing in restructuring consciousness, as well as concepts of space, print, closure and hearing dominance. Ong (1982/2002) concludes this work with an understanding of media and human

communication, as well as considering the “inward turn” of consciousness related to the text (p. 174).

### Introduction to Primary Orality

These areas, along with his study of the shift from orality to writing and print, are separated into the two categories termed, “primary and secondary orality cultures.” Ong (1982/2002) defines primary orality cultures as those that have no knowledge of, or are unfamiliar with writing or print. We may consider the orators of Greek and Roman culture, African praise poems, and a myriad of other cultural and historical forms as being embodied in primary orality (Havelock, 1986; Ong, 1971, 1982/2002, 1984). Ong (1982/2002) also explored the work of Eric Havelock, in which he extended beyond Homer’s work and Greek drama to include all of ancient Greek culture (Havelock, 1986). Ong (1971) described preliterate Greek oral performance, which took the form of oral epics, as being, “held in high esteem and cultivated with great skill (p. 3). Building upon the work of Milman Parry, Ong (1982/2002) further identified the noetic characteristics of oral cultures and the formulaic qualities of Homeric epic poetry. Other oral cultures, such as those associated with Hebrew and Near Eastern literature, were characterized by what Havelock (1986) refers to as, “an economy of vocabulary and a cautious restriction of sentiment” as opposed to the detail and deep feeling that surrounded Greek poetry (p. 9). Havelock (1986) describes other cultural forms such as Hindu Vedic literature also known as “ritualized orality” (p. 9).

### The Features of Orally Based Thought and Expression

Ong (1982/2002) describes an inventory of the characteristics that describe oral based thought and expression versus those which are chirographic, typographic or

electronic. This list of characteristics, along with key features identified in his work, is summarized in Table 1 below.

Table 1

*Features of Orally Based Thought and Expression*

Characteristic	Features
1. Additive	<p>Includes:</p> <ul style="list-style-type: none"> <li>• patterning</li> <li>• oral discourse</li> <li>• oral residue (full existential contexts of oral culture)</li> <li>• oral narrative</li> <li>• text that preserves recognizable oral pragmatics and convenience of the speaker</li> <li>• a focus on pre-logical human consciousness</li> <li>• spoken cultural dialect of descriptive linguistics</li> </ul>
2. Aggregative	<ul style="list-style-type: none"> <li>• formulaic organization/formulas to aid memory</li> <li>• mnemonics</li> <li>• formulary/formulaic organization</li> <li>• a focus on totalization through abundant adjectives (example: “unhappy princess”)</li> </ul>
3. Redundant or Copious	<ul style="list-style-type: none"> <li>• emphasis on redundancy through repetition, fluency, fulsomeness and volubility</li> </ul>
4. Conservative or Traditionalist Knowledge	<ul style="list-style-type: none"> <li>• words repeated over and over to preserve what has been said.</li> <li>• conservative mind preserves traditionalist knowledge</li> <li>• mnemonics in oral speech preserve memory</li> <li>• narrative originality creates a particular interaction with an audience at a particular time</li> <li>• stories introduced into unique situations</li> <li>• encouraged audience response</li> <li>• formulas are re-shuffled rather than supplanted with new materials.</li> <li>• old formulas interact with new and political situations</li> </ul>

- |                                 |   |
|---------------------------------|---|
| 5. Close to The Human Lifeworld | <ul style="list-style-type: none"> <li>• oral cultures must conceptualize and verbalize their knowledge with close reference to human lifeworld</li> <li>• objective world has immediacy and familiar interaction of human beings through somatic connection</li> </ul>   |
| 6. Agonistically Toned          | <ul style="list-style-type: none"> <li>• competitive and combative in lifestyle through verbal actions</li> <li>• designed to challenge hearers to create a more apposite or contradictory position</li> <li>• A product of give and take in defending against combat</li> </ul>  |
| 7. Empathetic and Participatory | <ul style="list-style-type: none"> <li>• learning or knowing means achieving close, empathetic, communal identification with the known</li> </ul>   |
| 8. Homeostatic                  | <ul style="list-style-type: none"> <li>• living/staying in the present</li> <li>• lifestyle is in context of struggle</li> <li>• staying balanced by sloughing off memories that no longer have relevance</li> <li>• word of mouth/sound maintains high interpersonal relations, attractions and antagonisms</li> <li>• also involves facial expression, gestures, inflection, etc. direct semantic ratification</li> </ul> |
| 9. Situational                  | <ul style="list-style-type: none"> <li>• somatic connection, immediacy in the moment minimally abstract</li> </ul>  |

### Codifying Oral Performance

It is important to recall that before the advent of writing, all culture was oral and was auditory (Ong, 1971). Ong (1967) explains this in what he referred to as the “*loci communes*,” or “the formulaic modes of expression derivative from oral practice and perpetuating oral psychological structures” which were “codified by the alphabetic but still highly oral-aural ancient Greeks” (p. 31). Writing therefore created possibilities for codifying oral performance that had not been possible and evolved to become an essential

part of Western culture. This is the case when considering the scribes of the Middle Ages who composed oral discourse through writing, which was essentially still based in oral expression (Ong, 1971). According to Ong (1971) many other forms such as letter writing of the Middle Ages and early poetry also maintained this distinction through the Renaissance period and into the beginning of the Romantic period (p. 3). In considering letter-writing of the Middle Ages, according to Ong (1971), the letter began with “the equivalent of the oration’s exordium,” and continued with the *petitio*, “or the statement of what was to be proved,” along with the “reasons or proofs bearing on the *petitio*,” the “refutation of counterreasons and the conclusion” (p. 3). Considering this purpose of writing, we can now understand that the primary focus was on documentation and replication of speech. In the sixteenth century, oral performance was “technologized” according to Ong (1971) as it was “made into a *techne* or art, earlier by the Sophists” and later by Aristotle (p. 4). In the evolution of culture, most contemporary approaches to “technologizing the word” include some of the elements of the residue of oral forms (Ong, 1971).

#### Rhetoric and The Origins of Consciousness

Ong (1971) described “rhetoric” as the “anglicized Greek word for public speaking,” that “refers primarily to oral verbalization, not to writing” (p. 2). This relates to what he describes as “the paradigm of all expression” related to oration (p. 3).

According to Ong (1958/1983), Peter Ramus is an essential part of the history of rhetoric as he “attempts to reduce religion to an art similar to the arts of expression, grammar, rhetoric, and logic” which explores its central element of logic or dialectic that contributed to the development of dialogue (p. 5).

## Medieval Communication and Technology

Walter Ong contributed significantly to the field of communication through his interest in medieval society and the change brought about by technological advances of writing and print (Ong, 1962b, 1982/2002; 1984). In *Orality, Literacy, and Medieval Textualization* (1984), Ong writes about the change in *sotto voce*, the vocalization technique used in reading manuscripts performed aloud whether or not the reader was alone. They were intended to imply the impression of truth as Ong (1984) describes how the European Middle Ages was bound to orality longer than in literature and that manuscripts “exhibited the heavy residue of primary orality” (p. 3). The prominence of the manuscript culture of the Middle Ages, as opposed to the oral dominance of the ancient world, led to a more typographically dominated culture during the Renaissance period (Ong, 1962b).

Winner (1977) stated that there was nothing novel about cultural change through “technics, technological change, or advanced technological societies” and that “one can argue that medieval Europe was a highly sophisticated technological society of a certain sort, involved in a fairly rapid, continuing process of sociotechnical change” (p. 4). What this means is that the period involved an interrelationship between social and technical aspects of the culture (Mumford, 1985; Trist & Murray, 1993). Therefore, this sociotechnical change of medieval Europe created conditions and interactions that involved both cause and effect relationships as well as complex, unexpected and unpredictable relationships that have evolved with culture (Emery & Trist, 1960; Mumford, 1985; Trist & Murray, 1993). According to McLuhan (1962/2011), the manuscript inspired part of this cultural evolution as it influenced literary conventions

during the medieval period at every level (p. 99). This is particularly the case when considering the individualistic nature of the printed word that evolved as a result of the change in consciousness as a result of writing that emerged during the medieval period (Hartley, 1982/2002; Ong, 1982/2002).

Specifically medieval society was most influenced by the transition from the appearance of script some 6,000 years ago and oral versus literacy dominated media (Ong, 1984). The change in medieval thought set the foundation for the evolution of text brought about by the technological advance of the printing press. Ultimately, further systemic change came about in the linear qualities of text and the shift from hearing to sight-based culture (Ong, 1982/2002). This is echoed in Ong's *Ramus, Method, and The Decay of Dialogue* (1958), which explored print culture and the new state of mind that arose as a result. However, according to McLuhan (1962/2011) during antiquity and the Middle Ages a transitional phase occurred where print based materials were still read aloud (p. 94).

#### The Evolution of Literacy Cultures

All of the characteristics and features that will be outlined contribute to communication that involves speaking or hearing as opposed to literacy-based cultures (Havelock, 1986; Ong, 1982/2002). Historically, the orality-literate transition has its roots in Socrates' notion according to Havelock (1986) in supporting orality in the service of literacy as "a discovery of self-hood" that separated the "knower from the known" (p. 5). Ong (1982/2002) describes this passive and context-free use of written language and its autonomous nature as a "discourse which cannot be directly questioned or contested as oral speech" since it "has been detached from its author" (p. 77). This transition created

the catalyst for contemporary Socratic approaches to education, also known as *paideusis* (Havelock, 1986). Considering the seventy four chapters of writing systems outlined by Daniels & Bright (1996), including those that pre-dated the Greek alphabet such as Egyptian hieroglyphs, Mesopotamian cuneiform, scripts associated with the Aegan and Cyprus, and the Phoenician alphabet, it is beyond the scope of this dissertation to outline all of them (O'Connor, 1996; Swiggers, 1996). What is significant for purposes of this dissertation is that Havelock (1986) and Ong (1982/2002) have described the Greek alphabet as the most influential in encouraging literacy's rapid development. They have also indicated that the transition from orality to literacy was also facilitated and accelerated by the invention of the Greek alphabet (Havelock, 1986; Ong, 1982/2002).

Communication involves a shared language that is an important foundation of literacy, where those that are involved as listener, speaker, artist and/or communicator have common understanding about a given set of phonetic symbols (Ong, 1982/2002). Literacy culture, which evolved from chirographic to text-based practices, is also considered relatively new as compared with the history of orality (Havelock, 1963/1967, 1982; Ong, 1982/2002). However, the development of the phonetic alphabet transformed cultures as demonstrated by Harold Innis' work, while they also endangered the oral traditions associated with Homer (McLuhan, 1962/2011, 1974). Once typographic culture became mainstream, books tended to create fixed points of view and homogeneity of thought (McLuhan, 1962/2011).

Initially, there was a shift from the aural mode of primary orality to the development of visual modes of script and print-based literacy (McLuhan, 1962/2011; Ong, 1982/2002). Communication then began to be channeled through books,

newspapers, literature, signs, cards, labels and other visual means creating “aesthetic distance,” referring to what Ong (1976) has described as being “always written at a given place in history” (p. 1). Considering the relatively recent development of writing, Ong (1982/2002) has suggested that from the thousands of oral languages that have existed, only a hundred or so led to a writing-based culture (p. 7). His point illustrates that although literacy-based cultures are more universally accepted in our time, written words are generally grounded in oral speech. Regardless, according to Ong (1977b) “all texts come out of the past” (p. 419). Text involves interpretation and creates what Ong (1980) refers to as “its own world in the consciousness of the reader” (p. 134-135). Considering the history of text in cultural evolution, McLuhan (1962/2011) has suggested that only a small percentage of literacy cultures can be considered typographic (p. 84). McLuhan (1962/2011) also described how typography created authors and generated a following through the public because of the mass production and mechanization of text that was made possible because of its form (p. 149). Finally, with typography and the portability of the book and human interiorization, culture evolved to be more individualistic (McLuhan, 1962/2011).

### The Features of Literacy Based Thought and Expression

The key characteristics and features of literacy-based thought, identified in Ong’s work, are highlighted in Table 2 below.

Table 2

#### *Features of Literacy Based Thought and Expression*

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Characteristic	Features
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1. Subordinative	<p>Includes:</p> <ul style="list-style-type: none"> <li>• analytic and expository approaches to writing;</li> <li>• chirographic, print, typographic literacy;</li> <li>• syntactics and an organization of written discourse;</li> <li>• flow of narration that is more dependent on linguistic structure and fixed grammar;</li> <li>• lacks the normal full existential contexts of oral culture;</li> <li>• less sensory completion of reader and listener involvement</li> <li>• a focus on ‘rational’ human consciousness</li> </ul>
2. Analytical	<ul style="list-style-type: none"> <li>• hierarchical and narrative organization</li> <li>• artificial creations are structured by writing</li> <li>• a strain on the psyche in preventing expression to fall into natural patterns</li> </ul>
3. Concise and Linear	<ul style="list-style-type: none"> <li>• an emphasis building on redundancy and an emphasis on fluency, fulsomeness and volubility</li> <li>• the concept of backlooping outside the mind</li> <li>• amplification in early texts (considered redundant by today’s standards)</li> <li>• linear plot line and heavy subordination</li> </ul>
4. Conventional and Traditionalist Knowledge	<ul style="list-style-type: none"> <li>• freeing the mind of memory work</li> <li>• allowing the mind to new speculation</li> <li>• memory locked in visual field</li> </ul>
5. Distanced from The Lifeworld	<ul style="list-style-type: none"> <li>• linguistic</li> <li>• “deadness of text” removed from lifeworld</li> <li>• writing structures knowledge at a distance from lived experience</li> <li>• can denature humans</li> <li>• devoid of human action context</li> <li>• statistics and facts divorced from human or quasi-human activity</li> <li>• interiorization of print</li> <li>• encourages closure and finality</li> </ul>
6. Agonistically Closed	<ul style="list-style-type: none"> <li>• print not as open to antagonism</li> </ul>

- conflicts lack interactive and antagonistic debate and verbal performance elements.
  - writing fosters abstractions that disengage knowledge from arena where human beings struggle with one another.
  - separation of the knower from the known.
7. Objectively Distanced
- creates conditions for objectivity
  - personal disengagement or distancing
  - disengaged knowledge
  - result of writing separating knower from the known
8. Layered
- words have layers of meaning
  - words can be irrelevant to ordinary present meanings
  - syntactic and semantic discrepancies and layering with semantics
  - word meanings continuously come out of the present
9. Abstract Rather than Situational
- abstract categorization
  - formal logical reasoning processes, definitions, or comprehensive descriptions, or articulated self-analysis, all of which derive not simply from thought itself but from text-formed thought.

These characteristics help outline literacy based thought and expression, which led to a culture of visually focused sensory awareness as opposed to the auditory-dominated focus of previous cultures based in orality (Ong, 1982/2002). There are many documented differences between orality and literacy cultures as they evolved over time, although neither is considered to be superior to the other, as each has been necessary in the evolution of consciousness (Ong, 1982/2002). The same is also true of virtuality culture. According to Ong (1984), no other time involved more interaction between orality and literacy than the European Middle Ages. This also led to the focus on print,

which encouraged more visualization of the word in space than previous writing channels (Ong, 1982/2002).

### Secondary Orality

Ong (1982/2002) describes “secondary orality” as any electronic communication dependent on writing and print in order to exist. In an age of secondary orality as described by Walter Ong, the senses are not locked into visualizing content alone (1982/2002). Walter Ong further suggested that secondary orality culture, or electronic modes of communication, incorporated elements from both primary orality and literacy based cultures, particularly around aural sensibilities associated with oral communication (Gronbeck, Farrell & Soukup, 1991; Ong, 1982/2002). Examples of these early electronic media modes of communication that emerged included the telegraph, television, telephones, radio, sound recordings and motion pictures, which include elements of both chirographic and orality modes (McLuhan, n.d.; Ong, 1982/2002). According to McLuhan (1964/1994) the advent of television had an impact on altering the medium of radio, “from an entertainment medium into a kind of nervous information system” (p. 298). Ong (1982/2002) suggested that electronic culture changed the way culture from the times of antiquity into the eighteenth century looked at literary texts in recitation: “Reading aloud to family and other small groups was still common in the early twentieth century until electronic culture mobilized such groups around radio and television sets rather than around a present group member (p. 154).

### Communication

Ong (1967) has described the development of communication as one of the most central activities of man striking “deep into the consciousness” through contact (p. 1).

This is because of its ability to define society because without it, according to Ong (1967), “human thought as we know it in the individual himself seemingly cannot come into existence outside a communication system (p. 1).

### Shannon-Weaver Theory of Communication

Considering Ong’s (1967) position regarding the importance of communication, it was important for purposes of this dissertation to adopt a theory that could easily be applied to the work. Although there are many approaches to communication theory, the Shannon-Weaver Theory of Communication is most significant related to the evolution of communication that is addressed throughout this dissertation. This model of communication focuses on the process of communication rather than on the technology tool itself (Shannon & Weaver, 1949; Weaver, 1949). Communication begins with an information source that produces a message, sent by a transmitter, who encodes the message, to a receiver, who decodes the information communicated through a perceptual channel. Another aspect of this model includes Shannon & Weaver’s interest in the noise factor related to the accuracy of clarity in the message reception. For the purposes of this dissertation, the Shannon-Weaver Theory of Communication will be adopted and applied to all references to the term “communication.”

### The Mechanization of Imagery and Text in Communication

Historically, once mechanization of imagery and text were developed, there was a fundamental shift in the process of communication. This occurred through the rapid succession of mechanical printing and books, relative to the development of the printing press, paper production, movable type and the creation of the university, most notably associated with the evolution of text and images (Mumford, 1963). Mechanized

printmaking processes such as lithography, chromolithography, woodblock prints and engraving therefore made “technologizing the image” possible (Heer & Worcester, 2004). Mumford (1963) has suggested that the resistance to mechanical improvements was a threat to previous human experience, which is the foundation for mechanizing imagery and text through mass production (p. 284).

Mass production of texts also evolved into the use of visual imagery, art design and typography in combined forms such as comics, becoming part of everyday life (Heer & Worcester, 2004). As imagery evolved with text, the controversial and interpretive aspects of forms such as illustrated storytelling, comic books and comic strips generated the debate about them as popular art forms versus literary works (Heer & Worcester, 2004). However, McLuhan (1964/1994) describes the origins of comic books as, “not having anything connected or literary about them, and being as difficult to decipher as the *Book of Kells*,” while also comparing them to the exoticism of eighth-century illuminations” (p. 168). Walter Ong (1941) in *Mickey Mouse and Americanism* describes picture stories, such as those that relate to Mickey Mouse as they “gravitate toward shallowly spectacular” (Heer & Worcester, 2004, p. 96). Culture has therefore had to grapple with the effects of images in the evolution of literacy in consciousness restructuring related to visual media. This evolution includes the debate about popular versus modern art and the avant-garde in conjunction with traditional approaches to text-based literacy (Ong, 1951). “Avant garde productions” which challenge what is usable is what Ong (1951) considers the “dangerous material” similar to the “tremendous amount of Latin and Greek classics and much medieval literature” (Heer & Worcester, 2004, p. 101). Therefore, art, which is considered a language and vehicle for communication and

expression in its own right, has informed the evolution of visual media related to literacy, challenging the dominance of text only modes. Media such as comics and illustration have evolved from simply supporting text to being seen “on equal footing with text” (Heer & Worcester, 2004, p. ix). This further illustrates that the transition from orality to literacy has involved challenges in considering the language of visual art media forms such as printmaking and illustration in everyday life related to mass culture and common experience.

### Visual Rhetoric

Visual rhetoric has also evolved with the digital age and the visual literacy and culture movements. Handa (2004) describes the role of visual rhetoric in the digital world in working with students to identify and decipher “how images persuade both on their own terms and with multimodal texts and to help students to make more rhetorically informed decisions as they compose visual genres (p. 3). The study of visual rhetoric, along with the evolution of “print culture” through technology relates to visual culture and understanding the relationship between words, images and texts, which has become quite sophisticated with the electronic age (Hocks & Kendrick, 2003).

### Defining Virtuality Terms

#### Virtual

Historically the term “virtuality” relates to Aristotle’s belief that every entity in existence could be described related to its potential, or *dynamis*, and actuality, or *energeia* (Welsch, 2000, para. 11). Peirce (1902) referenced Scotus’ concept of virtual knowledge, which was integral to his semiotic work, suggesting that the term virtual

suggests something that is “as if” it was real adding that the A virtual of X (where X is the common noun) is something, not an X, which has the efficiency of an X. He has also suggested in that the potential of X is of the nature of X (Goodrich, 2002). Therefore the potentiality or the qualities of the entity may be understood or interpreted or not, which essentially still means that the virtual entity is still the thing that is salient (Peirce, 1902; Popper, 1972). For purposes of this dissertation, the definition that Peirce puts forward will be adopted and applied to all references of the term “virtuality.”

### Virtuality

It has been suggested by Deleuze (1966) that virtuality is associated with “being opposed to real but opposed to actual, whereas real is opposed to the possible” and that virtuality is something endowed with virtue or power (p. 96-98). Rheinhold (1991) suggests that Nelson uses the term ‘virtuality’ to refer to “the seeming [of a thing], as distinct from its more concrete ‘reality,’ which may not be important” (p. 177). Levinson (1988) suggested that by altering the traditional definition for virtuality to consider the information structure of X removed from its physical structure, the ‘virtual’ thing is actually created. Skagestad (1999) has suggested that it is premature to address the question of whether or not Levinson and Nelson’s definition will evolve to be more in alignment as the concept of virtuality evolves.

Skagestad (1999) has indicated that Peirce’s semiotic framework lends itself to “understanding the phenomenon of virtuality in contemporary culture and technology” (para. 8). Therefore Peirce’s (1902) definition of virtual will be used to ground the term ‘virtuality’ addressed in Chapter 3. The other definitions included in this section will also inform the use of the term throughout the dissertation.

## Defining Technology Terms

### Technology

Technology has been defined in many ways throughout the ages. For the purposes of this dissertation, the following definition provided by Ong (1982/2002) will be adopted and applied to all references to technology: “Any mechanical contrivance or tool that helps extend the limits of human capabilities and that ‘properly interiorized’ can produce something uniquely and ‘poignantly’ human (p. 82). The term “contemporary” will also be used in conjunction with technology to suggest the context.

### Digital Natives

Prensky (2001) describes a “digital native” as the first generations who are native speakers for digital languages, having grown up using digital technologies such as video games, cell phones, computers, etc. (p. 2). In contemporary terms, Johnson (2009) calls this the Net Generation. According to Prensky (2001), the environment of digital devices has created differences in thinking and processing of information for digital natives compared to previous generations (p. 2). White & Le Cornu (2011) describes them as residents and visitors, rather than digital natives and digital immigrants.

### Digital Immigrant

According to Prensky (2001) digital immigrants, or those not born into the same digital world as digital natives, have been described as having an accent related to their language of the past (p. 3). Therefore, digital immigrants have been described by Prensky (2001) as requiring varying degrees of learning to adapt to the digital environment (p. 3). The concept of the digital immigrant accent explained by Prensky (2001) includes

activities like printing out documents in order to edit them or sharing hyperlinks with people in the real world as opposed to the virtual world (p. 3). Prensky (2001) has described the disconnect between the way digital immigrants and digital natives have been socialized as creating what he calls “the single biggest problem facing education today,” that is that “digital immigrants speak an outdated language in instruction with digital natives” (p. 3).

### Technological Pedagogical Content Knowledge (TPACK)

Technological Pedagogical and Content Knowledge (TPACK) is the knowledge that teachers need to know related to the three distinct areas within teaching and learning (Koehler & Mishra, 2008, 2009). This knowledge includes the skills and dispositions of teachers in each of the separate areas of technology, pedagogy and content, as well as the combination of them. When these areas are combined, they create new dynamics, which can be messy, while also inspiring new and relevant areas of student learning (Koehler & Mishra, 2008, 2009; McGrath, Karabas & Willis, 2011; Mishra & Koehler, 2006). These areas may be related to the dynamics created by the features virtuality culture as well.

Historically, Punya Mishra and Matthew Koehler created the Technological Pedagogical and Content Knowledge (TPACK) technology integration framework, which expanded the Pedagogical Content Knowledge (PCK) framework that Lee Shulman previously developed (Koehler & Mishra, 2008, 2009; Mishra & Koehler, 2006; Shulman, 1986, 1987). According to Shulman (1986), the PCK framework includes the essential knowledge that teachers need to be experts in, related to pedagogy and content, and are not considered separate bodies of knowledge (McGrath, Karabas & Willis, 2011; Shulman, 1986, 1987). As content and pedagogical knowledge influence and interact

with each other, they require the teacher to think about them together and not as individual components (McGrath et al., 2011; Shulman, 1987, 1986). This relates to what Bruner referred to as the “structure of knowledge” based on the theories, principles and conceptual frameworks of a particular content area. This TPACK framework and its learning by design approach generates creative solutions to challenges as well as lending itself to inquiry, reflection, dialogue and deep learning resulting in results related to subject matter content and instructional goals (Mishra and Koehler, 2006). Cox & Graham (2009) re-defined the definition of TPACK to include a sliding framework that needs further research in K-18 levels. They also suggest that cases in rural and urban schools need much more research and that elementary teachers seem to be much more focused on technological and pedagogical knowledge (TPK) as opposed to college professors that focus on technological and content knowledge (TCK).

Many other scholars in K-18 education fields have addressed the importance of TPACK as well (Cox & Graham, 2009; Harris & Hofer, 2009; Harris, Mishra & Koehler, 2009; Koehler & Mishra, 2008, 2009). The technological component includes important real-world connections at a time when education is struggling to keep up with the implementation of emerging technologies creating a system of digital inequity (Davis, Fuller, Jackson, Pittman, & Sweet, 2007). According to Mishra and Koehler (2006), technologies have transformed (and will continue to transform) teacher education, professional development and classroom environments as teachers provide more balanced perspectives in 21<sup>st</sup> century education.

## Barriers to Technology Integration

Ertmer (1999) has suggested that the barriers to technology integration refer to the areas that impede the successful use of technology in embedded in teaching and learning situations. The two types are referred to as “first order” and “second order” barriers (Ertmer, 1999). First order barriers to technology integration according to Ertmer (1999) are described as, “being extrinsic to teachers and include lack of access to computers and software, insufficient time to plan instruction, and inadequate technical and administrative support (p. 48). Ertmer (1999) also describes the second order barriers to technology integration as those which are “intrinsic to teachers and include beliefs about teaching, beliefs about computers, established classroom practices, and unwillingness to change” (p. 48). Because second order barriers involve what Ertmer (1999) suggests “challenging one’s belief systems and the institutionalized routines of one’s practice,” these are considered much more challenging than first order barriers to remedy (p. 48). However, in order for successful technology integration to occur in the teaching and learning process, first and second order barriers need to be addressed.

## Defining Literacized Technology Terms

Ong (1979) has described the early history of the West and the “three R’s” which he described as coming from “post-classical, post-Renaissance schools training for commerce and domestic economy” (p. 1). This type of literacy as Ong (1979) has pointed out was related to oral performance needed for the “man in public affairs” (p. 1). This was a different focus for literacy related to what Ong (1979) described as “the ability to hear in one’s imagination what a written text would sound like when read aloud” (p. 1). The example of the history of McGuffey *Readers* provided by Ong (1979) mediated the

experience of “sound-conscious” literature in the late eighteenth century, which functioned differently than other tools through literacy history (p.1). However, as a tool, the McGuffey *Readers* mediated experiences based in silent reading as opposed to oratorical reading in the period between 1836 and 1920 (Ong, 1979). Despite this example of traditional literacy history, the literacy goals of the past appear to have shifted with contemporary technological media and are being redefined culturally speaking (Hewitt, 2009; National Council of Teachers of English, n.d.b; Roswell & Walsh, 2011).

The shift from traditional literacy origins to a contemporary culture of virtuality is suggested by the abundance of new literacy terms that fuse together facets of technology with culture. The abundance of terms that combine elements of literacy, technology and culture suggests that our contemporary culture is beginning a shift toward one that is very different from the traditional conception of literacy. The terms have been organized below to show commonalities and differences in meaning, as defined in this section (See Table 3).

Table 3

*A Comparison of Contemporary Literacy-Virtuality Terms and Concepts*

Term(s)	Key Concepts Shared
Multimodal Literacy, Multiliteracy, Electronic Literacy, Gaming Literacy, Media Literacy, Multimedia Literacy, New Media Literacy, Postliteracy, Reproduction Teleliteracy, Transliteracy	Includes multimodal approaches to communication and expression (ie. haptic, oral, auditory, visual); Uses interdisciplinary approaches, remixing related to media/technology and elements (i.e. flash, animation, sound, interactive visual and haptic elements, digital video, digital media, film, music audio)

Graphic Literacy/Visual Literacy	Focuses on visual modes of communication; Focuses on interpreting non-verbal visual symbols, patterns, icons, diagrams; Involves learning to “read” visual content and communication through drawings, posters, illustrations, etc.
Digital Literacy, Electronic Literacy, Graphic literacy	Reading content, interpreting instructions through graphic displays and writing
Transliteracy	Focuses on reading, writing and interacting across multiple media forms
Digital Literacy, Teleliteracy	Explores audiovisual modes such as television, film movies and other media
Digital Literacy	Combines skills of navigating issues such as privacy and online safety created through modern digital technologies, online media in digital learning environments
Information Literacy, Cyberliteracy	Focuses on the critical discernment skills, interpreting content, responsible use, ethics of retrieval skills for accuracy,
Electronic Literacy	Focuses on the interaction between reader and electronic text; Responds automatically to characteristics of the reader
Gaming Literacy	Skills and tools needed in design, culture and exploration of reading, writing and exploring games; Includes virtual worlds and simulation technology
Gaming Literacy Electronic Literacy,	Bridges traditional literacy practices with digital game “paratexts.”
Hypermedia Literacy, Graphic Literacy/Visual Literacy	Focuses on a non-linear and non-sequential approach to exploring text
Metaliteracy	Focuses on how emerging technologies unify multiple literacy types; Involves generating and distributing information through participatory online environments
Socio-Emotional Literacy	Explores sociological and emotional issues, ethics and rules related to contemporary digital communication and

cyberspace

Technological Literacy	Focus on the skills in choosing appropriate technologies in different contexts; Encoding and coding technological messages; Using conceptual and evaluation skills for cultural benefit
Teleliteracy	Skills that include decoding and processing messages through the medium of television

### Cyberliteracy

Cyberliteracy refers to consumer online communication skills that involve an awareness of critical issues in navigating Internet culture (Gurak, 2001). This also includes a focus on being able to decipher areas related to parody, bias, accuracy of information and privacy-related issues. Cyberliteracy also related to information literacy, involves interpreting the nature and structure of online information, as well as social, cultural and philosophical implications (Shapiro, & Hughes, 1996).

### Digital Literacy

Digital media literacy includes a host of complex skills related to what Eshet-Alkalai (2004) outlines as “a variety of complex cognitive, motor, sociological, and emotional skills, which users need in order to function effectively in digital environments” including the ability to discern, access, evaluate and create media content and explore issues related to media consumption individually and through collaboration (Koltay, 2011; Eshet-Alkalai, 2004).

### Electronic Literacy

Electronic literacy is the ability to being able to read and write through the use of electronic technologies that include the computer, animations, interactive visual and

haptic elements, as well as video and audio elements (Reinking, n.d.; Winkelmann, 1995). This includes the ability to send and receive emails and access on-screen visual and electronic materials. In addition, electronic literacy involves interpreting symbolic elements similar to traditional printed texts in the form of graphic elements, ways of organizing chapters and typographic elements related to underlining or italics (Reinking, n.d.).

### Gaming Literacy

Gaming literacy refers to the skills and tools needed in the design, culture and exploration of games, which includes virtual worlds and simulations (Aldrich, 2009). Evolving multimedia forms involving gaming literacy bridge traditional literacy practices with “digital game paratexts” or multimodal texts through supporting graphic or print media (Apperley & Walsh, 2012; Hewett, 2009). Because of the immersive nature of video games, body and mind are fully entrenched through gaming literacy in the experience of “making meaning both by reading the game and creating components or actions through writing (Gee, 2003).

### Graphic or Visual Literacy

Graphic literacy is the ability to interpret, analyze and discern data or information communicated through symbols, patterns, icons and diagrams (McPherson, 2006). Another term for graphic literacy is visual literacy, which involves learning to “read” content related to tangible, traditional, digital and other contemporary visual communication media through drawings, posters, illustrations, paintings, photographs, comics, graphics and other visual forms (Avgerinou & Ericson, 2002; Chauvin, 2003; Eisner, 1985; Eshet-Alkalai; Sinatra, 1986). Learning to read images and visual artifacts

involves communication pertaining to abstract symbols and associative meaning related to traditional literacy based practices, as well as other semiotic references (Eshet-Alkalai, 2004).

### Hypermedia Literacy or Branching Literacy

Hypermedia literacy is synonymous with branching literacy, which relates to the navigation of modern digital spaces using non-linear and non-sequential approaches (Eshet-Alkalai, 2004; Lunin & Rada, 1989; Reinking, n.d.). Landow & Delany (1991) describe hypermedia in extending hypertext by “re-integrating our visual and auditory faculties into textual experience, linking graphic images, sound and video to verbal signs” (p. 7). Skills in hypermedia literacy involve navigating through the use of digital hypermedia text in a more independent way than was previously afforded through traditional texts.

### Information Literacy

Information literacy in a digital context refers to the critical discernment skills that help learners to be responsible consumers of digital information and content via the Internet and social networks (Koltay, 2011). This is particularly significant when considering the ethics of retrieving information for academic research purposes related to authenticity of online information. This includes developing a critical stance in deciphering whether or not information is accurate in addition to concentrating on ways of searching for information (Eshet-Alkalai, 2004).

## Media Literacy, Multimedia Literacy or New Media Literacy

Media literacy relates to the complexity of skills used in communicating, analyzing and creating through various media, genres and forms such as animation, sound, video, film, music and other media (Abram, 2009; Bazalgette, 2009; Garland, 2009; Hobbs, 1998; Koltay, 2011; Kress & van Leeuwen, 2001; Livingstone, 2004; Martens, 2010; Mackey & Jacobson, 2011; van't Hooft, 2009; Walsh, 2009). Multimedia literacy and new media are synonymous with media literacy, as their components have been described in similar ways. This includes the ability to encode and decode symbols and messages and is generally considered an interdisciplinary approach to communication and expression related to the impact of media and technology (Rosenbaum, Beentjes, & Konig, 2008).

## Metaliteracy

Metaliteracy refers to how emerging technologies come together to unify multiple literacy types and includes a focus on generating and distributing information in participatory online environments such as social media and other communities (Mackey & Jacobson, 2011).

## Multimodal Literacy or Multiliteracy

Multimodal literacy or multiliteracy is communicated through multiple approaches to expression including different combinations of print, visual, information, digital media, digital video and graphic literacies (Cope & Kalantzis, 2009; Hicks, 2013; Jewitt & Kress, 2003; Kalantzis, Cope & Cloonan, 2011; Kress, 2004; Miller, 2010; National Council of Teachers of English, n.d.a; Roswell & Walsh, 2011; Walsh, 2009). This involves multimodal interaction, information, persuasion and emotion conveyed

through multimedia rather than traditional approaches to literacy (Johnson, 2009; Norris, 2004). Others such as O'Halloran & Lim (2011) have suggested that multimodal literacy relies on multisemiotic resources and the pursuit of meaning through multimodal learning.

### Postliteracy

According to Eric McLuhan (1998) postliteracy is a continuation of literacy that follows. In *Counterblast* (1954/2011), Marshall McLuhan refers to a “postliterate acoustic space” as a result of new electric media. Eric McLuhan (1998) has also suggested that the postliteracy “reader” is not as concerned with the organizational structure of words and reads electronic content differently than in previous historical periods (Clark & Mayer, 2011; Constantineau & McLuhan, 2010; McLuhan, 1998). This includes individuals or those embodied by the Net generation, who choose to use contemporary media rather than books as their main way of accessing information (Johnson, 2008, 2009, 2012).

### Reproduction Literacy

Reproduction literacy is an approach to digital literacy where pre-existing text, images, art and/or audio are combined or remixed. This approach to literacy involves creating a new original postmodern work that creates new meaning through separate media elements (Forbes, Leonard & Vitolo, 2013).

### Socio-Emotional Literacy

Socio-emotional literacy explores the sociological and emotional issues along with the ethics and rules related to contemporary digital communication and cyberspace

(Eshet-Alkalai, 2004; Joseph & Strain, 2003). This area involves understanding how to recognize issues associated online safety related to viruses, phishing, privacy and other issues that impact communication between senders and receivers because of a lack of visual or verbal cues (Joseph & Strain, 2003).

### Technological Literacy

Technological literacy involves proficiency and knowledge with technology (Dyrenfurth, 1991; Gagel, 1997; Lewis & Gagel, 1992; Waetjen, 1993). According to Hayden (1989), it involves gaining the knowledge to make appropriate choices in choosing technologies in different contexts. According to Waetjen (1993), technology literacy also involves coding and encoding technological messages. Finally technology literacy involves conceptual and evaluation skills related to organizing and using technological information as well as applying tools and skills for the benefit of culture (Croft, 1991; Owen & Heywood, 1990; Steffens, 1986; Waetjen, 1993).

### Teleliteracy

Mizrach (n.d.) suggests the term “teleliteracy” describes an awareness of a new communicational term that encompasses the transmission of electronic information described as “competency” that is different than literacy and orality. Bianculli (2000) describes teleliteracy as, “the demonstration of fluency in the language and content of TV” (p. 7). In absorbing, decoding and processing television there are messages inherent in the television medium that make teleliteracy and the “literate viewer” important to consider (Bianculli, 2000). Extending beyond content on screen, other factors also influence and affect television such as facilitating experiences for students to consider television “critically and objectively” along with what Bianculli (2002) explains in

“potentially manipulative production techniques, as editing and special effects” (p. 155). Bianculli (2000) also describes teleliteracy as media literacy in that students can review, discuss and discern content issues related to television content that takes the form of news, documentaries, political programming and commercials, jokes and satire, novels made for television and other examples (p. 155).

### Transliteracy

Transliteracy is the ability to read, write and interact across multiple media forms from orality through current digital outlets (Thomas, Joseph & Laccetti, 2007). This includes areas that have been previously outlined through other defined “literacy” areas related to handwriting, print, television, radio, film, social networks, visual and interactive media. Transliteracy deals with the participatory nature of communication afforded through digital contexts. Transliteracy approaches to media are related to postliteracy culture in that they involve multiple entry points to communication and expression, as well as interaction.

### Summary

In conclusion, Walter Ong’s work focuses on his ideas related to the features of orality and literacy, as well as how they create the context for how human consciousness was transformed through this cultural evolution. This conceptual review explores his work in an attempt to understand the principal ideas of how this transformation occurred through both theoretical and historical contexts. In focusing on his interest in the cultural shift inspired by the medieval period, we are better able to understand the contexts that influenced Ong’s ideas. This also provides a context for understanding how this shift relates to mechanized imagery and text, the Shannon-Weaver Theory of Communication,

as well as how Ong's theory could be expanded to include virtuality culture. It was necessary to draw attention to the gap that exists between his theory of secondary orality and virtuality, as well as the need to define appropriate terminology. Therefore, it was important that virtuality, technology, and literacy terms be explored for the purposes of this dissertation.

## CHAPTER III

### ANALYSES AND SYNTHESSES

#### Overview

This chapter considers ten main points that will be identified, discussed and summarized. The findings will also be included in a summary at the end of the chapter. The first point is that in order to explore the emergence of virtuality, it was necessary to first identify Walter Ong's foundational work involving orality and literacy cultures. His work was essential in order to identify the features of orality and literacy, which created the basis for understanding the features of virtuality culture. This is the reason theoretical expansion was chosen as the appropriate technique for this dissertation.

The second point is that because of the dynamic nature of virtuality, writing a dissertation in a traditional literacy-based format has obvious limitations. This is because writing establishes what Hirsch (1977) describes as a "context-free language." What this implies is that although writing about the nature of orality, literacy and virtuality is necessary for purposes of this dissertation, it is difficult to capture the essence of orality and virtuality through writing. Being immersed directly in orality and virtuality cultures means that we can truly experience them as a phenomenon in their original contexts extending us beyond the strictly visual forms of literacy. In the same way that a photograph cannot capture the color, presence and immediacy of a sunset, literacy-based formats cannot capture the nature and dynamics of orality and literacy in their original form.

The third point is that transformation of human consciousness through shifts from orality to orality-literacy and literacy inform literacy-virtuality and virtuality beyond

literacy shifts; and that contemporary technologies are mediating the emerging shift to virtuality by creating a human presence that is very different than that evidenced by orality cultures. This concept of presence is explored later in the chapter with regard to primary presence, associated with orality, secondary presence, associated with literacy, and tertiary presence, associated with virtuality culture. This points to the question of how technologies specifically mediate human presence and the way we, along with our ancestors, experienced the world through each of the cultural forms addressed in this dissertation. Definitions for primary, secondary and tertiary presence are also provided in this chapter.

The fourth point is that virtuality can be explored in contemporary terms for its own sake, as well as through the contrasts between it and orality and literacy cultures. This chapter includes a comparison of orality, literacy and virtuality features in an attempt to help the reader to understand the differences between them. Further detail is provided about the specific features of virtuality in an attempt to further provide explanation of this phenomenon.

The fifth point is that in order to understand virtuality in the expansion of Walter Ong's work, it was important to explore the historical and theoretical constructs of the term. This involved defining the terms "virtuality" and "virtual" and exploring what is already known about them through a theoretical analysis. As a result of this work, virtuality appears to be the most appropriate term to describe the recent cultural phenomenon that cannot be explained through literacy conventions.

The sixth point is that understanding dialogue in contemporary virtuality culture means exploring how technology mediates human experience. In attempting to

understand the nature of dialogue in virtuality culture, it was necessary to explore how scholars have viewed it through historical periods. This also means exploring specific contemporary technologies that impact the nature of dialogue and how connected or disconnected we may be from a particular experience.

The seventh point is that a current gap exists between what Walter Ong theorized as “secondary orality” and the concept of virtuality culture. These are explored in this chapter, along with the specifics on how they are similar and different. This includes their different functions and how they are manifested through media unique to each area. If Walter Ong were still alive today it would be fascinating to discuss the two areas, particularly since he is not present to witness the current shift with virtuality culture that is unique to contemporary culture.

The eighth point is that in becoming a culture of virtuality, there are possibilities that can be considered and actualized in the future. Although it is difficult to project all the specifics for what this will look like, this chapter offers some ideas for how we might consider the way we consider virtuality. This includes scholarly references, as well as exploring virtuality through metaphorical thinking in the ways we may see ourselves emerging as an actualized mass culture.

The ninth point is that defining virtuality culture means exploring the diverse nature of contemporary technologies and how they mediate human communication and expression. We are also just beginning to explore the possibilities associated with technology in creating new connections between one another in contemporary culture. This is discussed in chapter three, as it is imperative that we reconsider how the

characteristics of technology inform our understanding of orality and literacy cultures, in addition to virtuality.

The tenth point is that contemporary technology can mediate a “virtualizing of the word” reminiscent of Ong’s concept of “technologizing the word” (1982/2002). This chapter explores the technologizing, literacizing and virtualizing of the word and how different approaches to them are manifested. This includes a historical overview that serves to inform the reader of how writing, both traditional and “electricized” versions, have evolved with contemporary culture. Other ways of considering documentation and other communication modalities are also suggested, which includes sound exploration and the nature of hypertext. These points are addressed in more detail starting in the next section.

#### The Theoretical Task

The main purpose of this dissertation is to extend Walter Ong’s concepts of orality and literacy into the area of virtuality, creating a tri-fold understanding. This includes an exploration of the unique features of virtuality as evidenced by contemporary culture (which are addressed in Table 5 and aligned in Table 4 with those previously identified in Tables 1 and 2). Finally, a summary of findings is also included at the end of the chapter.

#### Writing About Virtuality in A Literacy-Based Dissertation

This dissertation seeks to create a vision of what is happening in contemporary culture by defining the language of virtuality that describes a shift in human consciousness that is difficult to ignore. By grounding the new language in the context of

Walter Ong's work in the context of literacy and orality traditions, we may find more secure pathways to point the future direction of virtuality .

The nature of studying virtuality culture has uncovered an uncomfortable truth, that the new forms extend beyond what has been previously defined by traditional literacy forms. Virtuality extends into new dimensions of understanding that do not fit neatly into the traditional literacy-based structure of the dissertation format. The exercise of writing this dissertation based in the traditions of print-based culture, through reading books and articles both online and in traditional form, has mirrored some of the tensions faced in the changes being experienced of the greater culture. Despite the obvious shifts in thinking from a culture of writing and reading to one that includes features of virtuality, this section of the dissertation will attempt to articulate the nature of what has changed in our culture. This description of a shift in human consciousness includes examples that extend into new domains of understanding, not limited to previous ideologies about the way knowledge is constructed.

#### An Approach to Theoretical Analysis

In order to define the unique features of virtuality, the mode of theoretical analysis has been selected as the appropriate technique to facilitate the extension of Walter Ong's theoretical work. Because of the broad scope of this work, this dissertation will explore the nature of how virtuality is transforming human consciousness on an exponential scale. It will include exploration into the nature of virtuality against the backdrop of literacy and orality traditions, as well as on its own terms in contemporary culture. This involves exploring the nature of contemporary technologies that afford the

presence of the human spirit and inform the beginning of the shift away from literacy dominance to a more complete virtuality-based culture.

Virtuality will be examined in two ways, first by investigating the ubiquitous phenomenon of virtuality through the features of an evolving contemporary multimodal culture; and secondly through addressing how it contrasts with the history of oral and written expression. Implications and ideas for considering a new paradigm of virtuality grounded in this theoretical analysis will also be offered. The distinction between a culture of virtuality and the proposed concept of secondary orality, theorized by Ong (1982/2002), will also be investigated. An alignment of the orality, literacy and virtuality inventories of thought and expression is provided in Table 4. A theoretical analysis of the virtuality inventory follows, constructed based on the features observed in the literature. These are first listed and then described in the sections to follow.

#### A Comparison of Orality, Literacy and Virtuality Inventories of Thought and Expression

The features of virtuality based thought and expression are highlighted in Table 4 below. Specific features of virtuality are highlighted in Table 5 – Features of Virtuality Based Thought and Expression, which follows in the next section.

Table 4

#### *A Comparison of Orality, Literacy and Virtuality Inventories of Thought and Expression*

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Orality	Literacy	Virtuality
Additive	Subordinative	Tertiary
Aggregative	Analytical	Hypermediated

Redundant Or Copious	Concise and Linear	Recursive
Conservative or Traditionalist	Conventional and Traditionalist Knowledge	Changeable Knowledge
Close To The Human Lifeworld	Interiorized Human Lifeworld	Exteriorized and Interiorized Human Lifeworld
Agonistically Toned	Agonistically Closed	Robust Adaptability
Empathic and Participatory	Objectively Distanced	Immersive and Participatory
Homeostatic	Layered	Actualized
Situational	Abstract Rather Than Situational	Contextual

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### Features of Virtuality

The features of virtuality based thought and expression are related to a fairly new cultural phenomenon and history relative to computer-produced virtuality reality and the contemporary technologies that mediate possibilities for human experience (Ropolyi, 2013). These features, which I have extracted from relevant literature, have been included in Table 5 below with a theoretical analysis, which will follow.

Table 5

*Features of Virtuality Based Thought and Expression*

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Characteristic	Features
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1. Tertiary
- Includes:
- virtual approaches to communication
  - a “seemingness” of an entity or sign that holds the place for something else
  - focus on multimodal expression and the multisensory
  - a focus on the “potential for actualized’ human consciousness
  - a focus on potentiality
  - potentiality of entity can fall back on orality and literacy forms but in new contexts, unique combinations and infinite instances; hybridity
  - involves adaptability
2. Hypermediated
- non-sequential and non-linear organization
  - hypertext organization and retrieval
  - an emphasis on recontextualized and remixed concepts
  - intensity in information
  - serendipitous discovery through hypertext
3. Recursive
- an emphasis on the virtual
  - includes features that can repeat themselves indefinitely
  - repetition or recurrence of entities and constructs for meaning in new contexts
  - recursive approaches to diverse communication forms
4. Changeable Knowledge
- recollection through a perceptive or sensational image or transformed into a slightly different version
  - potential for essence and possible states of being may occur depending on that essence
  - some potentialities may or may not manifest
5. Exteriorized and Interiorized Human Lifeworld
- holds the place for something else; stands for something else in lifeworld
  - focus on displacement of potential and nature of entity in lifeworld
  - virtuality cultures must conceptualize and express their multisensory knowledge with virtual references in the lifeworld
  - interiorization and exteriorization of contemporary media

- physical structure is removed from its information structure
6. Robust Adaptability
- flexible, resistant and adaptable depending on entity
  - can only exist in space and time
  - more complex entity than the original
7. Immersive and Participatory
- media instantaneously connects and disconnects the knower to other knowers
  - connects and/or disconnects new audiences
  - interactivity with entity
  - learning or knowing means autonomy and dependence with the known and/or unknown
  - unbounded potential for sociability and navigation
  - synchronous and asynchronous
8. Actualized
- created in time and space through concrete sensory actions
  - multitude of possible states of being that can be experienced and circumscribed by virtual entity
  - discernment and interpretation of entities and actions
9. Contextual
- phenomenon emerges in virtual moments and different contexts created through technology mediation
- 

## A Theoretical Analysis

Welsch (2002) has suggested that Thomas Aquinas introduced the term ‘virtuality’ in the context of its potential and actuality and “as a synonym for Aristotelian potentiality” (Goodrich, 2002, p. 3). It has been suggested that the term, ‘virtuality’ may “have been first used to describe interactive computer systems by Theodore Nelson” (Skagestad, 1999). Heim (1993) suggests that John Duns Scotus may have used the term ‘virtual’ first in history related to this context. This potentiality, which is always

associated with a specific entity, is said to also exist without actualization or realization of what is considered 'virtual' (Peirce, 1902; Popper, 1972; Skagestad, 1999).

Considering Peirce's (1902) concept of virtual, that is if X is something, not an X, but has the efficiency of X, the concept has been suggested as having potential, but is contrary to nature (Goodrich, 2002; Peirce, 1902). Peirce regards this relation between potential and nature as a displacement as the virtual implies something standing for another entity (Goodrich, 2002; Peirce, 1902). Therefore, "the virtual indicates the multitude of possible states that any entity may experience, circumscribed by the essential" as the "potential always relates to an essence in terms of the possible states that may occur depending on the essence of the entity, some potentialities exist while others do not" (Goodrich, 2002. para. 3).

Building on the definition of Peirce (1902), Bergson established a "new and more complex understanding of the virtual" which involved the realm of the virtual in "keeping it autonomous as well as connecting it with the real" (Welsch, 2002, para. 24). Welsch (2002) states, "Our perceptions have virtual images at their origin which then, via a series of intermediary steps, achieve actualization by giving rise to concrete sensomotoric actions" (para. 25). This suggests that in becoming actualized, the virtual as Welsch (2002) describes it "differs from its original form" (para. 25). This is further explained in an example Welsch (2002) provides within the context of Bergson's work, as he states, "the actualization of recollection, for example, as it occurs in sensation and perception, does not consist of an identical reproduction of the virtual image, rather the latter is transformed into a specific perceptive or sensational image, just as it could have been transformed into a slightly different one" (para. 25). It has been suggested that

contemporary virtuality is a new term for a paradigm that “tends to do away with ‘reality’ altogether (Welsch, 2000, para. 9). Considering Peirce’s (1902) definition of virtual, it is important to note that virtuality references the real thing in standing in its place, but that the virtual entity has a degree to which the quality of that original thing is realized.

Virtuality embodies the concept of virtual as it relates to the transitional condition of contemporary culture. This involves collective and instantaneous communication mediated by the vast number of contemporary technologies, connecting society both in real time and space, but that includes features that are fundamentally different than those common to both literacy and orality culture. Prensky (2012) supports this through suggesting that our thoughts and emotions are being communicated directly, even at long distances” (p. 18). It appears that a prerequisite for becoming a culture of virtuality is social interaction, which is similar to what Bruner (1990) suggests of language (p. 74-75). Although it is mediated by diverse technologies, virtuality is also recursive, meaning that society is connecting, exploring, communicating and expressing itself through pathways that are fundamentally different than features of the previous oral and literacy cultures.

Considering virtuality as a stage in the history of communication, it can be seen as tertiary to orality and literacy. This is not because it is not as important but that it has evolved as the third in place with regard to the evolution of communication in transforming human consciousness. This will be discussed later in Chapter 3 along with the concept of tertiary presence. In understanding the phenomenon of virtuality in contemporary culture, it is useful to consider how it is evolving with literacy, which Ong (1979) describes as, “totally artificial, a technology consciously and reflectively contrived” that “contrasts with oral speech” (p. 2). For example, writing, which is part of

the history of literacy culture, does not include a context for communication to ask anything of the audience or receiver of the information; the writer creates this context (Ong, 1979). However, in the shift to virtuality culture is included an emphasis on cultural dynamics created by variables of the contemporary technologies themselves that change the nature of communication through mechanisms for dialogue between the “reader” or “audience” and the person communicating. This suggests that virtuality as a whole includes some features of what Ong (1979) describes in live oral communication although it could be debated that it has the potential of being actualized in recollection holding the place in referring to the “natural oral world” (p. 3). Ong (1971) referenced this in describing human thought structures as being “tied in with verbalization” that has to “fit available media of communication” (p. 2). Contemporary culture includes many tools that did not previously exist, with vastly different communicative properties, many which included oral and aural modalities. For example tools such as Twitter, Facetime, web conferencing and augmented reality have retained the human structure of oral verbalization. It is now possible to have what Ong (1979) referred to as “a vocal interlocutor” in real time through automated online assistants and live networks of people that serve in this capacity. This example may relate to what Welsch (2002) states in considering what he referred to as “electronic culture,” as he seems to suggest that contemporary culture, or virtuality, has created a more complex version of an entity that represents what he calls “a primary future meaning of the real, and superseding the traditional meaning of the term” (para, 9). So in the example of the “vocal interlocutor,” the entity is one that is part of virtuality culture in the sense that it stands in the place of the entity it refers to symbolically.

When considering virtuality reality, which is one of the ways virtuality culture can manifest, there are three key factors that relate. According to Heim (1998) these include: immersion, interactivity, and information intensity (p. 221). Virtuality culture, unlike orality and literacy cultures, is also recursive and abductive (cf. Shank, 1987). Evidence of the recursive quality of virtuality is in the infinite instances and unique contexts expanding upon orality and literacy features. Therefore virtuality is a theoretical rule as a recursive process because the features can repeat themselves infinitely, constantly calling for new instances for meaning through shifts in human consciousness mediated through contemporary technologies. These can be applied repeatedly to various contemporary contexts such as through contemporary technology environments as exemplified in social media.

#### Bridging Orality, Literacy and Virtuality Features

It is through the features of orality, literacy and those emerging with virtuality culture that we can begin to understand how these are mediated in the way we communicate through these shared cultural mechanisms. This is reinforced by Bruner's (1990) statement about meaning as, "our culturally adapted way of life depends upon shared meanings and shared concepts and depends as well upon shared modes of discourse for negotiating differences in meaning and interpretation" (p. 13).

#### Literacy-Virtuality and Orality-Virtuality Contrasts

Generations throughout history have taken for granted the shift that Ong (1979) describes from orality to literacy-based traditions and the "gradual inroads of literacy upon orality," which appears to include scholars who were unaware of these "oral-literacy contrasts" (p. 2). Just as scholars once took for granted the historical oral-literacy

contrasts and the “gradual inroads of literacy upon orality,” literacy-virtuality and orality-virtuality contrasts exist that appear to be in a similar place as Ong (1979) theorized (p. 2). Despite the proliferation of contemporary terms that combine technology, literacy and cultural terms, the emergence of virtuality culture involves a preoccupation with defining the contrasts between orality and virtuality. When considering the features of orality, literacy and virtuality, there may be overlapping features and contrasts between them depending on how specific technologies mediate presence. For example, a concept such as ‘rhetorical virtuality’ may emerge from the contrast between the recursive feature of virtuality and the agonistically toned feature of orality. This possibility may exist because historically speaking, the dominance of rhetoric in teaching language has contributed to what Ong (1976) described in the oral residue in writing and print cultures (p. 18). We can infer that in the contrast between virtuality and orality, where we may see recursive feature in contemporary media related to “the art of public speaking or oratory” described by Ong (1979) that this may involve an orality-virtuality contrast, or a relationship between different dynamics in different contexts (p. 4). It is therefore not unusual for a new medium of communication to reinforce what Ong (1976) refers to as “the characteristic tendencies in the old” which was reflected in the “layers of irony in literature increased and intensified in their interrelations” (p. 16).

### The Nature of Dialogue

In contemporary culture, dialogue between media maker, speaker, writer and audience, and community, is mediated by the contemporary technologies that support them (Ong, 1982/2002). Ong (1971) described the Romantic Movement and Neoclassicism and the “preoccupation with otherness, with what is different, remote,

mysterious, inaccessible, exotic, even bizarre” (p. 255). This perspective offers a unique view into the disparity between the replication of commonplace traditions and romanticism (Ong, 1971). This concept of otherness is very much a part of the “networked mind” and landscape of contemporary dialogue, particularly as seen through the lenses of social media outlets such as Twitter and Facebook (Nyíri, 2008). What can appear messy about the concept of dialogue in our contemporary virtuality culture is that it can be difficult to identify and understand how a dialogue is taking place when the traditional concepts of time and space no longer apply, especially considering the number of tools competing for our attention in communication. This is particularly true when considering the example of a Facebook post, which may or may not inspire a dialogue, versus being more characteristic of an oration, or in the case of sharing of something that is considered viral, such as a meme inviting others to “like it” on Facebook.

Other technologies such as texting, have a similar dynamic in that they can flip between more literacy-based and oral forms depending on the level of interactivity of the receiver and the context for the communication. Also, a technology such as texting may also be the contemporary equivalent of transcribing oral conversation in mediating dialogue rather than considered a traditional literacy form (Swearingen, 1986).

Technologies such as texting also impact personal autonomy, in requiring our selection of how to receive communications, that is, how often, to what extent, and whether or not to interact with the communicator. Increased autonomy is most definitely a function of dialogue as the number of technologies that support it continue to increase. This is an example of an unmediated consequence of using technologies such as texting – although there may be an expectation on the part of a communicator for a particular individual or

group to respond to their own particular tool, the receiver may or may not reciprocate. Unlike ancient oral cultures, our verbalization through various technological forms today such as social media, can demand accountability from those involved in the creation of a specific message, but none from those who choose to remain disconnected from the experience. This is yet another example of the autonomy that is involved in the choices for contemporary dialogue. In ancient oral cultures Ong (1976) suggests this was not a concern as verbalization was a principle “directly accountable to hearers” (p. 13).

### The Gap Between Secondary Orality and Virtuality

There currently exists a gap between what Ong (1982/2002) theorized as “secondary orality,” and the concept of virtuality culture that needs to be addressed. Although secondary orality and virtuality share what Ong (1979) refers to as a “media-conscious world,” they each function very differently considering their purpose in communication and expression. Part of this stems from the nature of contemporary technologies involved in virtuality culture having a complexity and variability that is radically different than those reflected in what Ong (1982/2002) theorized was part of a culture of “secondary orality.” Also described as the electronic age, some of the media considered part of what Ong (1976) theorized as constituting secondary orality, such as the radio and television, can also be participatory. However, only a few media forms associated with secondary orality are considered interactive such as in the case of the telephone, but others are not, such as the case with television (Thornburg, 1996). Ong (1976) has described the participatory qualities of secondary orality as, “self-consciously planned and fully supervised” such as in the case of a television or radio program that looks spontaneous, but is planned (p. 16). Ong (1979) implied that television and radio,

which he theorized were characterized by orality, could be threatened if they directed society back to a “primary noetic economy” (p. 5). This is because Walter Ong (1979) theorized that secondary orality, manifested through television and radio did not introduce viewers to primary oral noetics in any sophisticated way (p. 6). Indeed virtuality has threatened both the existence of traditional television and radio in this way now that the masses are beginning to choose other means to stand in the place of these forms but in new contexts connecting through autonomous choices for communication.

Unlike secondary orality, which extends orality culture, virtuality culture’s features are unique to contemporary culture. For example, virtuality culture has the ability to reverse itself from conversing in one form to others and circle back on itself in non-linear ways depending on the technologies mediating the experiences. Ong (1979) refers to this as “noetic metanoia,” when he described reversals involving oral to chirographic thought (p. 4). Contemporary media reversal is a recursive attribute of virtuality that is fundamentally different than the theory of secondary orality (Ong, 1982/2002).

The nature of the interaction in virtuality culture is very different as it is both participatory and interactive. Virtuality also allows us to experience communication forms beyond what is visualized and heard through secondary orality media. The convergence of multiple forms of media within one device such as the smartphone creates another distinction. An example of the convergence of multiple sensory experiences within what Ong (1982/2002) had referred to as a “human lifeworld” includes a haptic response to the feel of a smartphone’s buzzing text while engaged in an immersive multimodal experience of a virtual world, with both events happening

simultaneously. Another example would be a web conference experience with someone at a distance while having an aesthetic experience or collaborating through a virtual entity online such as a digital image, web 2.0 tool, article, meme or something else (Linaberger, 2007). Essentially virtuality has created socially immersive and interactive experiences with others around the world (Bonk, 2009).

Another distinction between secondary orality and virtuality culture involves the issue of privacy. Marshall McLuhan (1964/1994) described this related to secondary orality in the nature of radio's relationship between "the writer-speaker and the listener" as private (p. 261). However, virtuality culture, which can have a speaker-listener relationship, also has features that are very public because of the nature of the interaction created by contemporary technologies. These issues include those related to critical discernment skills that mediate ethical and responsible uses of media, as well as the authenticity of digital information related to examples such as the Internet and social media (Eshet-Alkalai, 2004; Koltay, 2011; Shapiro, & Hughes, 1996). These are also some of the consequences that contemporary technologies such as web conferencing, social media, smartphones and online chat have introduced (Bonk, 2009). Therefore virtuality culture is much more public than secondary orality. This suggests that culture will continue to evolve in more public and interactive ways as the nature of technology and media evolves with it.

However, something else is happening in contemporary culture as people are organizing and communicating with their networks in very sophisticated, diverse and synchronous ways, allowing for more immediate communication and expression unique to the history of communication. This was not possible in what Ong theorized as

secondary orality, as most of the forms associated with it did not involve synchronous interaction between senders and receivers. Therefore, virtuality culture also has created an extended and much richer global village than was previously possible, as contemporary technologies have much more sophistication. This re-tribalization has allowed for a more expansive network of connected human consciousness, which has resulted in what Nyíri refers to as the “networked individual” (2008, p. 154).

While the history of literacy created a culture of privacy and identity, virtuality as more than the concept of secondary orality, has created a world of increased social identity similar to the dynamics of oral cultures, but amplified through technological media (McLuhan, 1974; Ong, 1982/2002). McLuhan (1962/2011) calls this the social world of “electronic interdependence” recreating the “image of the global village” (p. 36). The social collective, which continues to evolve with Ong’s concept of secondary orality also involves what McLuhan (1962/2011) described as the bicameral mind which involves a lack of focus on individual consciousness. What is challenging is that a consequence is that the vast array of technologies that are available have made communication messy as there is a question of who is communicating to whom and in what context. This is echoed in Ong’s (1976) remark that the invention of writing, and in particular print culture gave rise to the “devastatingly complicated” question of communication (p. 6).

### The Concept of Presence

In attempting to explore the nature of the soul, Kant has described it as having a presence in the world that is virtual instead of spatial (Kant, 1770; Welsch, 2002). According to Welsch (2002), when he “used the term ‘virtual,’ he did so with reference

to the question of how an object of one order can appear in a different order” (para. 23). Welsch (2002) suggests that Kant understood the presence of the soul to be “non-corporal in the corporal world” with a presence that “is not considered spatial, but virtual” (para. 23).

Ong (1962) has described the experience of presence as the need to “experience a living person and a need for communication (p. viii). Ong (1962) also described this idea of presence and humankind’s involvement with other’s presence and “the one whose presence we feel” in addition to the “one present to us,” which becomes “involved with ourselves” (p. viii). This relates to contemporary culture that is mediated through many types of technologies that have “penetrated into the deepest fibers of human living” that Ong (1962) suggests serve our “intellectual and spiritual needs” in communication (p. viii, p. ix). In deepening our contact in being present to ourselves and others, contemporary technology is mediating experiences that allow for greater connection to others in many different contexts, making it more necessary to define these differences. Unlike literacy, which Ong (1979) described as providing assistance by an imagined audience and something silent outside of us, virtuality not only supports a real audience, but also promotes contexts outside of the self. For example, Buxton (1993) suggests a presence involves a shared space with separate individuals located in different geographical places and the feeling that those individuals are in the same space. Finally, this may be related to what Galloway (2012) refers to as the “interface effect” or interfaces that “bring about transformations in material states” (p. vii).

Kant’s concept of presence related to the soul is also relevant to the way in which contemporary technologies mediate presence (Kant, 1770; Welsch, 2002). Because

contemporary technology mediates different kinds of experiences (that also relate to different dynamics in the way presence can be manifested), we are in need of different ways to consider the nature of presence. It may be useful to categorize the different ways contemporary technology mediates the dynamics of human awareness as primary, secondary and tertiary presence. Considering the three types related to logic and reasoning – primary presence is a more accumulative type of logic, or inductive; secondary presence is more analytic and logical, or deductive; and tertiary presence is recursive, or adductive (Shank, 1987).

#### Primary, Secondary and Tertiary Presence

The dynamics created through human perception and experiences relate to what Ong (1967) referred to as the sensorium and Kant's exploration of the soul (Kant, 1770). These dynamics that create presence are created through technology tools that mediate the experiences related to the feeling of presence (Peirce, 1902). In considering how presence is created related to human perception, there are three potential approaches to considering the concept of presence. These are at least partly informed by the specific ways that contemporary technologies mediate the concept of interiority and exteriority that Ong (1982/2002) has described.

There are also three different technology-mediated approaches that each include two areas that could be associated with virtuality culture and human lifeworld awareness. These include: 1. Primary Direct Singular Presence, 2. Primary Direct Collective Presence, 3. Secondary Direct Singular Presence, 4. Secondary Direct Collective Presence, 5. Tertiary Direct Singular Presence and 6. Tertiary Direct Collective Presence.

### A Definition of Primary Presence

Primary presence is constituted by the rules of oral culture and includes direct singular presence as in the oral dynamics between one receiver and one sender (Shannon & Weaver, 1949; Weaver, 1949). This is in keeping with the manner in which Socrates instructed through one-on-one dialogue (Ong, 1962b). An example of this would be the state of the learning between a learner and the teacher manifested in a traditional conversation. Primary direct collective presence relates to the collective group in a given learning environment. This includes traditional face-to-face settings or other very direct environments involved in the kind of presence that relates to orality features. This would involve technologies that mediate this kind of direct presence between at least two people through the use of the haptic technology in a shared physical space, such as an iPad.

### A Definition of Secondary Presence

Next, Secondary presence includes the rules defined by literacy culture and also includes direct collective and singular types. An example of secondary direct singular presence would be a traditional classroom lecture where the learner is the receiver of information that a sender or an artifact delivers which they copy in some visual form such as through writing or typing notes. This could include the dynamics created in a relationship between a student that is focused around sight and visual means through text, a digital work of art or the dynamic between a student reading an e-book. This is in keeping with the tradition of preserving dialogue through visual record (Ong, 1962b). This was evident historically through Cicero's travels beyond Rome to Greece to listen to philosophy delivered through oral means and later recorded in writing (Ong, 1962b). The main issue with secondary presence is that there is an absence of the primary

communicator related to the message that creates this type of presence. An example of secondary collective presence could be a teacher and an audience viewing static projected material together through an interactive whiteboard such as text or images.

#### A Definition of Tertiary Presence

This term utilizes the concept of virtuality as a tertiary stage, or third stage in the evolution of human communication. Finally, tertiary presence includes both the state of mediated learning between the learner and the teacher and is inherently interactive. It is in this interactivity that Martin (2010) suggests that there is “a blurring of the distinction between the teacher and learner” (p. 73). Prensky (2010) suggests this is an essential part of the partnering roles in the learning process with digital natives. This is only possible through technologies that mediate tertiary presence as the virtuality environment makes it immersive and dynamic. For example, technology tools and social media are the same in that they both mediate a conversation in a collective way, but the key is that they are simultaneously interactive. This also creates a tertiary experience of mediated presence as it creates a pathway to what is possible and actualized resulting in a culture of virtuality, which is very different than the type of presence associated with orality culture and absence with literacy culture. With tertiary presence, some kind of mediated experience such as through a haptic, touch-based technology would be evident.

Technology features that mediate tertiary presence relate to those contemporary technologies that create environments that have never before been possible in orality and literacy cultures. These technologies include social media environments, app-based environments and simulated environments. These environments include interactions between participants/players in real actual time. They also create participatory learning

situations that did not exist as Walter Ong (1982/2002) described the contexts for secondary orality.

### Mediated and Unmediated Consequences

There are also both mediated and unmediated consequences related to forms of virtuality culture and presence (cf. Shank, 1987). A mediated consequence of tertiary presence is an outcome that involves an intervention or an intermediary. Tertiary presence can also be created when it is intertwined with real circumstances as information created through a “technological situation” makes it possible to modify the nature of the situation (Ropolyi, 2013). This is a mediated consequence of using most contemporary technologies. For example, this might relate to an experience between three people in a scenario that involves collaborating through a Google Doc remotely as they conference through Skype. The dynamics in the collaboration that create tertiary presence in this instance would not be possible without the use of the two technologies. A consequence of this type of presence is that the collaborators may experience challenges related to the technologies that may make it difficult to complete their task, which would absolutely impact the presence they feel in an individual sense but also in the collaboration.

Finally, an unmediated consequence of virtuality refers to an outcome that does not involve conscious interventions or intermediaries. One of the unmediated consequences relates to tertiary presence is that a particular or group of technologies may create “unbounded sociability” opening up issues related to privacy and security (Woolgar, 2002).

The concept of tertiary presence therefore involves intentional properties we feel in constructing an environment with presence. This is related to the intentional and conscious choices we make in connections to features of virtuality. This is very different than contemporary technologies that have accidental properties or those associated with characteristics that unintentionally create presence. Virtuality culture has an element of awareness in the choice we make to generate presence within and outside of ourselves. However because of the physicality and complexity of contemporary technologies, they may create some intentionality for us, but there may be haphazard outcomes that interfere with creating intentional presence within and outside of ourselves with others.

#### Considering Interiority, Exteriority and The Sensorium

Ong (1982/2002) described “interiority and harmony” as characteristics of human consciousness (p. 71). It is what is “known to the person from the inside and inaccessible to any other person directly from the inside” (p. 71). Although each of the senses impacts what Ong (1969) refers to as “the human life world” in different ways, Ong (1982/2002) describes interiorization as most directly impacted by sound (p. 637). Ong (1982/2002) has suggested that sight is more challenging in that it does not “perceive an interior strictly as an interior,” as well as the sense of touch which loses some interiority through the process of perceiving (p. 70-71). It is through what Ong (1967) refers to as the “sensorium,” that is, the totality of human senses as one in perceiving and interpreting the world of experience that the concept of interiorization is fully realized. Contemporary technologies recreate and engage the sensorium through the inherently multimodal nature of human interaction (O’Halloran & Lim, 2011).

This is evident in the way contemporary technologies are evolving to allow for greater communication and discernment of expressions, gestures and movement in areas such as web conferencing, making interaction more expansive than was previously possible in human history. Prensky (2001) has described the “arrival and rapid dissemination of digital technology in the last decades of the twentieth century” as a “singularity,” that is, an event that “changes so fundamentally that there is absolutely no going back” (p. 2). Contemporary technologies relate to this “interior-exterior frontier,” described by Walter Ong (1962b), although examples such as social media, blogging, smartphones and advances in virtual reality, had not yet been created at the time of his writing (p. 262). This is also reinforced through Prensky’s (2012) suggestion that “our brain’s power is growing externally, through a new symbiosis with our technology” (p. 1).

When considering the multimodal nature of virtuality mediated by contemporary technologies such as through computers, iPads, smartphones and e-books, the interrelationship between the senses is more complex than isolating each one in the process of understanding interiorization. This is particularly relevant when exploring contemporary haptic technologies that require touch to control sound and visual elements simultaneously, such as in the case of some apps, or when two people interact with verbal communication via videoconferencing. Contemporary technologies are a result of what Ong (1969) described as an “interior structure” (p. 637). This is reflected in Ong’s (1979) commentary related to the violin as he described the musician interiorizing it as a machine, “in the crook of his arm and shoulder” (p. 6). Ong (1969) further describes this concept of interior sound of the violin suggesting how it changes if it is filled up with

concrete and water (p. 637). However, the interiority of contemporary technologies is not all based in the interiority of sound alone. This world of contemporary technology is like what Ong (1969) refers to as a symphony that is dynamic due to oral and aural qualities of sound, they are part of an “event world” associated with orality cultures (p. 637).

Contemporary technology tools have very diverse capacities that seem to suggest a focus on exterior human activities as well. It also important to note that contemporary culture doesn't engage in one primary accepted mode of communication and that as a whole.

Instead, contemporary modes that shape meaning related to representation and communication are diverse and include what Kress (2009/2011) describes as “image, writing, layout, music, gesture, speech, moving image” and “soundtrack” (54). This is reflected in Papert's (1993) statement: “It is not surprising, given the newness of this technology, that we have developed no universally accepted language to use it talking about it” (p. 12).

This is why virtuality shows qualities of both interiorization and exteriorization through recursive or reoccurring dynamics depending on what is mediated through technologies with all the senses. Therefore, while contemporary technologies may act as a catalyst for sensory exploration, we can also consider their exterior qualities and what particular devices or tools interiorize. It is through the collective mass of contemporary technologies that we begin to understand the fundamental shift in human experience that makes virtuality culture possible.

#### Becoming A Culture of Virtuality

Welsch (2000) states “the realm of potentiality is broader than that of actuality can ever be” and “There always remains a wealth of potentialities awaiting realization;

Potentiality is the inexhaustible ocean of actual being” (para. 13). Therefore, virtuality, or potentiality of the actual in what Welsch (2000) describes cannot be disassociated with reality as it is an, “inner element of reality, preceding every actual state of the real” (para. 13). An example of this kind of potentiality of what can be perceived as “the actual” is included in Welsch’s (2000) brilliant description of the experience of the sculptor with Michelangelo approaching a block of marble to free the figures that are “virtually present in the marble” and as a sculptor, bringing “the figure to the fore” as the virtual is “completely defined and already semi-actual” and a “full fledged potentiality – only until now a hidden one” (para. 16-17). This relates to what Welsch (2002) describes in the original use of the concept by Leibniz in suggesting that carving a block of marble was similar to the intellect as “the ideas of the intellect are in need only of being made explicit” as “opposed to being received or acquired” (para. 19). The idea of virtuality or the potential of the actual is also evidenced in the works of Teilhard de Chardin and John Perry Barlow (Martin, 2010). First, Teilhard de Chardin wrote of humanity’s role in building the Noosphere and also foresaw the role that could be played in this by the emerging science of “cybernetics” (Martin, p. 76). John Perry Barlow’s belief was similar in terms of potentiality as he believed through cyberspace we were creating a planetary nervous system” which also supports the idea of the potential environment waiting to be actualized (Martin, p. 76).

Welsch (2000) identifies the work of Leibniz and the intellectual ideas and truths that need to be actualized through being made explicit through our “inclinations, dispositions, habits, or natural virtualities” (para. 19). According Welsch (200) this includes what Leibniz suggested as our most important ideas related to unity, causality,

opposition and other similar terms are “innate from the beginning” (para, 19). Our capacity in becoming fully actualized through our potentiality has evolved with virtuality culture as the elements are present within us in the same way virtuality is evident in Michelangelo’s block of marble.

Lévy (1997) has described virtual worlds or virtual learning environments (VLEs), which certainly fall under the virtuality culture umbrella, as “instruments of self-knowledge and self-definition for humanity,” which have qualities that are also immersive and multimodal (p. 98). This immersive quality is related to what Dede (2009) articulates as an interface element in learning and engagement. Lévy also theoreticized that theories of cyberspace, that involve immersive interfaces which he described as “virtual,” included the “precondition for the inevitable technological future” which includes what are referred to as virtual communities and computer-mediated communication (Woolgar, 2002). Woolgar (2002) has suggested that these are also associated with “electronically mediated social relationships built around community values and what Rheingold (1991) referred to as “homesteading on the electronic frontier” (p. 2). Environments of virtuality, including virtual learning environments, therefore create new contexts for redefining the possibilities for self-actualization through socially connected aesthetic experiences mediated through contemporary technologies (Linaberger, 2007). This means embracing the aesthetic experience embodied by Maxine Greene’s (2001) definition of aesthetic education in the arts: “an intentional undertaking designed to nurture appreciative, reflective, cultural, participatory engagements...by enabling learners to notice what there is to be noticed, and to lend works of art to their lives in such a way that they can achieve them as variously meaningful” (p. 6). This is a

foundation of virtuality in that aesthetic experience emerges through more than one sensory channel. Therefore, in becoming a culture of virtuality we must consider what Papert (1993) has suggested is like writing as the first “significant departure from the oral tradition” in a similar way that there is some beginning evidence that virtuality is starting the first significant departure from the literacy tradition (p. 11). Literacy and ‘letteracy,’ or the skill that Papert (1993) describes in reading words made up of letters of the alphabet, are therefore “at risk because they do not have access to a wider immediacy of exploration and have only very limited sources to which they can address questions” (p. 11). There is also the question of how “symbolic information is continuously created, modified, and lost” in contemporary culture as “human beings interact and confront their environment” (Couch, 1989). Virtuality culture seems to offer this possibility in expanding our cultural exploration as many of the possibilities of the ‘immediacy of exploration’ are actualized.

#### Plato’s Concept of Chora as A Metaphor For Becoming A Culture of Virtuality

Although contemporary technologies may mediate experiences for out of the box thinking, many of the products are limited to the box that Ong (1976) referred to when describing literature as “taken to be like a box or other container, with something in it” (p. 2). However, considering the Peirce (1902) definition of the virtual, it involves standing in the place of something else. Therefore, it seems appropriate to consider the standing in the place of the possibility for actualization through a reference to Plato’s concept of *chora*, or what has been translated as the “container” or “space” between being and becoming (Hodgson, 2009; Mohr, 1985; Plato, 2009). According to Mohr (1985), there is also an additional metaphor that deals with the function of *chora*

expanding it to be considered a kind of medium that receives messages. The nature of virtuality also includes the same foundations that are embodied in *chora*. These include an interest in the structuring of space, place and placing (Brower, 2008). Indeed conceptions of space, place and placing have shifted in contemporary culture as the contemporary technology tools have allowed society to navigate through uncharted territories of our collective future. McLuhan (1964/1994) has suggested that we are extensions of our tools, so it is not a far-reaching concept to suggest that with evolving and rapidly changing technologies culture society is changing shape and evolving with more multimodal preferences for learning beyond literacy dominance.

The transformation from a state of being to becoming virtuality involves an awareness of the dissonance between the nature of where we have been with a predominantly literacy-focused culture and where we are going, into a more virtuality-focused culture. In becoming the vessel of possibility in navigating the future of virtuality, conscious experience related to self, intentions, expectations and perceptual contexts are informed by unconscious resources such as interpreters (Baars, 1997). In becoming a vessel for interpreting virtuality it is important to consider the concept of *chora* in the way culture receives everything, “without ever taking the form of the objects that enter her” (Fratzskou, 2010; Hodgson, 2009). Virtuality, unlike contemporary technology, is therefore like the concept of *chora* in that it is also “made as a model for all things, which moves and takes the shape of everything she receives” (Fratzskou, 2010; Hodgson, 2009). Therefore, the future of educational technology must include the concept of *chora* and the reflective self in interpreting the conditions for learning that make features of virtuality possible in learning (Damasio, 2010; Sallis, 1999). As culture

continues to re-invent itself to become more virtuality focused, it will continue to restructure human consciousness and education (McLuhan, 1962/2011).

### Exploring Contemporary Technology and Virtuality Culture

In creating a definition for virtuality culture, it is important to consider the nature of contemporary technology in all its unique forms and features. With traditional literacy conventions, technology modes emphasize orality, but also visual in addition to the integration of other modes related to multimedia and hypertext (Kress, 2003). In order to define the features of virtuality, it is necessary to consider the nature of how contemporary technologies mediate experiences that inform current and future culture. This is particularly important given the nature of multimodal communication and considering the convergence of contemporary media forms that include multisensory forms, which are essential components of virtuality culture.

This is extremely complex given the abundance of contemporary technologies that are contributing to the nature of virtuality and are mediating the experiences for the soul in “actualizing potential” of virtuality in infinite ways (Welsch, 2000). Considering that the shift from orality to literacy was once taken for granted, it is important that we are mindful of the shifting culture from literacy dominance to virtuality. This is not to say that literacy is not important or that it will suddenly end as virtuality culture is recursive, relating back to previous cultural forms. Different technologies provide experiences for us to reconsider orality and literacy features, the uniqueness of virtuality features in new contexts as well as how presence influences human consciousness. This dissertation is not meant to be prescriptive, but simply suggest the direction of our collective culture.

According to Mishra and Koehler (2009), all traditional technologies include three characteristics they refer to as specificity, stability and transparency (p. 6). Specificity refers to the clear and simple function of a particular traditional technology (Mishra and Koehler, 2009). McGrath, Karabas & Willis (2011) have also referred to this as technologies that function to accomplish one type of task such as through a chalkboard and the use of traditional chalk. These technologies have mostly stay the same over time with very little variation such as in the case of the new chalkboard—the whiteboard with dry erase markers (McGrath et al., 2011; Mishra and Koehler, 2009). So the example of the whiteboard evolving out of the chalkboard has not changed much in over two hundred years (McGrath, et al., 2011; Mishra and Koehler, 2009). Therefore, the characteristic of stability relates to how much the appearance of the technology, along with the use of technology stays the same over decades and centuries (McGrath, et al., 2011; Mishra and Koehler, 2009). However, in this example, the whiteboard mediates secondary presence, or a literacy-focused learning experience. Finally, transparency relates to the ease with which one can understand how a technology works and how it can be used (McGrath, et al., 2011; Mishra and Koehler, 2009). This relates to the ease of using contemporary technologies that mediate primary or secondary presence, as many of the forms are similar to the way they deliver the experience as their historical counterparts.

Contemporary technologies that mediate tertiary presence represent more complexity in their use. An example of this would be using virtual reality technology or social media, which create non-conventional environments where multiple viewpoints are present in different contexts and present themselves in multisensory ways. Mishra & Koehler (2009) also suggest that what they call “digital” technologies do not have any of

the traditional technology characteristics but have the opposite characteristics. They refer to the digital technologies they reference handheld devices, applications and computers, as protean, unstable and opaque. However, contemporary technologies appear to be evolving to include features of virtuality culture that show more complexity and interactive qualities that mediate tertiary presence, as compared with the development of previous digital technologies.

Regardless, without cultural evolution, the state of contemporary technology would be in a very different state of affairs. This would also limit the potentiality that comes with the development of virtuality as digital technology drastically changes not only the way knowledge is disseminated and communicated, but it also changes the learner and the content of learning (Prensky, 2001). It does this because contemporary immersive technologies associated with the virtual “unsettle existing relationships among the roles of conception, perception and sensation” (Hillis, p. 69). This suggests that the diverse nature of contemporary technology has fundamentally changed the nature of orality and literacy cultures. Ong (1962a) reminds us of this shift in considering the historical traditions that have made this evolution possible: “technological culture is not something inserted into the universe but something which comes at a certain point in a vast pattern of development” (p. viii).

### Virtualizing The Word

Virtuality and literacy are both culturally universal, as they are grounded in human cultures, which like orality, makes them innately essential in communication and expression (DeVore, 1967; Gagel, 1997; Keesing, 1966). Many technologies that mediate secondary presence, facilitate literacy based practices and what Prensky (2001) calls

“legacy” content related to traditional curriculum content such as understanding writing and ideas of the past. There has also been a shift in the evolutionary togetherness between technology and literacy, as many approaches to “literacizing” technology and “technologizing” literacy have emerged (Dyrenfurth, 1991; Fleming, 1989; Gagel, 1997; Lewis & Gagel, 1992). This has also informed the direction that virtuality culture is headed as technology is beginning to merge with it, creating a “technologizing virtuality” through new forms that are not based in Walter Ong’s (1982/2002) theoretical concept of “technologizing the word.” What this means is that just like oral performance was once “technologized,” other modalities in addition to those that are considered oral and aural such as those that are haptic are also being technologized in ways that are embodied by virtuality culture (Ong, 1971).

Contemporary technology continues to change the complexity of literate environments although it is still evolving (Gagel, 1997; The National Council of Teachers of English, n.d.b.). Ong (1982/2002) addressed the impact of literacy’s effect on consciousness through the restructuring effect, along with how the process of becoming literate was associated with abstract thinking, reasoning and higher-order cognitive functions (Gagel, 1997). In the same way, contemporary technology is restructuring 21<sup>st</sup> century approaches to literacy although largely in the service to improving literacy objectives (Hewitt, 2009). Described by Gagel (1997) as a “learned pattern of thinking,” traditional approaches to literacy which involve reading and writing now extend into the new media age of multimedia environments which according to Langer (1987), are evolving and capable of creating many of the same effects in learning. Literacy-virtuality culture includes the literacy residue of chirographic literacy although haptic technology

devices such as the iPad have allowed for more direct ways of “touching” a surface to facilitate expression, although the stylus is more of a direct connection to the pen, pencil and quill reminiscent of other historical periods (Kuchenbecker, Romano & McMahan, 2011).

Considering that writing was invented over 5500 years ago around 3500 B.C., it is not surprising that contemporary technology still mediates chirographic approaches to communication (Ong, 1968). As contemporary technology tools include smart pens, digital styluses and the possibilities of use our fingers to write in particular apps, the focus on chirographic traditions continues. However, this also provides further evidence that contemporary culture is in a transition from a chirographic culture related to traditional writing instruments such as quills, pencils and pens to one that includes virtuality features. These features allow for instantaneous communication in sending chirographic material digitally which suggests it is inherently different than traditional writing, which is circulated much more slowly than made possible by contemporary technologies. Just as Ong (1968) has suggested that stone-age designs for hand axes and spear points remained the same for thousands of years, the tenacity of writing implements has not changed much either.

Ong (1979) has suggested that writing is completely artificial as, “what you find in the dictionary are not real words but coded marks for voicing real words” (p. 2). Considering the time period that Walter Ong was writing and theorizing, the Internet was not the thriving entity it is today. The fundamental shift in writing, which emerged with the scribes of the Middle Ages and with letter writing in the Western world, has evolved into cyberspace, which has created a different context for writing. The recent history of

online diaries and weblogs has shifted the purpose of writing and changed the nature of the audience. Technologies such as Instant messaging and Twitter have archival features for example and still others feature live editing, narrating and social media collaborations through codifying oral communication, changing the dynamic nature of knowledge and the tradition of writing in every moment. Ong (1971) describes how one of the first things to be codified was oral performance. Although many may believe that texting and instant messaging are based in a tradition of writing, the nature of these tools is that they serve the purpose of codifying speech in visual form.

Many scholars have described the dynamics and character of electronicized reading and writing as a result of the evolution of the computer age (Dyrenfurth, 1991; Haas, 1996). Just as the invention of writing made it possible for oral cultures to preserve information, contemporary approaches to electronicized reading and writing have the same qualities. However, virtualizing the word has also made possible documentation through different forms such as through video, electronic slideshows, web2.0 tools and other ways of preserving information. Contemporary technologies are therefore challenging what Hartley (1982/2002) points out is the uncontested medium of print culture as the primary mode of communication (p. xiii). Some scholars have historically seen contemporary technologies such as broadcast and screen media as what Ong (1982/2002) described as “destroyers rather than creators of knowledge.” Others consider that many cultures that include contemporary technology culture, as compared with print culture, have preserved much of the primary orality way of thinking (Hartley, 1982/2002; Ong, 1982/2002).

Contemporary technology has also created mechanisms for returning to collective society and a culture of oral traditions that have evolved through the myriad of digital forms, tools and approaches to communication (Johnson, 2009). Digital orality and aurality have evolved with contemporary technology as well as music and other forms have evolved as part of the multimodal communication experience (Rice, 2006). Libraries and other institutions of learning have had to adapt to changes in the way they facilitate experiences related to print culture as they create mechanisms to share books via e-readers and other devices or risk obsolescence, although most institutions show print culture bias and a preference for literacy culture (Johnson, 2009). Johnson (2009) suggest that libraries, like other institutions such as schools and school libraries determine the channels that transmit culture which is important to consider since they influence the role of media and are related to the digital divide. Evidence of the transition from print culture to one that is based in digital formats is in the emergence of e-books and electronic formats such as pdfs.

Perhaps the most challenging aspect of digital preservation is that the approaches to documentation are broader than our minds can comprehend. Multimodal documentation forms that record cultural materials have created possibilities that enable anyone who has access to the internet and contemporary technologies, to document, publish, record and annotate anything and everything that they would like to preserve. The concept of preservation through contemporary technology forms can be debated. With the rapid change that comes in a culture of virtuality, obsolescence is a very 'real' consequence of preservation.

Sound exploration in the electronic age has contributed in new ways to explore oral ways of thinking and knowing, which are inherent to ‘virtualizing’ the word (Ong, 1962b; Rice, 2006). McLuhan (1974) suggests that that the acoustic world has changed the visual world just as literacy impacted the oral traditions of Homer. Hypermedia has contributed to this idea as it changes the way that texts exist in relation to other communication forms, as well as the way we read them (Landow, 1991). Rice (2006) describes the importance of rhetorical engagement through aural dimensions, suggesting that “ka-knowledge” or nonliterate forms disrupt conventions of traditional print culture or the “Renaissance public” (p. 268). This is related to Ong’s concept of “sounding out” and voice, rhapsodizing and mixing as it reactivates pathways to the oral elements of culture (Ong, 1962b; Rice, 2006).

Rice (2006) also suggests the importance of digital writing and structuring a theory of sound related to hip hop’s “rhetorical structuring via sampling, mixing, and remixing” which “constructs complex aural-based relationships among disparate texts” essential to new media work (p. 268). Rice (2006) also suggests that the practice of digital methods of composing “via sampler and computer” can “serve as a place to invent a digital writing practice based on aurality” (p. 269).

Contemporary technology continues to transform traditional print forms and create possibilities for “technologizing the word” through the use of mobile devices and interacting with text via the Internet and Smartphone screens (Malette, Kara-Soteriou & Leu, 2005). Texting is just one technology example that has had a significant effect on traditional literacy, although it may be considered an orality-literacy contrasting medium,

reminiscent of the way performances were recorded on paper through historical oral traditions (Ong, 1982/2002; Plester, Wood & Bowyer, 2009). The distinction however between texting technologies and early written accounts of oral performance is that the former involves more speedy communication to its receiver. Many contemporary technologies such as texting areas have less to do with the traditional history of literacy and more to do with a focus on orality and live conversation.

Therefore the discourse of technologized literacy and literacized technology does not imply that these relate strictly to traditional notions of literacy. Some scholars have even suggested that new media forms have led to “aliteracy” or the choice not to read traditional print forms (Agee, 2005). Perhaps this is pointing to one of the features of virtuality, that is, the multimodal quality of experience with it. Virtualizing the word suggests that the tradition of the word is transforming into something that is not limited to the concept of technologizing the word. Virtual reality is one example of a space that includes the possibility for actualization that does not include words but aesthetic experience grounded in all our senses (Linaberger, 2007). These kinds of environments allow us to become the place we are in as they are immersive and involve tertiary presence created through the virtual reality technology that makes them possible.

Regardless of whether technology ‘technologizes’ literacy or literacy ‘literacizes’ technology, technology fosters communication and has evolved as an important element in contemporary literacy environments because both can be considered situational. They are situational because they are considered what Bruner (1990) refers to as “conceived of as continuous with a cultural world” (p. 105). This is evident in the inseparable and transparent relationship between

technology and writing when we compare the same act of writing using the iPad to what Haas (1996) suggests in the stylus of the ancients and the pen and ink used by medieval scribes in their situational contexts (p. x-xi). Haas (1996) has also described the nature of technology as it supports and constrains the writing processes as cognitive processes and cultural exploration (p. ix). This will potentially impact the cultural dominance of literacy, particularly when one considers the way in which changes in the dynamic approaches to reading and scanning web pages have already changed the nature of reading (Clark & Mayer, 2011; Ong, 1982/2002).

McLuhan (1964/1994) has suggested that writing has become a much more complicated enterprise with contemporary technology with the evolution of computer languages (p. 80). This includes the ability to translate languages and html code into other languages and code as text. According to Rada (1989) there are three characteristics that separate them from hierarchically structured printed texts (Lunin & Rada, 1989; Reinking, n.d.). These include distinct units of text in a database form, a semantic network that connects the units and the tools that allow for mobility through the network (Lunin & Rada, 1989; Reinking, n.d.). This has been very influential in the creation of electronic texts, which has additionally had a profound impact on the evolution of technologized literacy. It would seem that electronic literacy is reflective of a culture of literacy-virtuality, which has evolved to create opportunities, which are distinctively different than static approaches to traditional literacy (Reinking, n.d.). That is because hypertext allows for immediate access to an infinite network of dynamic information and

increased human autonomy in more direct forms of communication reminiscent of primarily oral cultures. Therefore, according to Landow & Delany (1991), hypertext allows us to “transcend the linear, bounded and fixed qualities of the traditional written text” (p. 3). Nyíri (2008) suggests it is a very different experience with hypertext versus linear text (p. 153). This is also because hypertext has mediated experiences that are not limited to visual text but also provide links to parodies, live stream video and other audible content that allows people to connect in real time. Thornburg (1996) described hypertext as a strange concept in its inception to those used to the linear qualities of traditional text, stating “text objects could be linked to other text objects so that, by selecting one part of a document you could be transported to another” (p. 19-20).

Contemporary culture also provides much evidence of how technology continues to promulgate literacy through terms such as teleliteracy, media literacy and multiliteracy (Abram, 2009; Bazalgette, 2009; Bianculli, 2000; Cope & Kalantzis, 2009; Fleming, 1989; Karchmer, Mallette, Kara-Soteriou & Leu, 2005; Ong, 1971). The existence of these terms provides evidence of a change in literacy and technology that is influencing the unique direction of human culture. The complexity and diversity of all the different terms points to the shift from traditional literacy to literacy-virtuality culture, and a virtuality that includes literacy residue. This blending of virtuality and literacy represents a major shift in human consciousness so profound that is similar to what happened historically when orality and literacy cultures overlapped. Ultimately technology-mediated virtuality culture will most likely evolve out of the transition from literacy just as

literacy evolved out of ancient orality cultures to become more culturally dominant (Havelock, 1982, 1986; Ong, 1982/2002). It seems clear that contemporary technology will continue to mediate in terms human experience. The growth path of virtuality is not clear, but it will clearly be something different than it is now, particularly once contemporary technology tools become routine.

This is compounded by the challenges of virtuality culture in that there is not necessarily one culturally dominant communication channel that relates to the word such as in the case of traditional writing and texts. This is encapsulated in the notion of “reading the world” rather than relying strictly on “reading the word” (Freire & Macedo, 1987). In learning to read the world, it is important to consider that there is much that can be learned outside of conventional systems outside of traditional literacy environments. As connectivity has evolved, with over one-third of the world’s population online as of 2011 and a projection of fifty percent by 2013, it is clear that communication and learning is happening outside of conventional systems (Prensky, 2012).

#### A Summary of Findings

In conducting a theoretical analysis of Walter Ong’s orality and literacy work and expanding his theory to include virtuality, there were several findings. First, the term “virtuality” was the most appropriate selection in describing contemporary culture as it builds on Peirce’s (1902) definition of “virtual” and describes the characteristics that emerged to describe it. Second, there was the discovery that virtuality features differ from those related to orality and literacy. This emerged through aligning the orality, literacy and virtuality features in Table

4. This suggests that contemporary culture has begun a shift toward something that is aligned with features of virtuality. Next, there exists a tension between dominance of literacy culture in conjunction with the emergence of virtuality culture. Another finding was that the emergence of virtuality is a recent phenomenon and that there may be contrasts between literacy-virtuality and orality-virtuality that need further exploration. An additional finding was that Ong's hypothesis concerning secondary orality is very different from the recursive nature of virtuality culture.

In conclusion, it is important to point out that there is theoretical and historical value in considering virtuality against the backdrop of orality and literacy cultures. However, contemporary technologies are mediating human presence in ways that are multimodal and not limited to visual and oral modes of expression. In considering the ways that presence is created, it was discovered that virtuality could be considered tertiary to orality and literacy in terms of cultural evolution. This suggests that there is also a kind of presence created through both orality and literacy forms that are fundamentally different from virtuality. One can hypothesize that orality relates to primary presence and that literacy relates to secondary presence, simply because of the order in which they existed in terms of cultural evolution. Considering the different interplays between contemporary technologies in creating dialogue and interactivity, it is not surprising that they mediate different human experiences. Finally, just like Ong theorized that a period of "technologizing the word" has impacted culture, it also appears that there is a "virtualizing of the word" that is just beginning to evolve.

## CHAPTER IV

### CONCLUSIONS AND REFLECTIONS

#### Introduction

Ong (1979) has suggested that popular culture was once “discernibly under the influence of literacy” which is still the partially the case in contemporary culture (p. 6). However, just as oral culture was once transformed by literacy, which embodied writing and print, the advent of virtuality culture is also beginning to restructure consciousness in all aspects of everyday life. Considering that Ong (1977c) states that consciousness “in the movement from orality in the West to the modern technological world took some 6,000 years” while a similar restructuring in Africa is taking place “in two or three generations,” it will be interesting to observe how culture continues to evolve in virtuality (p. 428). Therefore, although literacy and orality continue to inform contemporary culture in different ways, there is a fundamental shift happening that is very different than the richness offered through these traditions. The advent of social media and other ways of connecting and communicating with others, and the mass popularity of contemporary media suggest new directions are needed in exploring our understanding of culture.

Society is changing, which raises questions about how human consciousness has shifted. Although virtuality has just begun to transform society in ways similar to literacy’s impact on the cultures of orality, the potential of its continued evolution is fascinating to consider. It seems likely that this growth will ultimately threaten the dominance of a strictly literacy-based culture, although it may be premature to predict the mechanisms or outcomes. What is needed now is an awareness of the phenomenon in our contemporary culture, recognizing that our culture is distinctly different from traditional

literacy culture, pointing to the need for further exploration. Papert (1993) suggests that “the movement from literacy to media-based knowledge acquisition may be even more important than the movement from preletterate to letterate culture” (p. 12). It is also significant to point out that there is evidence of overlap between literacy and orality features of culture and virtuality and this area needs further study. This dissertation suggests how virtuality culture is just beginning to evolve, when considering the way that contemporary technologies mediate experiences that create tertiary presence.

This includes a need to understand more about how technologies create primary, secondary and tertiary presence. By understanding more about the process of how technologies create presence, we will make more mindful choices about their alignment and in which contexts we allow them to mediate our experiences. This type of awareness has the potential to inform all areas related to social and cultural experience including communication, education, politics, ethics and many other areas relevant to human existence. Additional investigation is suggested in studying the impact of virtuality culture including its mediated and unmediated consequences.

#### Implications and Suggestions for Further Research

##### The Restructuring of Human Consciousness

At different points throughout history, orality and literacy cultures have all played a role in re-structuring human consciousness through sensory channels of communication and expression (Ong, 1982/2002). Human consciousness was first expanded to literacy, and literacy was grounded in oral traditions. The transition from orality to literacy influenced culture and transformed human consciousness. Literacy became the tool for

extending orality. As literacy became popular, consciousness expanded. The body and human emotion are essential to this idea of expanding consciousness (Damasio, 1999).

This involves the evolution of the multimodal nature of technology as part of normal everyday life, as it will create systemic changes in human consciousness as the world evolves, much in the same way that literacy transformed oral cultures (Ong, 1982/2002). However, just as there was a time when literacy was in its infancy stage, so too is technology. Therefore, contemporary technology is at the same threshold that literacy was when it began its transformation of oral culture. It has the capability to mediate the potentiality for an actualized culture of virtuality (Peirce, 1902). This raises interesting questions about where we may be going in the evolution of virtuality, and how technology will continue to inform human potential and actualization as a culture.

Welsch (2002) describes this as an imperative in the realization of being and cognition evident in traditional ontological and epistemological history as “the virtual [which] has no dignity of its own; its only destiny is to become actualized and thus to vanish as virtual” (para. 28). Reflecting upon the rapid cultural developments since the 1960s, it is clear that the accessibility of knowledge have never been more instantaneous and accelerated than the present time, as mediated through our use of contemporary technologies.

The massive social and psychological structures of knowledge that Ong (1968) suggested were immobilized knowledge in stone-age cultures, could be seen as our current parallel knowledge of the differentiated choices that contemporary technologies offer us in the current cultural shift. An important facet of virtuality is the idea that there is a rapid development of a variety of contemporary technologies and vehicles that allow

for greater autonomy in communication choices. This also makes research in the area of knowledge construction through shifts in human consciousness very complex, as well. Virtuality culture is therefore in the process of re-structuring consciousness as the novel features of technology media are replaced by automatic voluntary control and action, which comes with experience (Baars, 1997). This experience relates to Walter Ong's (1968) description of the acceleration of knowledge in time as, "a time toward the beginning of man's history when knowledge took 10,000 years—perhaps even 100,000 years—to double, and that at a later period it doubled 1000 years, and still later in 500 years" (p. 3). In the late 1960s, Ong (1968) also suggested that at that time it had been estimated that society's knowledge then doubled every 15 years (p. 3). If Walter Ong (1982/2002) had seen the rapid growth of contemporary technologies in the current form of smartphones, virtual reality environments and social media, one wonders what he would say about the acceleration of time. Prensky (2012) gives us some clue with his notion that at the present moment, "human culture and context is exponentially changing for almost everyone" (p. 2).

How does the emergence of virtuality culture play a role in re-structuring human consciousness and inform the nature of knowledge? How is primary, secondary and tertiary presence created through contemporary technologies and how do they nourish the soul and actualize potential in the way that Kant (1770) has suggested? Hodgson (2009) has described Plato's concept of *Logos* in that it "refers to the ways in which we think in the possibilities of thought that radically change with each technological shift" (p. 105). What are the possibilities that the shift in virtuality culture brings? The changes in thought are correlated to changes in technology as a medium of communication, which

then opens “possibilities for thought” that lead to changes in being, thinking and saying” (Hodgson, p. 105-106). How will specific contemporary technology media help us to shed light on the shift in human thought? Much more research needs to be conducted that explores the nature of virtuality and how human consciousness is changing through the advent of a shifting contemporary culture.

### Virtuality and The Sensorium

Considering the number and complexity of modes for communicating one’s message, contemporary technology includes possibilities related to visual, aural, tactile and kinesthetic sensibilities, which have elements of orality and literacy cultures, and which will continue to evolve in their influence upon education (Haas, 1996). It is necessary therefore to explore haptic, sight, aural, oral and sensory channels related to creating virtuality environments which are conducive to learning. A question that might be asked is, how does the vibration or the other multimodal capabilities of the smartphone relate to virtuality culture (Prensky, 2012, p. 183)? Considering Prensky’s (2012) report that over fifty percent of phones in the world are now smartphones, there is something implied about the way we are engaging with the device that is not limited to oral, aural and visual modalities (p. 184-185). Research into how specific technologies mediate experiences and the nature of those experiences is also needed. It is essential that we consider these systematic and collective ways our culture is being transformed through collective sensory experiences related to communication. This includes more study related to virtuality culture and semiotics related to Peirce’s (1902) work and what O’Halloran & Lim (2011) refer to as “multisemiotic communication,” that is, experiences that are mediated by language, as well as those referred to as corporeal resources that are

multimodal, such as in the case of touch, smell and other senses (Kress, 2010). This is an important area of investigation because of the multisemiotic communication inherent in the use of contemporary technologies that are embodied in virtuality culture (Peirce, 1902; Skagestad, 1999).

### The Evolution of Communication And The Responsibility of Knowledge

Many authors contributed to Ong's (1968) edited book, *Knowledge and the future of man*, which addressed learning environments that focus on knowledge in time, related to man in the physical world, his life world, as well as the interiorization and exteriorization of knowledge. The text also illustrated our responsibilities in the future growth of knowledge in areas such as politics, group relations, the physical sciences, life sciences, engineering and commerce, philosophy, anthropology, psychology and theology. All of these areas are still relevant today when considering the implications of virtuality's impact upon contemporary culture. This is echoed in Freire's (n.d.) work in cultural politics. Additionally in the evolution of virtuality culture, it is also important to consider the ethical, spiritual and mindfulness aspects related to contemporary technologies and the environments they create, as well as how they mediate the concept of presence. This is mirrored in Ong's (1962) own interest in the cultural and religious implications of technological culture (p. ix).

As well as the issues referred to above, digital equity and access issues are areas that may be an unmediated consequence in the evolution of virtuality culture because of the economic and social implications of contemporary technology. This is already a documented challenge as evidenced in the identification of issues of bandwidth, Internet access, mobilizing devices and economics. These variables need to be considered in the

history of cultural evolution (Prensky, 2012). Other areas that need to be explored, specifically related to the evolution of virtuality culture, include other social sciences, the arts, history, language and education.

## Education

Contemporary education is still entrenched in the industrial revolution ideals as suggested by Papert's statement (1993), "Despite the many manifestations of a widespread desire for something different, the educational establishment, including most of its research community remains largely committed to the educational philosophy of the nineteenth and early twentieth centuries" (p. 3). Because the traditional educational establishments have been steeped in oral and literacy traditions reflected in the broader context of cultural traditions, this is not surprising. As a result many institutions of education have been generally suspicious of new media forms (Raymond, 1980). The tenacious traditions of literacy are part of the tension between where we have been and where we are going in education (Papert, 1993).

The current educational climate is also in a state of technology-mediated literacy culture, ripe with examples of domesticated and prescriptive approaches to learning. Educational initiatives seem to predominantly favor adopting technologies that reinforce literacy-focused skills almost exclusively. Although reinforcing traditional literacy-based skills is part of the movement to incorporate contemporary technologies into teaching practices, doing so exclusively perpetuates the literacy models made popular during the industrial revolution, subsequently severely limiting the possibilities that can be actualized through the development of virtuality culture. There also exists the challenge of educational environments functioning largely as closed systems, accompanied by the

gate keeping behaviors when it comes to innovation with technology tools. When this issue is combined with other limits, considered to be the barriers to technology integration, exploratory learning possibilities that exist outside of educational institution are also severely limited (Ertmer, 1999). Considering the cultural shift that is taking place, virtuality theory may provide potentiality in opening up barriers to technology integration that currently exist in some educational environments, particularly around second order barriers where the tenacity of literacy-based practices may be prevalent.

The challenge is that contemporary virtuality culture as a whole is multimodal, connected, expansive and open, when viewed outside of the realm of our educational institutions. This will continue to create stress and pressure within these same traditional educational environments. With the potentiality of virtuality culture, we are no longer limited to traditional approaches to educational institutions, although we certainly can respect and be informed by the wisdom and tenacities of their traditions. Ong (1961) once referred the “Ramist classroom” stating that “the schoolroom is by implication the doorway to reality, and indeed the only doorway (p. 47). At one point in history this made sense as Havelock (1952) suggests with “general education [which] had to conform to the conditions of oral culture” as there were “no text-books” (p. 100). In light of the change that is beginning to evolve with virtuality culture, it is imperative that we begin to take seriously how contemporary cultural shifts have created by other “doorways” as well as the environments without doors, while addressing the learning environments which are relevant to digital natives (Prensky, 2001). The features of virtuality address learning possibilities in the gap between literacy-based education and current cultural trends that may be more relevant to digital natives, although they also include digital immigrants

(Prensky, 2001). As contemporary culture and self-realization evolves, so too will education and the vocabulary, which I predict will conform to more of the conditions of virtuality culture (Havelock, 1986; Peirce, 1902; Skagestad, 1999).

Although virtuality culture continues to rapidly transform society, and expand consciousness through technology-mediated means, it has only begun the process of restructuring education. There are three aspects we may want to consider in exploring virtual culture's impact upon education: 1.) How contemporary technologies create primary, secondary or tertiary approaches to presence, 2.) how virtuality culture impacts school culture related to teaching and learning and 3.) how those in education create learning environments conducive to the features of virtuality culture. It is also important to consider the restructuring of education in the future to include contemporary technologies that will continue to evolve and mediate learning experiences that include other approaches to media that transcend strict traditional literacy environments (Kellner, 2002, 2004). Therefore the question remains: How does virtuality culture function in service to the different ways in which digital natives communicate, especially in light of Prensky's (2001) commentary that "today's students are no longer the people our educational system was designed to teach"? What do virtuality culture environments look like in light of the current educational debate, in comparison to the traditional brick-and-mortar environments and those that exist outside of that environment? What does virtuality culture look like in specific grade levels or are grade levels no longer necessary with virtuality culture? And what is the best instructional environment for learners as virtuality culture continues to evolve? What do virtuality culture environments look like in different content areas or do they better encourage rich integrated learning? How does

virtuality culture relate to distance education and online learning communities, including different hybrid, asynchronous and synchronous spaces? How will virtuality impact knowledge in the future? These are all questions that suggest much more needs to be explored regarding education and the shift in virtuality culture, particularly when considering contemporary technologies.

### Educational Technology

The change in human consciousness through virtuality culture also has implications for educational technology, which includes the need to understand how the development of rapidly changing technologies informs virtuality culture. This is particularly true when considering the portability and mobility of our technological devices (Kress, 2010). What is the nature of virtuality when considering the field of educational technology? Because educational technology is evolving in education, the implications of how contemporary technology tools are accelerating the change in cultural norms different than traditional literacy culture are important to consider (McGrath, Karabas & Willis, 2011; Mishra & Kohler, 2009). Papert (1993) has suggested that not since the invention of the printing press “has there been so great a surge in the potential to boost technicalized learning” but that the “same technology has the potential to detechnicalize learning” (p. 55). Therefore the question that Papert (1993) suggests related to how technology will “strengthen or undermine the technicalness of what has become the theoretical model, and to a large extent the reality, of school,” is important to consider related to virtuality (p. 56). Considering the transition from a literate to virtuality society, educational services will need to continue to address the changing dynamics created through the intersection of evolving technologies, pedagogy and content, as well

as the priorities of educational institutions. This is essential if technology will support what Papert (1993) refers to as the “megachange in education” as influentially as it has in other fields and that directly correlate with the emergence of virtuality culture (p. 56). With the evolution of virtuality culture comes the responsibility to consider the pedagogical implications for education, particularly around how we can create flexible learning environments that create tertiary presence.

#### Technological Pedagogical Content Knowledge (TPACK)

Currently one of the revolutionary approaches to integrating contemporary technology is through the Technological Pedagogical Content Knowledge (TPACK) framework. It would be interesting to see research related to a theoretical revision and rethinking of TPACK based on the features of virtuality culture informed by the way primary, secondary and tertiary presence is mediated through contemporary technologies. This includes the question of how virtuality culture impacts technology, pedagogy and content, as well as the intersections between them, particularly with regard to the multimodal nature of contemporary technologies and the sensorium. Other implications would mean considering how virtuality culture would inform content domains, disciplinary perspectives and the interdisciplinary connections between them, as well as practical applications and implementations with undergraduate, graduate, faculty, and teacher professional development settings (Polly & Brantley-Dias, 2009; Polly & Mims, 2009). It appears that virtuality culture will continue to evolve as it continues to be mediated by other multi-disciplinary and multimodal technologies; therefore we will need to develop “an ecumenical spirit” in this evolutionary process (Haas, 1996).

How does creating an environment reflective of virtuality culture inform the TPACK framework in theory and in practice? This area of research holds tremendous potential. As the theory unfolds, the connections between TPACK and the shift in human consciousness created through virtuality will likely become clearer.

### The Student Learning Activity Types

Harris & Hofer (2009) collaborated with a series of content specialists to create comprehensive taxonomies of student activity types that are evident in learning environments including K-6 Literacy, mathematics, music, physical education, science, secondary English language arts, social studies, visual arts and world languages (Blanchard, Harris, & Hofer, 2010; Dempsey, Harris & Hofer, 2012; DePlatchett, 2001; Grandgenett, 2001; Hammond, Manfra, 2009; Harris & Hofer, 2009; Harris, Hofer & Young, 2009; Koehler & Mishra, 2008, 2009; Lee, 2001; Niess, 2005; Polly & Barbour, 2009; van Olphen, 2001; van Olphen, Hofer, & Harris, 2009, 2012-2013). These are aligned with ideas for use of specific technologies along with different activities that can be combined in different ways to create new possibilities for learning. These learning activity types provide support to teachers in planning learning experiences while considering content and a “grounded approach” to technology integration (Harris & Hofer, 2009). There is an excellent opportunity to investigate the implications of virtuality culture in conjunction with the student activity types taxonomies in planning learning experiences that engage digital natives in multimodal ways and through a variety of approaches (Harris & Hofer, 2010; Harris & Hofer, 2009; Harris, et al., 2009; Harris, Mishra & Koehler, 2009; Harris, Hofer, Blanchard, Grandgenett, Schmidt, van Olphen & Young, 2010; Hofer, Harris, Blanchard, Grandgenett, Schmidt, van Olphen & Young,

2009). As part of a “grounded approach” to integrating technology, it may also be important to consider the current cultural shift and the specific features of virtuality in the future development of the student activity types.

### Literacy, Technology and The Student Activity Types

Considering the literacy-virtuality culture shift, it would also be interesting to explore how this impacts the literacy-based student learning activity types in theory and in practice and how primary, secondary and tertiary presence is created through their use (Harris & Hofer, 2009; Harris, Hofer & Young, 2009). Areas traditionally associated with literacy such as English, K-6 literacy education, reading, world languages and English as a Second Language (ESOL) are reflected in the taxonomies, so examining the nature of what the suggested technologies mediate related to virtuality and orality would be fascinating (Hughes & Scharber, 2001; Schmidt, & Gurbo, 2001; Spires, Hervey & Watson, 2013; van Olphen, 2001; van Olphen, Hofer, & Harris, 2009, 2012-2013). Other contexts for studying virtuality include visual, oral and kinesthetic communication and expression such as music, visual arts and physical education, particularly considering the suggested technologies that mediate different human experiences and types of presence. It would also be appropriate to consider how the various content-specific taxonomies could be combined in created multimodal approaches that potentially lend themselves to creating environments similar to virtuality culture mirrored outside of the educational institution. This might involve an investigation of how educational services, pre-service programs and teacher preparation could be structured to address virtuality culture and the use of the student activity types.

## Multimedia Learning and Virtuality

Much of Clark and Mayer's (2011) research in e-learning has suggested that media forms such as narration, animation, graphics, video and text, aid in learning when combined in appropriate ways without contributing to cognitive overload. For example, the temporary contiguity principle demonstrates that combining narration and animation can aid in learning, whereas the personalization principle suggests that using first or second person conversational (versus formal style) in audio also improves learning (Clark & Mayer, 2011). Another area of future study might be to connect this research in e-learning to the virtuality culture features and the concepts of primary, secondary and tertiary presence.

### In Conclusion: I Am What I Am Not Yet

Martin (2010) has inspired the idea of learning by wandering in this dissertation, to facilitate new understandings about the very early stages of the virtuality culture shift. Just as the wandering scholars in the Middle Ages exchanged ideas as they traveled between universities and monastic centers, virtuality culture extends that opportunity to the masses and only needs to be actualized (Provenzo, 1986). This shift, with all its implications, is pointing a potential path we might choose on the way to a world where we become fully actualized human souls. Maxine Greene's (1995) statement can be applied to the current cultural evolution, in challenging us to consider the possibility that "there are always vacancies: there are always roads not taken, vistas not acknowledged. The search must be ongoing; the end can never be quite known" (p. 15). Virtuality culture is pointing the way to the nature of what we can begin to comprehend, in the same way Walter Ong (1982/2002) explored in his life work. As we have wandered through

this exploration of virtuality, perhaps we have caught a glimpse of ourselves reflected in it. True to Peirce's (1902) definition, however, it is virtuality culture itself that stands in the place of what we have seen. The same could be said for contemporary culture, which is yet to be fully actualized. The implications for future research around evolving virtuality culture are far reaching and encouraging as we consider Maxine Greene's (2001) call to "a sense of the not-yet, or the untraveled—the suggestion that there is something undiscovered, not yet heard or seen" (p. 46) This potentiality represented in cultural evolution is also reflected in Freire's (1998) sentiment of being a "cultural, historical, and unfinished being in the world" (p. 51). In some strange way, the oral tradition of Maxine Greene sharing her creed, "I am what I am not yet" fully represents the purest potential of us all. In the humility of beginning again, we are co-exploring the very nature of our existence through a cultural evolution, embodied in the beginnings of our virtuality culture.

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