



5-1-2010

Differential Use of Language by Adolescents Across Modes of Written Communication

Kris A. Vossler

Follow this and additional works at: <https://commons.und.edu/theses>

Recommended Citation

Vossler, Kris A., "Differential Use of Language by Adolescents Across Modes of Written Communication" (2010). *Theses and Dissertations*. 1032.

<https://commons.und.edu/theses/1032>

This Dissertation is brought to you for free and open access by the Theses, Dissertations, and Senior Projects at UND Scholarly Commons. It has been accepted for inclusion in Theses and Dissertations by an authorized administrator of UND Scholarly Commons. For more information, please contact zeinebyousif@library.und.edu.

DIFFERENTIAL USE OF LANGUAGE BY ADOLESCENTS ACROSS MODES OF WRITTEN
COMMUNICATION

by

Kris A. Vossler
Bachelor of Science, Moorhead State University, 1986
Master of Science, Moorhead State University, 1999

A Dissertation

Submitted to the Graduate Faculty

of the

University of North Dakota

in partial fulfillment of the requirements

for the degree of

Doctor of Philosophy

Grand Forks, North Dakota
May
2010

UMI Number: 3435016

All rights reserved

INFORMATION TO ALL USERS

The quality of this reproduction is dependent upon the quality of the copy submitted.

In the unlikely event that the author did not send a complete manuscript and there are missing pages, these will be noted. Also, if material had to be removed, a note will indicate the deletion.



UMI 3435016

Copyright 2010 by ProQuest LLC.

All rights reserved. This edition of the work is protected against unauthorized copying under Title 17, United States Code.



ProQuest LLC
789 East Eisenhower Parkway
P.O. Box 1346
Ann Arbor, MI 48106-1346

Copyright 2010 Kris A Vossler

This dissertation, submitted by Kris A Vossler in partial fulfillment of the requirements for the Degree of Doctor of Philosophy from the University of North Dakota, has been read by the Faculty Advisory Committee under whom the work has been done and is hereby approved.

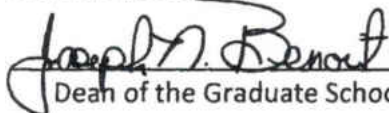

Chairperson







This dissertation meets the standards for appearance, conforms to the style and format requirements of the Graduate School of the University of North Dakota, and is hereby approved.


Dean of the Graduate School


Date

PERMISSION

Title: Differential Use of Language by Adolescents Across Modes of Written Communication

Department: Teaching and Learning

Degree: Doctor of Philosophy

In presenting this dissertation in partial fulfillment of the requirements for a graduate degree from the University of North Dakota, I agree that the library of this University shall make it freely available for inspection. I further agree that permission for extensive copying for scholarly purposes may be granted by the professor who supervised my dissertation work or, in her absence, by the chairperson of the department or the dean of the Graduate School. It is understood that any copying or publication or other use of this dissertation or part thereof for financial gain shall not be allowed without my written permission. It is also understood that due recognition shall be given to me and to the University of North Dakota in any scholarly use which may be made of any material in my dissertation.

Signature: Kris A. Vessler

Date: 3/23/10

TABLE OF CONTENTS

LIST OF FIGURES	x
ACKNOWLEDGEMENTS	xi
ABSTRACT	xii
I. INTRODUCTION.....	1
Purpose of the Study.....	4
Research Question	4
Significance of the Study.....	5
Delimitations of the Study	5
Definitions.....	6
Organization of the Dissertation.....	7
II. REVIEW OF LITERATURE.....	9
Adolescence	10
Biological	10
Anthropological.....	10
Sociological	11
Psychological.....	11

Summary	12
Typical Language Development	12
Form	13
Content	14
Use	18
Modes of Communication	22
E-mail	22
Instant Messaging	22
Text Messaging	23
Social Networking Sites	24
Consumers and Purpose	26
Benefits and Risk	31
Developmental Concerns	32
Privacy and Safety Concerns	34
Summary	37
III. METHODOLOGY AND PROCEDURES	38
Research Design	38
Negotiating Entry	39
Participants	41

Data Collection.....	43
Data Collection Tools	44
Method of Validation.....	47
Data Analysis.....	49
Open Coding.....	50
Axial Coding.....	53
Selective Coding.....	55
IV. PRESENTATION OF FINDINGS	56
Category I: Intra-Personal	57
Theme One: Teens Made Decisions about Their Choice of Mode Based on Their Personal Use of the Mode and the Degree of Value They Saw in Each.....	57
Theme Two: Teens Made Decisions about Their Choice of Mode Based on the Communicative Function or Purpose.....	63
Category II: Inter-Personal	66
Theme One: Teens Had Rules to Regulate the Semantics and Pragmatics of Language When They Used Technology for Communication.....	67
Theme Two: Teens Acknowledged the Differences Between Face-to-Face Communications and Those That Were Only Digital.....	68
Category III: Extra-Personal	71

Theme One: Teens' Use of Technology was Regulated by Outside Entities (Including Parents)	71
Theme Two: Teens Chose Specific Technologies to Use Based on the Perceived Degree of Safety	74
Theme Three: Teens Controlled the Privacy of Their Communications by Controlling the Content	75
Theme Four: Teens Controlled Access to Their Communications in Order to Protect Their Privacy	76
Assertions.....	78
Central Phenomenon	79
Causal Conditions.....	79
Context.....	80
Intervening Conditions.....	81
Strategies	83
Consequences	85
An Emerging Theory.....	87
 V. DISCUSSION, CONCLUSIONS, RECOMMENDATIONS IMPLICATIONS, AND REFLECTIONS	 90
Summary of Findings in Relation to Current Literature	90
Category I: Inter-Personal.....	91

Texting.....	92
Telephone Conversations	92
Social Networking	93
Instant Messaging and E-mail.....	93
Category II: Inter-Personal	94
Category III: Extra-Personal	96
Outside Controls	96
Safety/Privacy	98
Conclusions	100
Recommendations	103
Need for Future Research.....	103
Clinical Applications	105
Implications.....	106
Reflections.....	107
APPENDICES.....	110
Appendix A – Consent Forms.....	110
Appendix B- Initial Interview Questions	116
REFERENCES	118

LIST OF FIGURES

Figure	Page
Screen Shot of FaceBook Wall and Status Section	26
Open Coding Concept Map	52
Axial Coding Paradigm	54
Screen Shot of FaceBook Information	99

ACKNOWLEDGEMENTS

I would like to thank the many individuals who helped to make this dream a reality. First, I would like to thank my doctoral advisor, Dr. Barbara Combs, for being the steady hand that guided the ship. Without her calm manner and sense of deliberateness, I would not have it to the end of this journey.

I also would like to express my thanks to all my colleagues at Minnesota State University Moorhead, your support and prayers helped me more than you will ever know. A special thanks to Marie Swanson, thank you for listening and listening and listening to my ideas, concerns, and frustrations!

I cannot express enough gratitude to the teens who agreed to spend part of their summer answering my endless list of questions. You guys are the best.

I, of course, also need to thank my family. Kip, you are my rock; words will never express my gratitude to you for all your love and support. Jake and Kelsey, you are the best kids ever, thank you for making me aware of the topic and the need for this study. Heather, thank you for listening to all the things only a sister can. Dad, thanks for all your offers of help. Mom, thank you for all your support and guidance (not to mention all the read-throughs) as I journeyed down this road. Finally, I need to give a heartfelt thank you to Idella for being the best mother-in-law ever. Thank you for all the gentle “prodding” that was instrumental in seeing this paper through to fruition.

ABSTRACT

The purpose of this study was to investigate how adolescents in a small urban setting in the upper Midwest use alternative modes of written communication (i.e., text messaging, e-mail, instant messaging, and social networking) for discourse purposes in order to identify ways in which these modes could be utilized by non-speaking individuals. This study explored the factors related to choice of mode, including identity of the communication partner, number of communication partners, purpose of the communication, and personal preferences of the individual.

This qualitative study followed grounded theory methodology and used interviews as the primary means of data collection. The data was transcribed and analyzed through open coding to answer the research question, "How and why do the form, function, and purpose of teenagers' communication vary across different modes of written communication?" The participants in the study were 13 individuals between the ages of 14 and 18.

Data analysis revealed three categories. The first category was related to intra-personal considerations such as the personal preferences of the individual. The second category, inter-personal, explained the understanding participants possessed about semantic and pragmatic aspects of communication. The final category, extra-personal, included factors outside the communication itself such as the attempts of others to regulate use of technology or concerns about privacy and safety.

Based on those categories, four assertions emerged to answer the research question. Those assertions were: adolescents are skilled communicators who use different modes of communication to communicate different functions with different partners, adolescents are skilled communicators who are aware of the nuances of communication in a written genre, adolescents are aware of the potential dangers inherent in using these modes and they know how to protect themselves from said dangers, and adolescents may resist the attempts of outsiders to control their communications.

Finally, the codes were further refined during axial coding in order to identify the central phenomenon, causal conditions, context, intervening conditions, strategies, and context. Axial coding analysis led the researcher to the emerging theory, adolescents are active communicators who purposefully choose their modes of communication and control how, when, and with whom they use each mode.

CHAPTER I

INTRODUCTION

Imagine entering a special needs classroom at an area high school. In that room are two teens who do not use verbal speech as their primary means of communication. These students instead have communication devices with voice output to help them talk to their peers and their teachers. As the teacher approaches the table where the young adults are working, the teacher's aide prompts the teens to "say hi to Mrs. X, use your device, say hello." The first student activates the appropriate location on her device and "speaks" "Hi Mrs. X, you sure are pretty today!" The second student completes the same task and his device says, "Hi Mrs. X, I love you." By some standards, this was a successful, albeit prompted, communicative interaction. The problem is that the content of those messages was not selected by a teenager! Those are not statements a typically developing adolescent would make to his or her teacher, even if they are polite things to say or, more likely, represent what the teacher would like to hear.

This scenario is not imaginary; I am a speech-language pathologist working on the faculty at a state university in Northwestern Minnesota. In that capacity, I provide consultation and evaluation services to individuals across the state of Minnesota in the area of assistive technology and augmentative and alternative communication (AAC) and many of my clients are adolescents. The purpose of AAC is to provide an alternate system of expression to individuals who are either nonverbal or for whom verbal

communication is not their primary method of communication. This alternate system should cover both verbal and written language.

As was suggested above, one of the challenges when setting up AAC systems for clients lies in knowing what should be programmed into the device in terms of vocabulary and knowing when and where the technology should be introduced (e.g., in the classroom, lunchroom, or gym during a basketball game). The best device in the world will be unused if it contains nothing the client is interested in talking about or is not available when they have the opportunity to talk. Many of the clients I see have multiple impairments and are also severely delayed, meaning that they have a combination of cognitive and physical disabilities. One of the guiding principles followed by many in the field of AAC is the philosophy that it is important to create communicative opportunities, even when the client may not cognitively understand all that transpires. Learning happens from repeated exposure and the benefit of a successful interaction with peers cannot be emphasized enough.

Compounding the difficulty in setting up an effective AAC system is the issue of understanding the intricacies of the adolescent world. During the tumultuous years of adolescence, children undergo growth and become more mature physically, emotionally, and socially. One of the ways in which emotional and social growth is demonstrated is via communication. Adolescent communication is distinctly different from the language of either young children or adults. Changes commonly associated with this time of life include a growing sense of independence as the child transitions to adulthood. This move toward adulthood necessitates a separation from his or her

parents, with the primary role models becoming peers. The nature of the interaction with peers also changes as drivers' licenses are obtained, allowing for more independence in getting where they want or need to go. A visit to any shopping center, athletic event, or school, would reveal teenagers using technology such as iPods or cell phones. Reductions in the price of these devices, increases in services available, and advances in the technology itself has changed the nature of the interactions between adolescents and those with whom they communicate. This change is both structural and functional, that is, how they communicate (i.e., structure) and for what purposes (i.e., function).

Implementation of AAC is made more complex with the use of alternative modes of written communication such as text messaging, e-mail, instant messaging, and internet social networking sites for discourse purposes. My professional goal is to provide my clients with a communication experience that is as close to that of their typically developing peers as possible. To make these experiences meaningful and beneficial, I needed to have a better working knowledge not only of the systems used by said peers, the logic behind their choice of system, and what the content eventually looked like. The study described here has helped me to accomplish several of these goals. As will be revealed in the remaining chapters, I learned a good deal about the factors my subjects considered when they made choices related to the mode and form they chose when they wanted to communicate, but little about the specific vocabulary they used within those modes.

Purpose of the Study

The purpose of this study was to investigate how adolescents in a small urban setting in the upper Midwest use alternative modes of written communication (i.e., text messaging, e-mail, instant messaging, and participation in internet social networking sites) for discourse purposes. To meet this purpose, I conducted a qualitative research study using a grounded theory design (Strauss & Corbin, 1998) to discern how adolescents decide what mode of communication to use in any given situation and with any given audience. This information is important to enable speech-language pathologists to increase meaningful interaction and participation for their adolescent clients who are nonverbal.

Research Question

I wanted to learn about the tools adolescents use today for written communication, specifically, text messaging, e-mail, instant messaging, and internet social networking sites such as FaceBook and MySpace. A desire to know more about this use lead me to the research question *“How and why do the form, function, and purpose of teenagers’ communication vary across different modes of written communication?”*

Because adolescent communication differs from adult communication in terms of the function of communication and the vocabulary used, I began this study with the intention of learning about the specific vocabulary used by teens so that appropriate content could be placed on the devices of my clients. The results of the data analysis, which will be reported in a later chapter, did not reveal all of the expected results. I did

not discover a separate vocabulary used by the teens in these new communicative environments; however, I learned a great deal about the how and why of their use.

Significance of the Study

The field of speech-language pathology has an important role to play in the introduction of AAC for non-speaking individuals. This task is especially difficult when working with adolescents due to the ever-changing nature of their vocabulary and the assumed secretness of said vocabulary. The task has been made even more complex with the introduction of alternate modes of communication such as cell phones and the internet. In order to provide as normal an experience as possible for my adolescent clients who are nonverbal, I needed to increase my own understanding of the current ways and reasons for communication in the typically developing adolescent population. The value of this information may be applied beyond its implementation with adolescents who are nonverbal. It may also be of benefit to speech-language pathologists as they assess and provide treatment to adolescents who have language disorders.

Delimitations of the Study

The scope of this study was limited to white adolescents (ages 14-18) living in four small communities in the upper Midwest. Generalization of findings to adolescents living in larger communities or in other parts of the country may not be possible.

Definitions

Adolescence comes from the Latin *adolescere* – to grow. This term refers to the period of human development between childhood and adulthood, the years of 10-19.

Speech refers to the verbal means humans use for communication.

Language refers to the socially agreed upon code of meaning that transforms speech sounds into units with meaning.

Communication is the broadest of the three terms. Communication often uses speech and language to convey information, but it can also be comprised of non-speech cues such as the use of tone and/or the use of nonverbal components such as body language or facial expressions to convey meaning.

Communicative function (or intent) refers to the purpose of the communication (e.g., to transfer information between two people or to achieve social closeness).

Communication partner refers to the person or persons with whom the adolescent communicates.

Mode refers to how the communication takes place; it may be a piece of hardware such as a cell phone or a strategy for communicating such as text messaging.

Form refers to the communication opportunities within each mode, such as the actual text created via text messaging, or writing on someone's FaceBook Wall.

Content refers to message itself. It will include any rate enhancement the communicator uses (e.g., an acronym), or any linguistic changes (e.g., as a change in vocabulary based on the target audience).

Social Networking Sites are online communities of people either who know each other or who share interests and/or activities.

Text Messaging or "texting" involves the sending of written text through the cell phone.

Instant Messaging can be described as instant e-mail.

E-mail is electronic mail.

Organization of the Dissertation

The study reported here is organized around five chapters. Chapter I includes an overview of adolescent communication with emphasis on the ways in which teen communication differs from the adult model. The chapter also contains information related to how the realm of adolescent communication is entwined with the researcher's area of specialty, speech-language pathology, specifically the area of AAC. This information establishes the need for this qualitative study examining the use of nontraditional modes of written communication by adolescents. The purpose, significance, and delimitations of the study along with the research question are also included in Chapter I.

Chapter II provides a comprehensive review of the literature as it pertains to theories of adolescence, the characteristics of adolescent language, and to the targeted modes of written communication. Chapter III describes the methodology used in the study including the rationale behind choosing a qualitative grounded theory design. Procedures for collection and analysis of data and generation of a theory grounded in that data are also presented. The chapter concludes with a brief discussion of the codes, categories, themes, and assertions that emerged during data analysis.

Chapter IV presents an in-depth discussion of the results from the study following a grounded theory design. Each finding is presented and explained through the words of the study participants.

Chapter V integrates the data from the study with the information gleaned from the literature review. This chapter also discusses implications from and applications for this study as well as recommendations for future research.

CHAPTER II

REVIEW OF LITERATURE

Communication is the “process by which information is exchanged between individuals through a common system of symbols, signs, or behaviors” (communication, 2010). The most common mode of communication is oral speech, often supplemented by nonverbal modes such as facial expressions and body language. When communication is not verbal, it often takes a written format. Advances in technology in terms of the number, type, and general availability have exponentially increased the options available within the realm of written language. A significant portion of today’s adolescents have cell phones for text messaging as well as access to the internet, either via a computer or their cell phones; thereby making e-mail, instant messaging, and social networking sites (SNS) available.

The purpose of this study was to examine how adolescents use the alternative modes of written communication listed above for discourse purposes. This chapter provides a review of the relevant literature related to the theories of adolescence as a distinct stage of human development, to language development as it pertains to adolescents, and to the modes of communication (including a discussion of who uses each mode, for what purpose, and the potential benefits and risks associated with their use).

Adolescence

The intent of this first section is to establish the existence of adolescence as a distinct stage of human development. It is not the intent to provide the reader with an exhaustive definition of adolescence from all scientific perspectives, but rather to provide an historical overview of this stage of development. Adolescence will be defined from a biological, anthropological, sociological, and psychological perspective.

Biological

This developmental perspective argues that the behaviors exhibited by adolescents result from biological changes within the human organism. The primary adherent to the idea of a biological adolescence was G. Stanley Hall (1904). Hall argued that adolescence was a time of new birth, a time when the human species moved from a primitive being (i.e., childhood) to a civilized creature (i.e., adulthood). His theory was that adolescence was a time of "*sturm und drang*" (storm and stress) characterized by excessive variances in the emotions and behaviors of those between the ages of 12 or 13 and 22 to 25. Hall's premise of adolescence as a time of turbulence has not been supported by research. Miller (1989), Glover (1999), and Arnett (1996) all reported that, except for a small number of individuals, the years between the ages of 10-19 were not characterized by conflict and strife.

Anthropological

Anthropologists view adolescence from the perspective of culture rather than biology. Mead (1950) and Benedict (1954) asserted that the time of adolescence represented the individual's gradual transition from childhood to adulthood. According

to this perspective, adolescence was regulated by culture; therefore, “adolescent behavior” was, quite simply, contingent upon what the culture at large defined as expected. Ergo, if adolescence was a difficult time, it was because that was what was expected by the larger culture.

Sociological

The sociological perspective views this time in terms of the social development it facilitates. Davis (1944) described adolescence as the time when social anxiety (e.g., fear of public speaking, stress about interactions with the opposite (or same) sex, or being judged by their peers), becomes apparent. Individual behavior is controlled because of fear of punishment. Havighurst (1953) defined adolescence as the time during which the tasks of gender role development and the appearance of socially appropriate behavior occurred.

Psychological

The psychological perspective states that adolescence is a time of transition between childhood and adulthood during which many psychological conflicts are resolved such as *identity and sexuality* (Muuss, 1975). Sigmund and Anna Freud, the authors of the psychoanalytic theory, focused on psychosexual development during adolescence, emphasizing the role of biology and downplaying the impact of the environment. Erickson, a stage theorist, defined stages of identity development adolescents must achieve as they move towards adulthood. Unlike Freud, he recognized the interplay between the environment and the person. Bandura explained adolescent psychological development in terms of the conflict between the teen and the

environment. Finally, for Piaget, the critical component was cognitive development (Larson & McKinley, 2007)

Summary

Possibly the best definition of adolescence incorporates aspects from each of the aforementioned disciplines. Certainly, adolescence is a time during which individuals undergo significant biological changes as they transition from childhood to adulthood. It is also evident that, as anthropologists argue, the adolescent experience is not identical cross-culturally; the degree to which teenagers are considered adults and expected to act as such is dependent on the cultural group in which they live. Finally, both sociologists and psychologists stress the role of identity development, including the formation of gender roles, a necessary component of one's evolution into adulthood.

The teens in the current study were all between the ages of 14-18, placing them in the heart of their adolescent years. They were all raised within a 50-mile radius of each other, making them a part of the same cultural environment. There was also a nearly even balance between males and females in the study, all working towards figuring out who they were, what they believed, and who they were looking for as a partner.

Typical Language Development

Language can be broken down into three separate, but not always equal, components, form, content, and use. The form of language includes its phonology, syntax, and morphology. Content refers to the semantics, or meaning, of a language. Language use is represented by the aspect of pragmatics. Language development in the

areas of content and use is more significant during adolescence so, while each of these components will be discussed separately, more attention will be given to semantics and pragmatics.

Form

Phonology refers to the set of rules that govern what sounds (phonemes) are used in a language and how those phonemes may be combined. For example, in English the ng sound (as in ring) is never used in the initial position of a word (Owens, 2008). This component of language is arguably the earliest to be mastered, as most children are skilled manipulators of the sound system and the rules that govern it by age eight.

Syntax refers to the rules that govern the *grammar* of a language; thereby determining word order, sentence construction, and the relationships between words and word classes (Owens, 2008). Children make significant progress in this area prior to adolescence but, unlike phonology, syntactic development continues through the adolescent years and into young adulthood. Exposure to printed text during the school years exposes individuals to inter and intra sentential constructions that they may not otherwise hear in connected speech (Nippold, 2007). Not only does this exposure afford children the opportunity to increase the complexity of their spoken language, it also facilitates the lengthening of the utterances they produce as well.

Morphology is the study and description of the patterns of word formation in a language (morphology, 2009). All words are comprised of one or more morphemes, the smallest units of meaning in a language. There are two main types of morphemes, free and bound. Free morphemes are units that can stand alone such as "dog" or "apple."

Bound morphemes are units that have meaning but cannot be free standing. The two types of bound morphemes are inflectional and derivational. Inflectional morphemes are word markers such as the plural “s” or the past-tense “ed.” Derivational bound morphemes include the prefixes and/or suffixes that are added to free morphemes to change the meaning of the word. These include “un,” “non,” “ness,” and “ly.”

Like syntax, morphological development continues throughout adolescence. While children under the age of 13 produce and comprehend a diverse repertoire of free and bound morphemes, the advanced literacy opportunities available during high school, paired with the direct instruction teens receive, serve to increase the variety and complexity of the morphemes used in their speech.

Content

The content, or semantics, of a language governs the meaning of words and/or word combinations (Owens, 2008). Semantics is influenced by word knowledge (i.e., the person’s mental dictionary or lexicon) and world knowledge. World knowledge is influenced by the life and educational experiences of the person.

Children following a typical path of development increase the size of their lexicon from one word to about 20,000 different words by the age of 10 (Nippold, 2007). The increases after that point (to approximately 30,000 words by the age of 15 and 50,000 words by 25) represent more subtle changes in the lexicon as well as the addition of new words. Later language development is heavily influenced by the child’s exposure to literate text and their increased ability to comprehend the nuances of language. For example, a 15-year old is generally able to understand that some words

have both a physical and a psychological meaning (e.g., bright, sharp, and dull) (Nippold, 2007; Nippold, Hegel, Solhberg, & Schwartz, 1999; Owens, 2008). Adolescents are also more able to use the context associated with a particular word to determine the meaning. This skill is developed, at least in part, by the increase in the amount and varying types of written material to which they are exposed (i.e., narrative and expository text). The physiological development associated with the adolescent years also increases their ability to use different strategies to recall words from their memory.

Semantic development goes beyond the ability to comprehend single words. During the adolescent years, individuals achieve the cognitive maturity and reasoning skills to understand analogies, syllogisms, and non-literal language, including idioms and slang, and ambiguity and sarcasm (Larson & McKinley, 2007).

Analogies

Inductive (i.e., analogical) reasoning is demonstrated by the ability to note how objects or events are similar and/or different and then use that information to solve problems or to learn about the world (Nippold, 2007). Although analogical reasoning begins in infancy, it continues throughout the life span. The ability to complete verbal analogies (e.g., A is to B as C is to D) increases during the adolescent years, but complex analogies remain difficult into adulthood (Larson & McKinley, 2003; Nippold, 2007). Teens generally increase both their speed and accuracy in solving analogies because they are cognitively able to use systematic strategies (Nippold, 2007). The ability to solve analogies is related to success in school, the degree of abstractness of the analogy, and to the complexity of the vocabulary. In other words, the development of analogical

abilities is related to cognitive development as well as to semantic language development (Nippold, 2007).

Syllogisms

A syllogism is “a formal argument that contains two premises and a conclusion that follows logically from those premises” (Nippold, 2007, p. 135). There are four primary types of syllogisms. The first type, conditional syllogisms, contains if-then statements (e.g., If A then B), only-if statements (e.g., A only if B), or biconditional statements (e.g., A if and only if B). The second type is categorical syllogisms. These represent arguments that begin with all, every, or any (e.g., All A’s are B’s). Disjunctive syllogisms, the third common type, use the word “or” and may be either exclusive (e.g., soup or salad but not both) or inclusive (e.g., soup and salad or both). The fourth type, conjunctive syllogisms, contains statements that two conditions happen at the same time (e.g., A and B, therefore C). Syllogisms require deductive reasoning, which begins to develop during early childhood. They are used academically, vocationally, and personally to both make valid arguments and refute invalid ones. During adolescence and early adulthood, growth in speed and accuracy in solving syllogisms is demonstrated; however, even adults have difficulty with some of these arguments (Nippold, 2007).

Non-Literal Language

Non-literal language is comprised of utterances in which the intended message of the speaker may not be consistent with the literal words used (Owens, 2008). This

category includes idioms, slang, ambiguity, and sarcasm, all of which develop throughout the adolescent years and into adulthood.

Idioms and slang. Idioms are expressions that can be translated literally and figuratively. For example, the expression “skating on thin ice” conveys both a literal meaning (i.e., that one who does this risks falling through the ice into cold water), and a figurative one (i.e., that a person is engaging in risky behavior that may lead to their downfall). Slang terms, another form of non-literal language are more informal than idioms and when used, are generally specific to the subculture using them (Nippold, 2007). An example of a slang term might be the use of the term “my bad” to express the idea “my fault.” The use and understanding of idioms and slang begins in early childhood and continues throughout adolescence into adulthood (Nippold, 2007; Owens, 2008).

Ambiguity and sarcasm. Ambiguity and sarcasm are aspects of language that require the user and their communication partner to use metalinguistic awareness (i.e., to reflect or think about language). Ambiguity occurs when the meaning of the message is not clear, often due to word choice. This requires the listener to think about what they heard and search for an alternate meaning that might make the intended message more clear (Nippold, 2007). Ambiguity is frequently found in sentences (e.g., “It’s too hot to eat”), and in humor (e.g., “Q. Why did the hungry man go into the lamp store? A. Because he wanted a light snack”) (p. 234). The ability to use and to understand ambiguity, especially as it relates to humor, is a hallmark characteristic of adolescent language development (Nippold, 2007; Owens, 2008). Sarcasm also relies on

metalinguistic skills as it requires the listener to note the difference between what was said and what was meant (e.g. speaker says “great” when they notice they have a flat tire). Sarcasm can be conveyed through linguistic means (i.e., lexical, syntactic, and pragmatic) or nonlinguistic (i.e. intonational, facial, and gestural) means (Nippold, 2007). Consistent with previously discussed components of semantics, while school-age children are able to use sarcasm, it is not mastered until the end of adolescence or early adulthood.

Use

The concept of how language is used is referred to as pragmatics. This component of language includes communication intentions, conversational rules, and types of discourse (Owens, 2008). Communicative intentions relate to what the speaker is attempting to accomplish. Conversational rules govern the format and style of communicative interactions and types of discourse reference the nature of the interaction.

Communicative Intentions

Persuasion. Persuasion is “the use of argumentation to convince another person to perform an act or to accept a point of view desired by the persuader” (Nippold, 2007, p. 305). In order to use persuasion effectively, the speaker must adjust their style of communication to make it appropriate the audience and situation. Children’s ability to engage in persuasion increases after third grade. When attempting to persuade, older students (e.g., those in seventh grade and above,) use politeness and bargaining more than younger children. They are also more adept at taking the perspective of the

listener and then modifying their strategies based on that person's age, authority, and familiarity in relation to themselves. Older teens are also better able to refuse the persuasive strategies of others (Nippold, 2007; Owens, 2008).

Negotiation. Negotiation "involves communication to resolve conflicts and to achieve goals in mutually acceptable ways" (Nippold, 2007, p. 305). This language skill continues to develop into adulthood. Even the oldest adolescents (17-19) have difficulties with negotiation. Older adolescents are more aware of their communication partner's wants and feelings. They tend to show concerns for the long-term consequences of conflict, and are the most interested in resolving conflict through compromise and mutual agreement (Nippold 2007).

Conversational Rules

Conversational rules generally refer to conventions such as matching the form and/or vocabulary used in a communication with the intended audience. The primary element for consideration in this category is the use of register. The term register refers to the variations we make in our speech based on the situation or environment in which the communication takes place (Owens, 2008). Register is what allows people to communicate with different audiences. This pragmatic element also improves during adolescence (Owens, 2008). Additionally, adolescents become more adept at monitoring the comprehension of their communication partner and providing clarification when needed.

Types of Discourse

The types of discourse speakers use include conversations (i.e., two people talking to each other), narratives (i.e., telling a story), expositives (i.e., procedural speech such as how to make a sandwich), and written communication.

Conversations. Conversations are dialogues during which speakers exchange ideas, make comments about a topic relevant to both parties, and ask and answer questions (Nippold, Mansfield, & Billow, 2007). The term is loosely used to refer to any verbal interaction involving at least two participants. This type of communicative exchange is generally recognized as placing the fewest demands on the speaker, at least in terms of monitoring the comprehension of their communication partner.

Narratives. Narratives are the link between oral and written language and include storytelling, the retelling of an event and/or the foretelling of a future event (Owens, 2008; Westby 1984). Narratives are extended monologues, as opposed to conversations, which are interactive dialogues. Because, by definition, one speaker has the dominant role in a narrative, they are viewed as placing more responsibility on the speaker in terms of assuring that the listener comprehends what is said.

Oral Expositives. Expositives are instructional monologues. They rely on one speaker who bears the responsibility for clear communication. However the nature of this type of interaction (i.e., that it is used for the planning and transmission fact based knowledge), makes it more complex linguistically than the telling of a narrative (McFadden, 1991).

Written Communication. Written communication uses the same language skills as verbal speech; however, a shift to this mode changes the dynamics of the interaction. Two people are needed for a conversation; every speaker needs a listener. This same maxim holds true in written form, every writer needs a reader. The primary difference between oral and written language are the components of context and immediacy. In oral communication, the partner is either present face-to-face or connected by voice via a telephone and the resulting communication is a shared turn-taking dialogue during which speaker and listener share common information (Nippold, 2007; Owens, 2008).

In written communication, the audience may be known or unknown. In either case, the immediate feedback received by a speaker in conversations, narratives, and/or expositorys is not present and the writer must anticipate the degree of explicitness needed in the message (Nelson, 1988). In terms of complexity and responsibility placed on the speaker (i.e., the writer), written communication is the most difficult.

Since all of the modes examined in this study were of a written format, these teens were, by definition, using the most challenging and advanced form of communication. A compounding factor in the overall complexity of their communications was that the mode used to generate the text was not traditional writing, but rather involved the integration of technology. The next section of this review will discuss the modes of communication, who uses each and for what purpose, and the risks and benefits of each.

Modes of Communication

This section summarizes the existing literature related to the specific modes of communication used by the teens in this study as well as the forms the communication took or could have taken within those modes. One of the primary sources in this section comes from research conducted by the Pew Internet and American Life Project. This non-partisan, non-profit organization conducts research on a multitude of topics, including teen use of e-mail, instant messaging, text messaging, and social networking sites (SNSs). Their data, reported by Lenhart, Madden, Macgill, and Smith (2007), Kennedy, Smith, Wells, and Wellman (2008), and Raine (2009) represent the most comprehensive objective data available at this time.

E-Mail

Electronic mail (e-mail) is not a preferred form of communication for adolescents. In the 2007 study by Lenhart et al., only 14 percent of teens reported sending daily e-mails to their friends, making it “the least popular form of daily social communication” (p. 20). The only segment of the sample who used e-mail extensively was young girls (12-14). Instant messaging, texting, and social networking sites (SNS) are more popular because they are a much faster way to communicate content. Additionally, unless a phone with e-mail capabilities is present, using e-mail requires the use of a computer, something that today’s teens find limiting.

Instant Messaging

America On-Line and Microsoft (MSN) are the two largest providers of instant messaging (IM) services. Users log on to an IM provider and then have conversations in

real-time with friends. This mode of communication requires all parties to be online to have a conversation, as opposed to text messaging, during which the message is sent to the in-box of the communication partner where it can be retrieved later.

According to Pew Internet and American Life Project research (Pew research) results, the use of instant messaging as a stand-alone product has dropped since 2004; only 28 percent of responders in the study (935) indicated they used IM on a daily basis (Lenhart, et al, 2007). However, 42 percent of teens who used social networking sites used the instant messaging feature embedded within the site, which the authors suggested may be due to the speed and convenience of the new interface.

Text Messaging

When texting, the sending of text-based messages through a cell phone, was introduced, most consumers had phones with keyboards only and texting was a slow and laborious process. Phone manufacturers soon included software on phones to facilitate rate enhancement. These software programs (i.e., T-9, Word) predict the word being typed based on the first letter(s) and probability. A 2008 study of 2,089 US teenagers conducted by the International Wireless Telecommunications Association reported that 42 percent of teens said they could text "blind," evidence that they used these programs effectively (Harris Interactive/CTIA, 2008). Eventually, cell phones with QWERTY keyboards (so named for the first six keys on the top row), flooded the market, making texting less laborious. A 2009 study by the Nielsen Company reported that in the last quarter of 2008, teens received an average of 2,899 text messages per month,

compared to only 191 phone calls. This data suggests that texting was a preferred mode of communication for this population.

Social Networking Sites

Online communication is exceptionally powerful because it provides the user opportunity to interact with, affect, or be influenced by people they do not know (Williams and Merten, 2008). In fact, Williams (2007) stated that the internet in general and SNSs specifically represent a strong link between popular culture and young people. Not only do teens use SNSs to connect with their peers, they also use them to learn about and influence current trends. Teens place specific content on their SNS pages for the same reason teens 20 years ago wore t-shirts with pictures and pithy sayings on them. Because the media is highly fluid (i.e., able to change quickly,) shifts in what is popular happen more quickly and are now based on what people chose to include on their sites. In a way, the individual has more control over the media and pop culture now than in the past. In that respect, as Richardson (2007) argued, SNSs encourage globalization and diversity.

Most SNSs share common features (Gross & Acquisti, 2005; boyd (sic) & Ellison, 2008). After a user chooses the SNS they want to join, they create a profile, allow others to join their profile, meet "friends," find jobs, and possibly receive recommendations (e.g., what movie to watch, what book to read). The two most popular SNSs today are MySpace and FaceBook; however, there are some significant differences between the two. MySpace was designed to be a true SNS. Once a person sets up their site, they can look for others who have similar interests, thereby extending

their social network. FaceBook, on the other hand, was never designed to serve that purpose. It was started as a way to connect students at one college to each other. It then expanded to all colleges and universities (an .edu e-mail address was needed to join), then to high schools and finally to the public in the form of networks (Ellison, Steinfield, & Lampe, 2007). Instead of being a venue to find others with similar interests, FaceBook was designed to help members connect or reconnect with those already, at least tangentially, in their social circle. For example, people might re-connect with high school classmates or distant relatives, or connect for the first time with someone in their biology class (Ellison et al., 2007). Because of this slightly different purpose, FaceBook is often called an offline-to-online tool, because offline friends become online friends. FaceBook is also considered a friend networking site (Lampe, Ellison, & Steinfield, 2006), or a friend network site, because creating new contacts is not the primary purpose (boyd & Ellison, 2008). Also because of the slightly modified purpose, privacy and safety concerns on these sites are not identical. This aspect will be discussed in a later section.

Since all of the participants in this study used the SNS FaceBook, it is the one which will be described in detail in this section. FaceBook, which reportedly has somewhere near 77 million subscribers (Bulik, 2009), is not the largest SNS, but it is the fastest growing. FaceBook offers its subscribers a variety of interactional tools. Initially, users create their profile, which can contain as much or as little information as the user chooses (Breeding, 2007). Once this is done, communication occurs using one of three methods. The first way is when a user updates their status or changes information on

their profile page (e.g., tells friends what they are doing or how they are feeling). When a change is made to a status or profile page, friends receive a notification, usually via an e-mail or a text message. The second way of communicating is through the wall feature, an interface that allows you to “talk” to someone else (e.g., comment on his or her status or picture). Status and profile updates are public forums. The third way to communicate only happens if a private conversation is desired by one of the communication partners. In this case, users access the instant messaging feature that is now a part of FaceBook. Figure 1 illustrates a FaceBook wall with an example given of a status update as well as a posting on the Wall.

Figure 1 Screen shot of FaceBook Wall and status section.



Consumers and Purpose

In order to understand the use of technology for communication, it is necessary to understand the teens who use it and the purposes for which they use it. There is

extensive variation between communicators in terms of both what they use and how (and why) they use it. The most recent Pew research (Lenhart et al., 2007) found that the most popular form of communication between teens was still verbal conversation. Youth who owned cell phones reported that their first line of communication was to call their friends (55 percent of responders). Lenhart et al. also reported that even among the most active communicators, face-to-face conversations were still viewed as very important.

In 2000, Pew research reported that 70 percent of teens used the internet. By 2006, this number had increased to 94 percent and, of that group, 55 percent had an online profile (on an SNS). Interestingly, while only 38 percent of those aged 12-14 had a profile, 77 percent of those aged 15-17 were active social networkers (Lenhart et al., 2007).

Pew research (Lenhart et al., 2007) categorized the teens in their study into three main categories, multi-channel communicators, content creators, and social network users. The first group, multi-channel communicators were those who used all available forms of digital communication (e.g., SNSs, text messaging, IMing, sending e-mails, calling on cell and landline telephones and face-to-face communication). This group represented roughly 25 percent of the 935 teens in the study, tended to be older (15-17) and was primarily female. These:

highly wired and connected teens were notable for the intensity with which they use connective technologies; layering new technologies over old, while sustaining an overall higher likelihood of daily use of all technologies.

Multichannel teens are most likely to use their cell phones to reach out to friends and then turn to internet tools such as instant messaging and social networking sites. They are even more likely to use e-mail than the general population of teens, though for them, as for the rest of online teens, e-mail is the least popular communication choice (p. 19).

The second group, content-creators were those teens who created and shared their own media creations such as songs, videos or artwork. These adolescents were more likely to use text-based modes of communication than were the teens who were not content-creators. Because these teens appeared to prefer nonverbal communication, they were the group most likely to use e-mail (79 percent said they have used e-mail as compared to 56 percent of non-content-creators) and instant messaging (77 percent as compared to 53 percent) (Lenhart et al., 2007).

The third group, social network users, was defined by Pew research as the "super-communicators" (Lenhart et al., 2007, p. 22) because they used all forms of communication available to them from within the SNS to stay in touch with their friends. However, it should be cautioned that the statistics reported by Pew research are from 2007 and although they are the most recent reliable statistics available, they may not represent actual usage in 2010. Additionally, the statistics reported in the study may appear misleading, since membership in one category did not preclude a teen from membership in another. In fact, 36 percent of content-creators, 13 percent non-content-creators and 52 percent of social networking teens were also multi-channel communicators.

Significant differences have also been reported in the use of social networking sites by males and females. In the aforementioned Pew research study, girls between the ages of 15 and 17 were found to be more active users (70 percent had SNS sites) than were boys (57 percent used FaceBook or MySpace) in the same age group. Girls not only used the sites with more frequency, but they also made use of more available forms within the modes to accomplish a broader purpose. Girls posted more pictures (Lenhart, et al., 2007) with the intent of using the pictures as conversation starters; boys posted more videos to share experiences. Fogel and Nehmad (2009) also found that women were more likely to use writing on someone's wall (see Figure 1) as a communication mode than were men. The authors speculated that this might be because women's purpose of communication was to share information and feelings. They further stated that men tended to have more "friends" (a term to be defined in a later section) than women, but did not maintain as close a relationship with those people. Pew research data (Lenhart, et al., 2007) added support to this idea with their finding that more men than women viewed making friends as a primary purpose of social networking.

Raacke and Bonds-Raacke (2007) argued that women used SNSs to build or maintain relationships while men used them for sexual exploits. This was consistent with the Pew research data (Lenhart et al., 2007) which reported that 17 percent of those using SNSs did so to flirt, and that the majority of the 17 percent were males. Subrahmanyam, Smahel, and Greenfield (2006) noted that in an earlier incarnation of

internet social networking, chat rooms, males were also more likely to use explicit sexual references in the comments they posted than were women.

Other purposes of SNSs that did not vary between men and women were making plans with friends, managing their friendships, and staying in touch with friends. Interestingly, in terms of contact with friends, both men and women used SNSs to connect with friends they routinely saw as well as those they seldom saw (Lenhart et al., 2007). Eberhardt (2007) also theorized that SNSs are used to foster a sense of support and community, to assist people in transitions to new environments (e.g., from high school to college), or even, potentially, to provide an easier (i.e., less stressful,) communicative environment. In a related note, while Gross (2004) stated that communication was the most important use of the internet for adolescents, Pew research (Lenhart et al.) found that for the teens in their study, other activities such as gaming, shopping, or information gathering, were more popular than those designed with communicative intents.

One significant change to interpersonal relationships resulting from these new forms of communication is the change in what it means to be someone's friend. A personal "friend" is not the same as an online "friend"; in fact, some adolescents have friends online that, even though they are not strangers, are also not people the teens speak to in person (Paul, personal communication, May 2007). In some cases, these online only friendships transfer to other modes (Taylor, 2008). As has been previously stated, the purpose of SNSs is to provide an interface for users so they can search for friends and maintain relationships (Gross, Juvonen, & Gable, 2002). Obviously, for those

teens who have several hundred friends, they are accepting friend requests from the friends of friends, the Kevin Bacon effect on the internet (Taylor, 2008).

These secretive appearing interactions between teens and cyberspace have fostered a sense of worry in parents, teachers, and other adults about the potential risks to personal safety. The next section will examine the benefits and risks associated with these modes, including a discussion on issues related to privacy, safety, and adolescent psychological and psychosocial development.

Benefits and Risks

As can be seen from the data presented in the previous section, adolescents are using these new modes of communication to fulfill their communication needs. Clearly, there must be benefits associated with this new technology. Pew research (Lenhart et al., 2007) reported that 89 percent of teens say using the internet and other electronic devices (e.g., phones and iPods,) has made their lives easier. Interestingly, 71 percent of their parents agreed with them, arguing that technology allowed family members to connect with each other, even when they were not able to be together in a physical environment.

There is, however, a downside to using these new nonverbal avenues for communication. Tucker (2009) reported that his students were victims of technology, something they no longer viewed as recreational but rather an essential part of daily life. He argued that his students experienced periods of stress during times when they were temporarily unable to monitor their phones and iPods (e.g., when they were in class). According to his research, the average teen spent 4 hours a day interfacing with

some device and 80 percent of teens said a day away from technology made them feel “grumpy,” “bored,” “sad,” or “uninformed” (Tucker, 2009).

Pew research (Kennedy, et al., 2008) reported that today’s busy and high technology families were less likely to eat meals together, a fact that has been previously related to family dysfunction (Figg, 1999; Fulkerson, Neumark-Sztainer, & Story, 2006). The adults in the PEW research poll (Kennedy et al., 2008) also stated that, for them, technology has blurred the line between home and work, making it almost impossible to leave the office at the office.

Reported concerns about these new forms of communication tended to fall into one of two categories. The first category concerned issues related to the development of the child. The second were those related to safety and privacy concerns with the technology itself.

Developmental Concerns

A concern frequently cited in the literature was that these new forms of communication might have a negative effect on the psychological and psychosocial development of adolescents. Past research has emphasized three areas of concern related to adolescent development that may be harmed by these more non-personal forms of communication (such as SNSs and texting). The first of these concerns had to do with the development of networks of friends. Parents and other adults have worried that children will not maintain their existing offline friends when they enter the online world. Subrahmanyam and Lin (2007) and Gross et al. (2002) found that even the teenagers who used the internet the most still spent most of their after-school time

hanging out with friends or playing sports. In fact, according to Pew research (Lenhart et al., 2007) teens who were the most active online were also the most active offline. Hargittai (2008) and Williams (2007) both concurred that adolescents and young adults used SNSs to continue or develop existing relationships, not to establish new ones. They further stated that online pages are extensions of offline relationships and not replacements for them.

The second area of concern was that since much of an adult's identity is developed during the adolescent years (Muuss, 1975); spending significant amounts of time in artificial online environments may not be healthy for identity development. Interestingly, Subrahmanyam, Smahel, and Greenfield (2006) found the opposite, that in online or virtual environments teens were not at the mercy of an external environment. They co-created their identity with the others in that milieu, meaning that they controlled the transmission of information about their age, sex, and location, things that would have been obvious in the external world. While on the surface this may not sound like a positive effect, the authors contended that this provided teens with more options as they determined who they wanted to be. It should also be noted that SNS users did not necessarily present themselves online exactly as they were in real life (Zhao, Grasmuck, & Martin, 2008). The internet is, in many ways a new social environment where teens actively co-construct not only their identity, but also their sexuality and sense of self worth (Greenfield & Yan, 2006).

The third area of concern was that teens who spent large amounts of time online would not develop the social closeness needed for personal well-being. This concern

has not been supported by the research. Gross et al. (2002) found that teens who used these alternative modes of communication reported an overall sense of closeness and overall well-being. Valkenburg and Peter (2007) also reported that teens who spent more time online felt generally closer to their friends. Further, Eberhardt (2007) found that online social environments might be better communicative environments for some people, even when the communication partners are the same as they would be offline. This idea was supported by Valkenburg and Peter (2007), who found that socially anxious adolescents believed the internet was more effective for intimate communication. Interestingly, it is not only those who have difficulty communicating in traditional environments that may benefit from the online world, extroverts may also have an increased sense of worth when they are online because they crave the additional social attention it provides (Subrahmanyam & Greenfield, 2008; Subrahmanyam & Lin, 2007).

Privacy and Safety Concerns

One does not need to dig too deeply into the literature to discover expressions of fear expressed regarding the safety of children in cyber space. The evening news generally contains some story about a child who was lured into trouble by an internet predator. These are certainly cause for concern, but does the literature support the idea that the digital world is a dangerous place for children and that we ought, as parents and educators, to be worried about their privacy and safety?

Current research indicates that, at least as it relates to strangers; the internet is a safer place than it once was. Richardson, in 2007, argued his opinion that the fears of

parents and other adults may have been over exaggerated. He cited a study by the National School Board, which reported that only about 2 percent of the 1200 students in their survey reported that a stranger they had met online had attempted to contact them. Further, only about .08 percent of the participants had actually met someone without his or her parents' permission. Wolak and Ybarra (2008) found that while a national online survey of 10-15 year olds reported that 33 percent had experienced electronic sexual harassment and 15 percent electronic sexual solicitation, the numbers decreased to 9 percent and 4 percent respectively when chat rooms and instant messaging were eliminated from the venue of cyber options. Social networks, because of the more limited access allowed by users through privacy settings, were viewed as significantly safer environments.

The issue of privacy on the internet is two-pronged. The first prong represents protection to the user from incoming data. The second prong represents protection for the user from the effects of their outgoing data. Progress has been made on the first prong, the protection of cyberspace users from internet predators and pedophiles. Progress has not, however, been made on the second prong. Is one's FaceBook site a place of private speech or a public forum? Teens do not view their online activities as answering to the same regulating bodies as their offline ones do, however, there are governing bodies watching and judging (e.g., school administration, potential employers), so the expectation of privacy needs further definition. Baule and Kriha (2008) cited a variety of legal cases related to privacy issues and MySpace, which all supported the idea that the moral components of this new media have yet to be

resolved. All users, teens included, would be well advised to exercise caution when adding content to their SNS pages.

It is easy to argue that nothing should be posted on an internet site (or written in a text) that would be inappropriate to repeat to any audience. A cursory viewing of adolescent open sites (i.e., no privacy settings) suggests that this population appears comfortable “saying” just about anything. Williams and Merten (2008) postulated that the popularity of reality television might be related to adolescents’ apparent comfort in sharing the intimate details of their lives with a global audience. The internet is a global community operating without a functional set of morals.

In summary, as Baron (2005) reported, teens are perceptive communicators and they use many strategies to control their communications. When IMing, they may send a message that they are unavailable, thus allowing themselves to interact only with the friends they really like. Teens also choose what aspects of SNSs to use based on a variety of needs including their need for contact with others, their need to control the type and volume of information released to the public, and the relative permanency of that information (i.e., how easily it could be deleted) (Ross, Orr, Arseneault, Simmering, & Orr, 2009). Finally, teens do not use the internet in order to communicate with strangers (Gross et al., 2002; Gross, 2004; Jayson, 2009; & Valkenburg & Peter, 2007). In fact, more than two-thirds of all adolescents report that they only communicate with their existing network of friends when online (Lenhart et al., 2007).

Summary

The ideas about the nature and development of adolescence, the changes in language skills, and the understanding of how these modes of communication work is equally valid when interacting with teens who are not verbal as it is when interacting with teens who are. Disorders in language, often paired with cognitive deficits, do not negate the biological (e.g., hormonal) changes that teens experience. Additionally, if the goal of speech-language pathologists, special educators, caregivers, and others who work with this population, is to create opportunities for teens who are nonverbal to interact with their peers, we must understand how and why those peers are using technology for communication purposes.

CHAPTER III

METHODOLOGY AND PROCEDURES

The purpose of this study was to investigate how adolescents in a small urban setting in the upper Midwest use alternative modes of written communication (text messaging, e-mail, instant messaging, and participation in internet social networking sites) for discourse purposes. To meet this purpose, I conducted a qualitative research study using a grounded theory design to discern how adolescents decide what mode of communication to use in any given situation and with any given audience. I also studied the different functions of communication served within these modes. This information might enable speech-language pathologists to increase meaningful interaction and participation with adolescents who are nonverbal.

Research Design

Because I wanted to gain a comprehensive understanding about the phenomena of how adolescents use alternative forms of written communication to interact with each other and what the content of that interaction looks like, I believe that qualitative research was the best approach for my study. Learning about why adolescents make the communicative choices that they do was a task best learned from the perspective of the adolescents involved (Glesne, 2006). Interviews, observations, and the review of pertinent documents, all qualitative techniques, provided a means for obtaining this type of information with enough depth to yield meaningful results.

I chose to use grounded theory methodology for this study. More specifically, my study followed a systematic grounded theory design as developed by two sociologists, Barney Glaser and Anselm Strauss in 1967. This model has been used extensively for research in the areas of sociology, nursing, education, and the social sciences (Creswell, 1998; Strauss & Corbin, 1998). The objective in grounded theory design is to generate a theory, grounded in the data, which answers a specific research question (Creswell, 2005). It is used to develop explanations of the variability that frequently occurs in social interactions (Wells, 1995). As with other methods of qualitative research, grounded theory design allows the theory to emerge from the research, rather than beginning the process with a theory in mind and using the research to substantiate that theory (Strauss & Corbin, 1998).

I chose this methodology because I believe the grounded theory model is an excellent means of developing a broad theory to explain a specific process. In this case, the process I hoped to explain was *how and why the form, function, and purpose of teenagers' communication vary across different modes of communication.*

Negotiating Entry

Researching adolescents and their language was not without its unique challenges. Establishing rapport and earning the trust of the subjects was an essential precursor to gaining admittance into their communication community. Without entrance into the community, the validity of the data would be impossible to verify and the results from the study would be meaningless. How does an adult researcher gain the trust of adolescents and, how do we, as researchers, have confidence that what we

have been told during interviews represents the subject's reality and not what they think we want to hear?

To answer these questions, I reviewed previously completed qualitative research that followed a similar methodology to this proposed study. I intentionally chose research studies that dealt with sensitive topics such as sex, poverty, and abuse, thinking that researchers who studied these types of topics were more likely to have addressed access issues than might researchers whose topics were less intimate. I found an abundance of research using grounded theory model with adolescents (Bauman, Karasz, & Hamilton, 2007; Clampet-Lundquist, 2007; Everall, Bostik, & Paulson, 2006; Haggstrom, Sanberg, Hanson, & Tyden, 2006; McKee, & Karasz, 2006; Sanger, Moore-Brown, Montgomery, Rezac, & Keller, 2003; and Weiss, Jampol, Lievano, Smith, & Wurster, 2008). Unfortunately, very little of the research discussed any specific procedures undertaken to gain entrance into the adolescent community. The studies that did address this concern (Sanger et al., Weiss et al.) were consistent in the tools they used to gain access and establish the authenticity of the data. Building rapport with the adolescents and developing in them a sense of ownership with the research were the two consistently used methods described to gain entrance into the adolescent world and ensure the authenticity of the results. I used the same two strategies in this study.

Prior to any attempt to negotiate entry, I obtained approval from the Institutional Review Board. Once this approval was granted, I prepared advertisements describing the nature and scope of the study to be placed in the newspapers of four

small towns in a small urban setting in the upper Midwest. During the process of submitting these advertisements, I recruited the first study participants.

Providing a thorough understanding of the purposes for the study and, more specifically, the adolescent's role in the study was the second step in the process. I addressed these issues through informal informational sessions, held with individuals or small groups interested in participating in the study before any of the interviews were scheduled. The purpose of these sessions was two-fold. First, I needed to provide the potential subjects with additional information about the study, including an explanation of the rationale for the research and the content of the consent form. Second, and potentially more important, I needed to have an opportunity for the teenagers to meet me and for me to begin to establish rapport. To borrow from participatory action research, I tried to engage the adolescents as key stakeholders in the research process (Fossey, Harvey, McDermott, & Davidson, 2002). To accomplish this, I reiterated the goal of the study to them (i.e., to develop vocabulary for their nonverbal peers) and emphasized the fact that this question could not be answered without their input. My previous interactions with adolescents, professionally and personally, as well as my review of relevant literature permitted me to believe that if I could accomplish both of these strategies (i.e., building rapport and creating a sense of ownership,) I would be accepted by these young people, and the study would yield relevant data.

Participants

Theoretical (i.e., purposeful) sampling was used in this study to recruit participants. Theoretical sampling, the selection of data sources based on their

potential to yield information relevant to the generation of a theory, is the guiding principal by which all data sources (including participants) are selected in grounded theory research (Creswell, 2005; Strauss & Corbin, 1998). Maxwell (2005) and Seidman (1998) also support the use of this concept, called purposeful sampling in their vernacular, of selecting specific people, places, or activities because of their ability to provide information not easily obtained from other people, places, or activities.

To be selected for participation in this study, subjects must have routinely used at least two of the following modes of communication, text messaging, e-mailing, instant messaging, or a social networking site. Once potential candidates had been identified, I contacted each by phone to determine their potential interest in participating in the study. If the candidates indicated an interest in participating, and were under the age of consent, no interviews or observations were initiated until consent forms had been obtained from both the participant and his or her parent or guardian (see Appendix A). This consent was obtained verbally via a phone conversation and then in writing before I scheduled any interviews or observations. When I received consent from the participants and their parents, I scheduled the information sessions and introductory interviews. Following the initial contact with those self-identified participants, I used the technique of snowballing, the use of current study participants for recruiting purposes (Seidman, 1998), to identify additional participants. At the conclusion of each interview, I asked participants whether they knew someone they thought would be willing to be interviewed for the study. I then contacted those individuals by phone in the second phase of data collection. Thirteen adolescents,

seven females and six males, chose to participate in the study. The participants ranged from 14-18 years of age.

Data Collection

In qualitative research observations, interviews, and review of documents are common ways in which data is collected. In grounded theory, however, data collection is not completed prior to the onset of analysis. Grounded theory methodology instead relies on the philosophy of emerging design, the idea that the emergence, or development of a theory, is a process that happens all throughout the research and not only at its conclusion. Analysis of data occurs concurrently with its collection. This constant comparative analysis (Piantanida, Tananis, & Grubs, 2004; Strauss & Corbin, 1998) allows the researcher to refine interview questions, conduct additional observations at specific locations, and review supporting documents as indicated by the already collected data. In other words, the amount and types of data to be collected are determined by the analysis of the data already collected. Subsequent data collection is used to fill in gaps in the data and/or provide additional support for an emerging theory.

For this study, data collection was ongoing until two criteria had been met. The first criterion was sufficiency, meaning that there were sufficient numbers in the study to reflect the range of participants and modes of communication (Seidman, 1998). The second criterion was saturation. Saturation occurred when no new information relevant to the research question emerged from the data (Creswell, 1998; Creswell, 2005; Guba & Lincoln, 1985; Seidman, 1998; Strauss & Corbin, 1998).

Data Collection Tools

The primary data collection tool in this study was the interview; however, because the focus of this study was on written communication, documents (including samples of e-mails, transcripts from text messages and instant messaging sessions, and screen shots from social networking sites) were also used to support the data. Additionally, observations occurred in the opportunities where a participant used one of the modes of interest for demonstration purposes during the course of an interview.

Interview

Interviews can be a rich source of data for the researcher and are, in many cases, key to qualitative research (Dilley, 2004). The goal of an interview is to provide the opportunity for the subject to reconstruct his or her experience (Seidman, 1998). For this reason, Seidman, (1998) recommends a series of three interviews as the best model for research. The focus of the first interview is on the life history of the subject, the second on the details of the experience, and the third provides the opportunity for reflection on the meaning of the experience.

I adapted Seidman's model of three interviews for this study because, following the first two interviews, it was apparent that although the study participants were willing to participate in the study, they were not willing to commit to three interviews. As a result, I asked each study subject to participate in one or two semi-structured interviews, each lasting between one-half and one hour. The first interview centered primarily on the details of the experience (their use of the technology to communicate) but also included some information about the life history of the participant. A second

interview was conducted with six of the participants in order to provide clarification or elaboration of the data. All of the interviews were conducted in the participant's homes. Information obtained during the initial interview as well as that which was collected during any observations was used to develop questions for the follow-up interviews.

Kvale (1996) says that interviewing is a craft, one that is developed over time by qualified researchers. Essential to developing this craft, is learning to ask the right questions. Information flow from the participant to the researcher is best facilitated by using open-ended questions. Interview questions must also be phrased in a way that is developmentally (age and content) appropriate so the young people being interviewed fully understand to what they are being asked to respond (Nelson & Quintana, 2005). These open-ended questions should address the who, what, where, when, why, and how of the process being studied. Even though each interview begins with a specified list of questions, the format should remain semi-structured, so that the researcher can follow-up on comments made by the participant and move in new directions as appropriate (Strauss & Corbin, 1998). A list of initial interview questions for this study can be found in Appendix B.

I recorded all interviews onto an mp3 player for later transcription. I also took notes during the interviews to document nonverbal (e.g., gestures, body language, and facial expressions) and extra-verbal (e.g., self-talk and vocalizations) communication.

I transcribed the interviews into Microsoft Word using a naturalized approach. In a naturalized approach, the interview is transcribed exactly as heard. Grammatical

mistakes, false starts, and revisions on the part of the subject (and interviewer) are included. In contrast, in a denaturalized approach, edits are made to remove those idiosyncrasies. The rationale for doing this is that leaving those errors in the transcription may detract from the overall message the participant is attempting to convey, for example, the reader may view the subject as less intelligent because of grammatical errors and therefore disregard their message (Oliver et.al, 2005). In agreement with Rubin and Rubin's (1995) idea that interviewing is a way of hearing the data, I approached transcription from the perspective of naturalism. All of the data flowing from the subjects, including the verbal and the nonverbal components, were important to capture a global picture of the individual being studied.

In terms of the form of the transcription, the researcher needs to choose between a dramatic script format and a columnar format (Oliver, Serovich, & Mason, 2005). Transcriptions commonly follow what the authors call a dramatic script where the completed product resembles a play; one speaker has a line, followed by the next speaker, and so on. In contrast, when using a columnar format, the speaker's (i.e., interviewer and interviewee) words are listed side by side; better representing the natural flow of speech, making it easier to represent the overlapping of speech that frequently happens.

For this project, because the aim was to examine adolescent language, my transcription used a dramatic script format to facilitate ease of coding. During this process, I expended considerable effort to reflect the back and forth nature of communication during the interview without using a columnar format.

Document Analysis

I collected and analyzed non-technical documentation to gain additional information pertaining to the research question. This documentation included printed screen shots from the participants' internet social networking sites, instant message sessions (within the internet social networking sites), and visual examinations of dialogues from cell phone text messages. As previously stated, these types of documents were used to support the statements and assertions made by teens interviewed in the study. No novel codes were gleaned from the analysis of the documents.

Observation

Observations took place concurrently with the interviews. The purpose of these observations was to allow participants to illustrate some feature from one of the modes of communication included in this study. The observations also provided me an opportunity to compare the characteristics of interest (i.e., whom they are "talking" to, what they are "talking" about, and what vocabulary they are using) in these modes with what was reported during the interview. As recommended by Emerson and Fretz (1995), field notes were collected during these observations to document the verbal and nonverbal behavior observed during the observations.

Method of Validation

Validity in qualitative research can be maximized using a variety of tools. Creswell (1998) describes eight such procedures including prolonged engagement and observation, triangulation, peer review, negative case analysis, clarification of

researcher bias, member checking, rich thick description, and external audit. I used member checking, triangulation, prolonged engagement and observation, and an external audit to validate the data from this study.

The first tool I used to validate my study was member checking. In this process, subjects were asked to read transcriptions from their interviews in order to verify the accuracy of the content. Following the transcription of each interview, I contacted each participant to ask for a brief follow-up meeting during which they could read the transcript and verify its accuracy. Eight of the thirteen participants were willing to assist in this task.

The second tool I used was triangulation. Triangulation refers to the systematic verification of the data using more than one source. For example, information stated in one interview may be compared to data from another interview and to data from an observation. Triangulation was my primary measuring stick to determine whether I had successfully negotiated access into the adolescent community. I implemented this strategy, in part, by conducting four observations of adolescents interacting in a public place (such as the mall). In order to remain unobtrusive, I took notes during these observations but waited until I had left the site to detail the information about the form, function, and mode of communication used. These observations provided me with a way to validate what I was told during interviews in terms of communication content and style. Data from any observations co-occurring with the interviews was used in the same manner and for the same purposes.

The third tool I used was prolonged engagement and observation. During the time of the study, I had multiple contacts with eight of the thirteen participants. Repeated contact with a person or site allows the researcher to become familiar with the setting and the participants; thus allowing them to trust their hunches when coding the data. Seidman (1998) specifically discussed the issue of validity as it is related to the interview process. He says that, as researchers, we must pay attention to the verbal and nonverbal cues given by the client during interviews. The familiarity gained through multiple points of contact assisted me in the discernment of these cues.

The final tool, the external audit involves having someone outside the study review the data. For this, I asked a colleague of mine who teaches a course in adolescent language to read and review the content for comprehensibility and accuracy of content in terms of what would be expected from adolescents.

Data Analysis

As each interview was completed, I wrote memos and field notes to assist in later coding and theory generation. These memos were initially handwritten on separate sheets of paper; however, after I transcribed the interviews, I transferred the notes to the Word document copies of the interviews in order to help facilitate the coding process. The Word documents were saved in files which specified the age and gender of the subject but not the names or any other identifying information. I then exported each Word document into the computerized coding program "Ethnograph 6." This software program, sold by Qualis Research, transformed the aforementioned text

documents into a format compatible with coding and managing large amounts of qualitative data.

Data analysis in grounded theory design occurs concurrently with data collection and continues until saturation, or the point at which no new information is coming from the data. There are three phases of analysis: open coding, axial coding, and selective coding. Although these three phases of coding are not necessarily discrete as they often overlap, each will be addressed separately in the next sections.

Open Coding

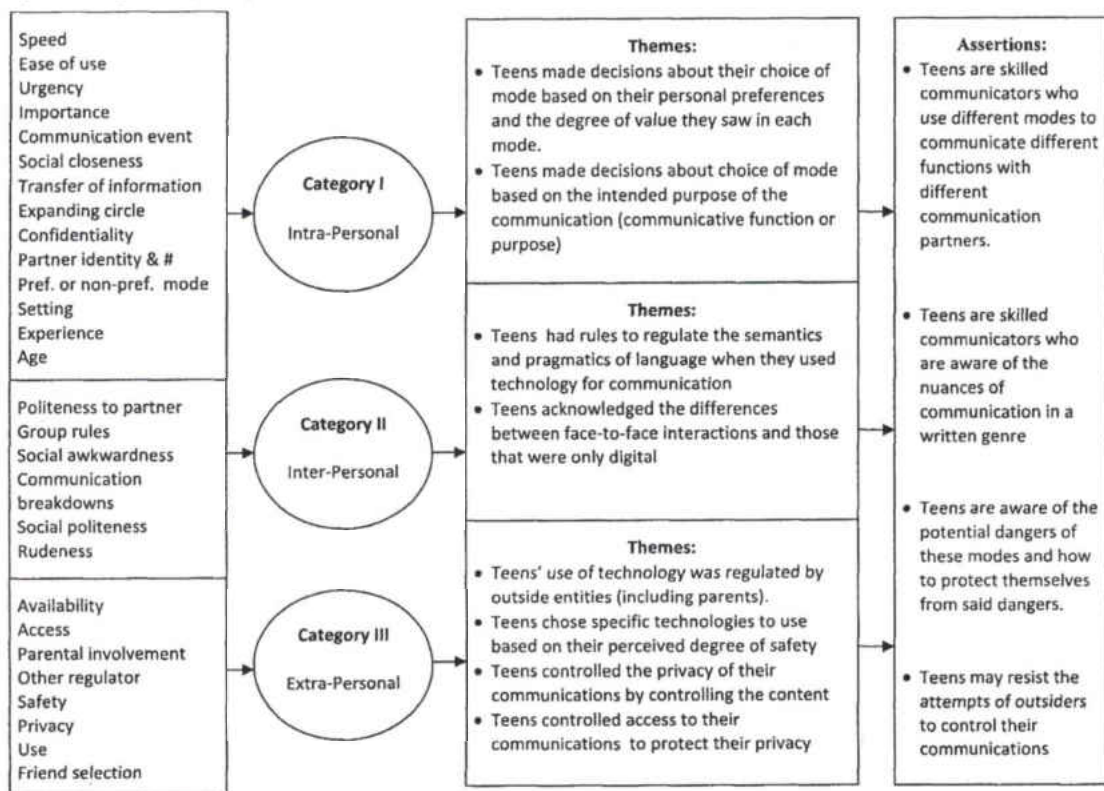
The first step in data analysis following this model is open coding. Creswell (2005) defines coding as the process by which the data is segmented and labeled so that it can be described and analyzed. In grounded theory research, the first stage of this is open coding, which involves breaking apart the data in order to discover (i.e., label and name) the concepts (codes) within the text (Strauss & Corbin, 1998). Once the concepts have been coaxed from the data, categories are identified from within and/or between the concepts to describe the phenomenon detailed by the text. Categories serve two main purposes, to reduce the number of overall concepts to a manageable number and to explain the underlying concepts represented by the data. Concepts represent phenomenon; they help the researcher figure out what is happening (Strauss & Corbin, 1998).

As I began the open coding process, I followed the approach recommended by Creswell (2005). I read each transcript at least four times, each reading serving a different purpose in the coding process. During the first reading, I read the document

and the memos and/or field notes associated with it prior to naming any concepts. During the second reading of the transcript, I assigned broad codes to large segments of the text. During the third reading, the broad codes were segmented into smaller, more specific codes. Either these were terms that made sense to me or they were *in vivo*, directly from the data (i.e., phrases used by the interviewees,) (Strauss & Corbin, 1998). The purpose of the fourth reading was to reduce overlap and redundancy between the codes assigned during the third reading; thereby reducing the total number of codes to a manageable number.

I coded the data from each interview as soon as it was transcribed. Prior to coding each subsequent transcript, I reread two or three previously coded transcripts to refresh my memory about the codes used and the definitions of and rationale for those codes. I then followed the aforementioned multiple reading strategy. As mentioned earlier, I engaged in constant comparative analysis while coding. This strategy helped me refine and edit the codes used to identify the concepts and categories in analysis as well as discern what additional forms of data I needed and refine the list of interview questions and the focus of future observations. The codes, categories, themes, and assertions that were developed from this analysis can be found in Figure 2.

Figure 2. Open Coding Concept Map



Axial Coding

The second step in the generation of grounded theory is axial coding. During this process, the researcher looks at how the categories and subcategories are related based on dimensions and properties and may even chart them on an axis (Strauss & Corbin, 1998). The goal of axial coding is to discern the links and relationships between categories. As the relationship between the categories deepens, some categories are reclassified as subcategories because they generally answer when, where, and how about a phenomenon rather than describe the phenomenon itself.

Once the relationship between the categories has been established, the core phenomenon is identified from the available categories; at this point, all other categories and subcategories are defined in relationship to that phenomenon.

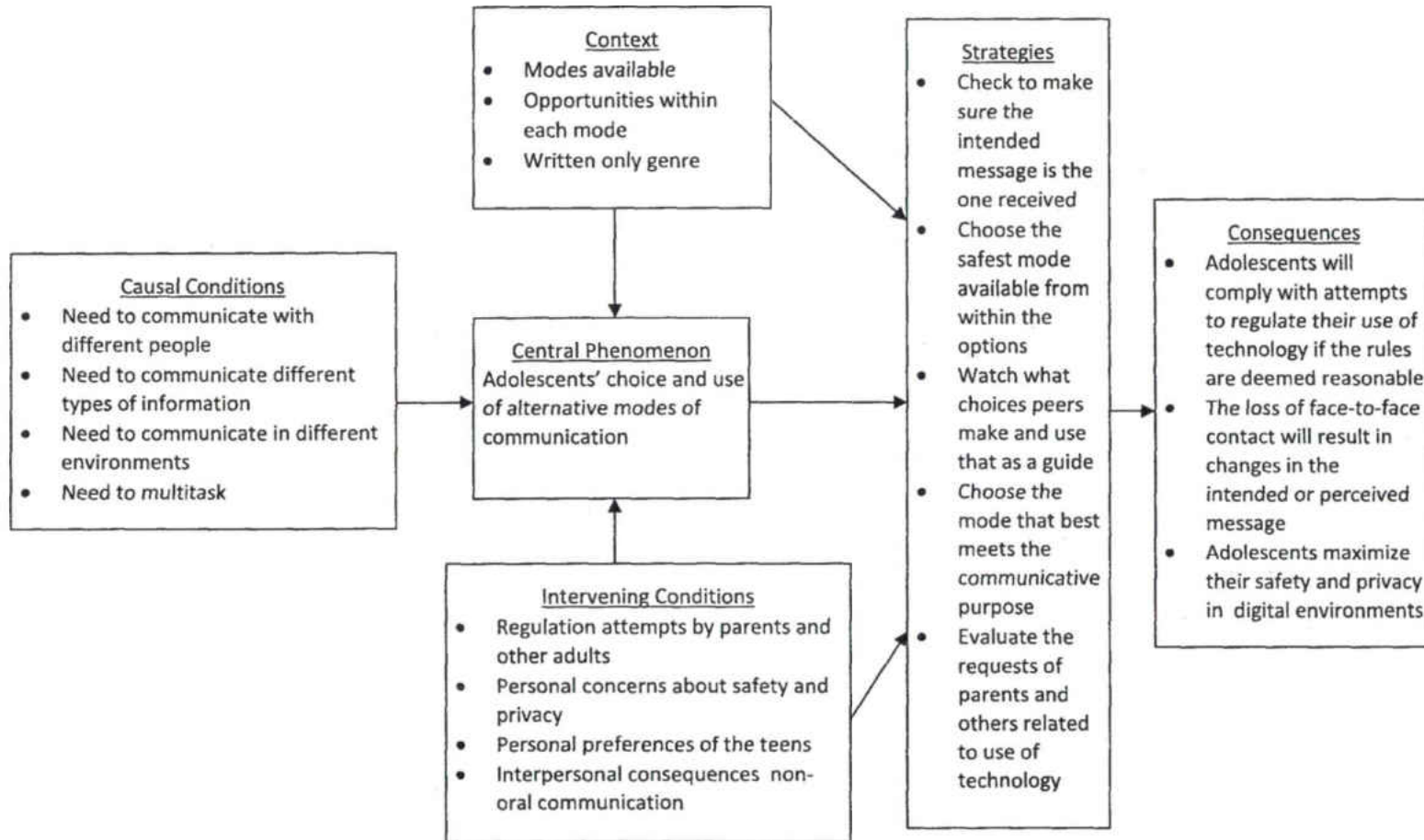
This process is facilitated by completing what Strauss & Corbin (1998) and Creswell (2005) call the paradigm model or the coding paradigm. This model assists the researcher in determining the relationships between the categories and the subcategories by looking at:

- The causal conditions related to the central phenomenon
- The strategies taken in response to the phenomenon
- The contextual factors that influence the strategies
- The intervening conditions that promote or discourage the strategies
- The consequences of the actions and interactions

These concepts will be represented by the categories, subcategories, or some aspect of the dimensional relationship between them. The coding paradigm for this study can be found in Figure 3.

Figure 3. Axial Coding Paradigm

54



Selective Coding

The third and final stage of grounded theory analysis is selective coding. It is during this third phase of data analysis, that the cumulative story resulting from the data is told (Creswell, 1998). Strauss and Corbin (1998) define selective coding as the process by which the data becomes fully integrated and the theory is refined. This stage flows from axial coding with the identification of the core phenomenon, around which the answer to the research question is revealed. The findings from the open coding concept map, the axial coding paradigm will be presented in the next chapter. The chapter will conclude with a discussion of the emerging theory generated during the selective coding process.

CHAPTER IV

PRESENTATION OF FINDINGS

The purpose of this study was to investigate how adolescents in a small urban setting in the upper Midwest use alternative modes of written communication (text messaging, e-mail, instant messaging, and internet social networking sites) for discourse purposes. The research question was *"How and why does the form, function, and purpose of teenagers' communication vary across different modes of communication?"* The intent of this chapter is to address the research question by presenting the results of the current study that lead to the development of an emerging grounded theory

This chapter is organized around the findings as displayed in Figures 2 and 3 (Chapter III). During the open coding portion of data analysis as displayed in Figure 2, codes related to adolescents' use of technology were organized into three categories, intra-personal, inter-personal, and extra-personal. The first section of the chapter will provide a discussion of those categories and the themes and assertions associated with them. Following the open coding process, during which the previously mentioned categories, themes, and assertions were developed, axial coding was undertaken to further explore and explain the data. Throughout axial coding, the codes were further refined to create the axial coding paradigm (see Figure 3). The components of that paradigm will be discussed in the second section. In the final section of the chapter, a brief discussion of the emerging theory will be presented.

Category I: Intra-Personal

The first category, "intra-personal," refers to all the codes associated with the decisions individual communicators made related to their choice of technology. These included considerations such as the degree of value they saw in the use of each mode and the function or purpose of the interaction.

Theme One: Teens Made Decisions about Their Choice of Mode Based on their Personal Use of the Mode and the Degree of Value They Saw in Each

The adolescents in this study routinely chose between communication modes in their quest to select the best mode for their interactions. The major factors in their preference for a mode were the degree to which they used it themselves, the value they saw in its use and, to a certain extent, and the degree to which their peers used it. This section will present the teens own words explaining why they use, or do not use, each of the modes studied.

Preferred Modes

Texting. Texting, the sending of text messages via a cell phone, was the most common form of communication used by these subjects. Only two of the 13 were not using texting at the time of the study, one because he currently did not have a cell phone and the other because her parents had temporarily taken away her texting privileges as a means of behavior management. Five of the subjects stated their preference for texting over conversations in person or over the phone because of its speed and higher rate of response. For example, Zack said, "I think personally that it's easier to talk to friends without the phone. It's just easier to type it up and send it back

and forth.” Caleb also commented on this idea with his statement, “I’d probably text unless it was urgent. More people respond to that I think, more teenagers.”

However, six of the thirteen gave a different reason for their preference. These teens were busy people and they sometimes did not have time to talk to their friends individually. Texting gave them the ability to multitask. For example, Tony said:

Because [when texting] you can stay in their conversation where you really don’t have to think much about it. If you are trying to listen to two conversations at once you are going to lose track of one. So this would make it easier. You can go back to what you said, you can read what they are saying and just send it, and then you can go back to your other conversation. You don’t have to think much about that other one. I do use my cell phone to talk to friends, but not to speak to them. I text them so you can have your own conversation while you can stay in another conversation. You don’t lose track of either of them.

Likewise, Chelsey stated, *“yah I know I shouldn’t, but like I text when I drive [laughs] otherwise I get behind!”*

Participants also viewed texting as an effective strategy to use when they were worried about the availability of their intended communication partner. An incoming text was viewed as easier to ignore than a ringing telephone, making it a good way to send a message if they thought their communication partner might be busy. Mandy made her case for this by saying, *“[I would text] when I know that they’re in the middle of something and they can’t be on the phone exactly.”*

The importance of the topic was also a factor mentioned in the choices between making a call and sending text. I would have expected that a call would be the preferred way to communicate if the topic was important; however, these teens were split on the subject. For three of the teens in this study, texting was the go-to method when the subject was important or they just needed to know something quickly. Nick argued:

If it is something new and important or something, I would probably text them. I used to always say "why text." I didn't understand. I didn't like it, but when I started getting text messages, it's just...you know if you only have one question to ask somebody it's easier to just type in the question rather than call them.

However, six of them felt that because a text was more easily ignored, it was not an appropriate way to communicate if the subject was important. They viewed texting as being more about connecting with friends to fill a social need. For example, Kayla reported "I usually don't text my friends just to ask them questions, I text them like "hey what's up," a lot of us do that." Melissa expressed a similar opinion on the role of texting:

If you just want to know what they're doing and just talk to them if you're bored and yah. If you just have to ask them like a really quick question but if they are not answering, then I will call them." It depends on how bad if I really want to do something with them, or if I need to know something, have an important question and need to know right away, but if it's not that important, then I'll text them.

FaceBook. All but three subjects reported regular use of the social networking site (SNS) FaceBook. As was discussed in Chapter II, this interface provides a plethora of communication opportunities for the skilled user. For these teens, the most frequently used and most valued part of the site was the status update or writing on someone's wall. Nick defined the use of these features as follows:

Yah. You could like post something on FaceBook for example. You could post something on your wall. And anybody who is a friend of you, you click on your profile and scroll down and read your wall and it will be on there, and everybody that's a friend with you sees it. It's a good way to talk to friends.

When viewing someone else's wall to read what others have written on it, there is an option called wall-to-wall. This interface shows all the dialogue between a friend and his or her conversational partners. People whose primary use of FaceBook is to read the walls of others without posting much themselves are called "FaceBook creepers." Although this sounds like a negative thing, "FaceBook creeping" was considered one of the best ways to keep abreast of all the current news. Even those who saw little value in many of FaceBook's features still appreciated the chance to catch up on what others had done. For example, Lindsay said "*I'm kinda like, I don't do anything on FaceBook anymore. I'm just kinda like FaceBook creeping; I'll just go on people's sites.*"

Non-Preferred Modes

Instant Messaging (MSN). Instant Messaging (IM), similar to e-mail except that it is used in real-time, was the gateway digital communication tool (i.e., the tool that

launched these young people into cyberspace). While all 13 subjects reported using MSN (i.e., their IM of choice) when they were younger, none used it as a stand-alone mode for communication anymore. Nick reported *"yah, I used to use instant message a long time ago, when we were fifth and sixth grade we used to do instant message a lot. I don't use instant message anymore."* Tony added further support to this idea by saying *"I did a little bit of that [instant messaging]. But it got real old real fast."*

Six of the subjects reported that while they did not like to use MSN itself, they still liked the features of the interface. These teenagers now used the version of MSN embedded into FaceBook. For example, Brittany said:

Since MSNs kind of built into FaceBook I kind of don't go on that [the stand-alone version] as much anymore I did that before I had FaceBook. I don't remember when I got it; I think it was the beginning of seventh grade.

Chelsey supported this idea as well, saying *"I don't use instant messenger anymore cause I think that's out now. Like no one uses IM anymore since like back in junior high or ninth grade. I do use the new one in FaceBook."*

E-mail. E-mail, like instant messaging, was not a mode used much anymore. It was generally viewed as slow and archaic. Brittany illustrated this idea with her comment, *"um I don't really e-mail people anymore I just get a whole bunch of forwards."* Likewise, Lindsay said, *"the only e-mails I get are like confirmations on like if I order anything."*

Even with the aforementioned beliefs, Sarah and Nick both saw potential merits in its use. *"Um maybe if it was more urgent I would probably [use it] and if it was more*

personal and I didn't want everyone else to see it I would probably send them an e-mail."

"I e-mail my grandma every now and then. That's one of the only ways I communicate with my grandma."

Phone and Face-to-Face. Like e-mail, face-to-face conversations and use of the phone, (apart from texting) were not preferred modes of communication. Since phone calls required too much attention on the part of the speaker, 11 of the 13 participants in this study indicated a strong preference for texting over use of the telephone. For example, Chelsey said:

Because you don't have the awkwardness of like "hey what are you doing" you can just like text and it's not like awkward... like once you're on the phone with them you have like awkward moments. You're like "well um you want to go."

Lindsay agreed about there being a general awkwardness when using the telephone:

You don't have to just sit there on the phone when I'm doing something I can just text once in a while. It's not like you have to talk to them... like on your text you can just say like exactly what you want to say. It's not like formal. You have to sit there on the phone.

Kayla also supported this idea:

I might just text 'em because you have to kind of think about it, like when you're on the phone and there's like long silences you kind of have to think about what you say. I don't know in a text you have more time to think.

However, two reported that, in contradiction to their peers, a conversation involving verbal communication was a more efficient way to communicate. Although Kayla previously stated her concerns about the difficulties inherent in phone conversations, she reported some benefits to talking on the phone, *“um if I want the answer right away, I’ll just call them.”* Kyle also discussed scenarios in which he would use the telephone to communicate, *“but of course if it [the conversation] just gets way too long, I just call the person and we talk.”*

Three of the teens in this study recognized other benefits of face-to-face communication. Sarah reported:

My favorite way is a face to face because um I have this one really good friend we always go out like when we need to talk. Um, we don’t really like doing that over MSN; you know just its better to go in person. We’ll go out and we’ll go shopping for a bit and then we’ll go sit down and we’ll have coffee and we’ll just talk for a few hours face to face.

Theme Two: Teens Made Decisions about their Choice of Mode Based on The Communicative Functions or Purpose

Communication is used to accomplish a variety of purposes such as achieving and maintaining social closeness, expanding one’s social circles, and transferring information to and from other communication partners. Although the teens in this study indicated two preferred modes of communication to accomplish these functions, they were most illustrative about how they used FaceBook to meet these needs. The ways in which the study participants used this mode to accomplish each of these

communicative functions will be examined in the next sections using the words of the teens themselves.

Social Closeness

Social closeness is the function of communication that facilitates the connections people have with each other and the closeness associated with those friendships and/or close family relationships. FaceBook, through the reading of status updates and/or wall posts, was deemed an efficient way to maintain social closeness by keeping up with the activities of family and friends they saw every day. For example, Mandy said, *“well me and my friend from [school sport] go back and forth on walls. Every time I go on she’s written something on my wall and so I write on hers.”* FaceBook was also viewed as a powerful way to maintain social closeness with acquaintances or friends who were more remote. In support of this idea, Brittany said:

Um since I live way out here I don’t really get to see my friends as much as everyone does who lives in town, so I decided that I wanted to do something like that (join FaceBook) so I could have all my friends in one big group cause some of them don’t have e-mails but some of them have FaceBook so it’s just a way of to gather people together.

Enlargement of the Social Circle

Enlargement of the social circle refers to any communicative event that helps the individual acquire more friends and/or acquaintances. In addition to creating online communities with offline friends, FaceBook also allows users to join groups of people who share common interests (e.g., 100,000 strong Stephen Colbert, a popular political

satirist) or to set up their own group, thereby enlarging their social circle. While this feature was not used by all subjects in this study, five indicated that they liked using the SNS to branch out of their existing network to connect with others. Caleb reported:

Um On FaceBook you can make groups or events. Like say it was my birthday party or something like that, I can make an event on the calendar or whatever and invite people, or I could make ah a group thing which is basically the same thing ah and then also you can type, click under your name I could put [friend's name] there and it says [friend's name] is in Texas for the summer or something like that.

Brittany gave a concrete example of how she had used FaceBook for this purpose in the past:

Um kind of I made some circles on there like one of them was a swim one like people who go to the pool and then another one was basketball I think and I'm in the Obama one. It said if you want, or whoever you're going for, and then it said McCain and Obama and I picked Obama cause I, I don't know.

Alexa reported a similar use of FaceBook:

Yah I've joined like [school name] softball 08 and then people who are going to go out for volleyball this year [can join it]. And Hills like for a TV show like favorite TV show. Maybe if you like met someone at camp and you just like talk to them cause, I have like 15 friends that I met at camp and they are really funny and so that's how I talk to them [in a FaceBook group], texting or like that. I don't like call them.

Transfer of Information

Transfer of information is the function of communication that encompasses the conveyance of information between people. To accomplish this, the teens in this study most often used the wall feature of FaceBook. For example, Nick said, *"on FaceBook you can do messages too that are one-on-one, and talk to friends. And then you can do stuff on people's wall. You can write on a wall and then everybody sees that."*

Chelsey also described the use of the FaceBook wall:

You can see like on FaceBook, on people's sites, you can see like what everyone, like you can see like who's in a relationship or if they broke up you know like all that stuff on FaceBook. You can like see what's happening, you know what I mean? Like on that main wall like when you log in it says all, you can tell how like what's all happening.

In sum, the teens in this study let their personal preferences guide their selection of communication mode. They had strong opinions about the modes, including when and with whom each should be used. They also were skilled at using each mode at its fullest capability and utilized the various options within each mode to meet their communicative needs.

Category II: Interpersonal

The second category, "interpersonal" includes all the codes related to the interactional nature of communication. This area included such aspects as

- How the loss of nonverbal and extra-verbal cues affected the transmission of the communicative intent,
- How the loss of personal contact affected the tone of communication,
- How the interactional rules changed when technology is present, and

- How the privacy of the communication itself was managed, especially when it was in written form.

Theme One: Teens Had Rules to Regulate the Semantics and Pragmatics of Language When They Used Technology for Communication

Perhaps the most enlightening portion of the interviews for me was learning how much these teens understood about the interpersonal aspects of communication. What emerged from the data related to this theme was that there were rules about how to communicate when in a group.

Rule One

Texting while in a group was acceptable if others in the group were also texting; however, it was not acceptable to text if others were talking. For example, Alexa said, *“mostly I just talk to the people I’m with, but sometimes I do just talk [text] to other people if there’s one of our friends that isn’t with.”* Similarly, Mandy reported, *“not on the phone probably conversations, but like I’d be visiting with the person I’m with but also I’d probably be texting. Like not while I’m talking but when we’re not talking.”* Finally, Tony explained, *“[when people text] they use it in a social way so they could be talking to someone else and then they could be texting somebody else.”*

Rule Two

Texting while in a group was also viewed as acceptable if the information being conveyed was private or would have hurt the feelings of someone in the group. In illustration of this rule, Mandy said *“[I’d text] if it’s something that I can’t really say out loud when I’m with like people I’m with. Like something like about “are you going to the party tonight,” if people aren’t invited then I text.”*

Theme Two: Teens Acknowledged the Differences Between Face-to-Face Interactions and Those That Were Only Digital

Additionally, these teens were cognizant of the role that removal of face-to-face contact could have on communication. They demonstrated this awareness in three ways. The first was their understanding that the speaker in a non-verbal communication act has a greater responsibility for ensuring that the message they intended to send was the one received. The second was their recognition of the added need to protect the confidentiality of the message when the speaker and the listener were not in direct contact with each other. The third was related to their comprehension of the changes in the tone and function of communications that may result from non-face-to-face interactions.

Responsibility

As has been previously discussed, the ability to monitor a conversation for comprehension and then to repair any conversational breakdowns that may occur is an aspect of language development that emerges during the adolescent years. Because of the loss of intonation, facial expressions, and body language, this task is the most difficult to accomplish when using a written mode of language. Interestingly, these teenagers were well aware of the changes to communication that might result from a lack of face-to-face, or at least voice, contact. For example, Alexa said, *"yah cause people think that like if you say like "OK" it could be like "OK" or it could be like "Ok [snotty tone]" so it could be taken the wrong way."*

Brittany also saw this as a concern:

Talking to people is better because you can actually like... sometimes you can get their emotions mixed up when you're talking to them on line because you can't tell if they're mad or if they are saying something like joking and so yah, I like talking to them just in person.

Confidentiality

Nearly all my informants mentioned their concerns about the confidentiality of their communications on the internet. Contrary to what the popular media reports, these teens were aware of these issues and made conscientious choices when they decided what and with whom to communicate. Brittany elucidated her thoughts on this concern as follows:

Um hmm sometimes if you do see wall to wall you can see the whole person's conversation that's kind of why you gotta watch what you write when you're...even when you're watching what you say and stuff. My friend said that it's so weird because you can see everyone's conversation she said it's wrong but it's still weird cause everybody's just spelling out everything and everyone can read it.

Alexa also commented on her concerns about potential losses to confidentiality that may arise when communicating in a digital environment:

We do sometimes but it's just like "hey what's up" and like if you talk to someone. But if you want to like have a real conversation you can go to a private message and just talk there. I probably wouldn't talk about a private issue, not on FaceBook or probably not on texting. Talking would be best, just so I know

that they know what I mean like for sure and nobody else reads it. And nobody else knows it cause they could be with a friend and I might not want the friend to know cause they'll tell. Cause even on a cell phone they could put you on speakerphone and it wouldn't be private.

Ethics

The teens in this study realized that it was often easier, and maybe even more acceptable, to be rude during non face-to-face interactions. While the topic of this study was not cyber-bullying, the teens I interviewed indicated their awareness of the effects non face-to-face interactions can have on personal ethics. They also had discovered they could easily change the tone of the conversation when using a digital medium. Caleb commented on this issue:

Um sometimes it is...you can be...I know this sounds bad but you can be more dishonest. You can say you're doing something you're not or if I were on the phone with you right now I could say I was doing something I'm not.

Mandy also reported her understanding of this aspect of communication:

I know I kind of feel that like when I'm not talking face to face because sometimes their facial expressions will like give off the wrong thing like I can be more up front about people when I am on the phone or texting or on Facebook.

In sum, the teens in this study were knowledgeable about interpersonal factors related to communication. They had developed their own set of pragmatic rules to govern the use of technology when in a group setting and they understood how use of

these modes could be used to convey information that would be unpleasant to convey in person.

Category III: Extra-Personal

The third category, "extra-personal" contains all the codes related to factors affecting access to technology and the opportunity to communicate. These included the actions taken by outsiders, namely parents and school officials, to regulate the use of technology by adolescents. Also included in this category were the attempts the adolescents themselves made to control content of and access to their communications in order to ensure their privacy and safety.

Theme One: Teens' Use of Technology was Regulated by Outside Entities (Including Parents)

Almost without exception, the adolescents who participated in this study said their parents were involved in the decisions about how and when to use technology, especially SNSs. This input was especially prevalent when the adolescents decided to set up a FaceBook site. Parents generally were not against the idea of their children using an SNS; they were just concerned about the safety issues involved. For example, Mandy said, *"I wasn't supposed to get it [FaceBook] but I like got it and anyways...and then my mom saw it and she said that it was a cleaner page than she thought it would be and she said it was fine."*

Caleb experienced much the same response from his parents:

When I first got it I told my dad and then and then pretty much... like every week he would just look at it. I think he was more just curious than he was trying to

make sure I wasn't doing anything wrong and then my sister just got it like a half year ago and she didn't tell my parents and they freaked out about that.

Seven of my subjects indicated that this parental involvement continued even after their site had been set up. As an example of this, Caleb reported:

But they... if they see me upstairs on the computer there's kind of this unwritten rule that if they come up behind me I can't exit out of anything. They pretty much look through my page if I'm on which isn't a big deal really.

Brittany's parents managed her use of FaceBook in a similar fashion:

Well every time I am on FaceBook they ask me to make sure I know these people. And then they ask me, if I'm talking to somebody, they ask me who it is and if they don't know them then they ask me how I know them.

However, sometimes this parental involvement was more in word than in deed. For example, Alexa reported, *"my mom knows my password and all that stuff, she can check it, but I don't think she does."*

In addition to monitoring content, the parents of these teens placed limits on their children's use of technology. In the home environment, use of the phone and internet was primarily regulated so it did not interfere with schoolwork and family obligations. The rules at Mandy's house were straight forward:

My parents wouldn't let us... like it's one thing if somebody calls and there's an actual reason for them to be calling but if someone calls for no reason we're not supposed to talk and we can't text when we eat supper or lunch. Like when I'm

doing nothing she's [mom] fine with me being on it [FaceBook] but if like I have friends over then she gets mad.

Alexa's parents were not quite as strict in their regulation of her use of texting as she reported, *"sometimes my mom will take my phone away if I need to study cause it gets in the way – I'll say OK only a couple more texts."*

School was another place where limitations were placed on the use of technology. Rather than the desire to follow the rules, the fear of losing one's phone seems to have been the most significant motivating factor for following the stated policy in this environment. The degree of compliance varied between participants. Brittany reported she did not take her phone to school saying, *"I haven't got to bring it to school yet but I'm probably...I don't even know if I'm going to bring it because people could take it or something."* Mandy sometimes took her phone with her but reported *"I never use it during school only like one of my friends like did and all my other friends were worried that they like would get it taken away and their parents would get mad at them."*

Sarah was not as compliant with the rules as were the others, but she did comment on the importance of being careful:

There is more of the texting and stuff, but you never see someone just outright pulling out their phone and talking unless it is an outright emergency since they don't let us use the phones in school. During like, in between classes and stuff they will do it.

As two of my informants discovered, using technology in church was also not allowed. In this environment, however, parents rather than clergy were typically the rule enforcers. For example, Brittany said:

Um if I am in church or if I am somewhere where there are other people that I know. I'm supposed to turn on silent and don't answer it or turn it off or leave it in the car or something.

Kayla related a similar experience:

Well like one time in church I got a text, this was just one time though! I was getting a text and my dad got mad at me and he was like "put the phone away!" so I put the phone away [laughs] and I've never...that's the only time I've done it.

For the most part, the teens complied with the restrictions placed on their use of technology by their parents and school officials. However, when those requests did not seem reasonable, they were circumvented. Sarah and Lindsay discussed their use of technology at times when it was not a sanctioned activity. *"If I need to in class, like if we aren't doing anything, I'll just use it [the cell phone] under my desk."* *"Like when I'm at work, if I'm just standing there, I text all the time."*

*Theme Two: Teens Chose Specific Technologies to Use
Based on the Perceived Degree of Safety*

Parental concerns were mentioned previously as a factor in the regulation teens' use of technology. However, these adolescents demonstrated a sense of personal awareness about the potential dangers of cyberspace and the need to protect their private information. This was especially evident in the choices they made about which SNS to use. For Mandy, the choice was not difficult:

I've looked at Xanga like, not for me getting it but like my friend, my friend's friend, like she's older and she had it and we were just looking at all of her pages and stuff; and I never wanted MySpace because it always sounded dangerous like compared to FaceBook.

Alexa also reported the ease with which she chose her SNS:

No [I never looked at the other sites] cause I've heard FaceBook was the safest.

Um like you can set it as...just your friends can see your page and no one can search you and you can set up for who sees what stuff, and all your private stuff.

Theme Three: Teens Controlled the Privacy of Their Communications by Controlling the Content

These teens also understood the importance of keeping the information on their SNS sites private. FaceBook allows the user to set privacy levels for their site, thereby limiting the access that non-friends have to the content. All of my informants had medium to high-level privacy settings, which allowed them to control who had access to their site. All SNS users also reported that they closely controlled the type of information they included on their profile pages. For Alexa, privacy was an important consideration:

I didn't put like a lot of information about me. I mean I have where I go to school, my religious views, and stuff like that and that's pretty much it. And my birthday and cell phone and my e-mail but I only did that because only my friends can see it.

Chelsey reported very similar beliefs:

I don't have that like religion or political views or my address, some people have their cell phone on there. No I don't have my cell phone or address, that's creepy even though like no one can really see your site I still don't want like a creeper....

Finally, Lindsay acknowledged other potentially dangerous content sometimes seen on FaceBook sites:

Like people don't know my life story from my FaceBook. Some people just put their whole life on there; like they have a picture of every waking moment. I don't have anything exciting in my life that I need to like post it on FaceBook for everyone to...no cause people who are my friends, I'll text them and tell them. I don't have like 100 pictures of myself on there I don't have me like chugging a beer on mine.

*Theme Four: Teens Controlled Access to Their Communications
in Order to Protect Their Privacy*

The way in which access to someone is gained on an SNS, at least for those who have medium to high privacy settings, is to send a friend request. Friend requests are usually initiated after seeing someone listed as a friend on a mutual friend's page, although sometimes FaceBook will suggest others who are in the same network as possible friends. When a user receives a friend request, they have the option to accept it, (thereby giving the requestor access to their site), reject it, or ignore it. In this study, all participants stated that they accepted most friend requests carte blanche; however, there were times when a friend request would be declined. For Sarah, a critical factor in friend selection was how nice the person was:

They're more like people who go to our school or my cousins or people I've met or...in activities and I talk to sometimes, but mostly it's based on if I know them, um what we know each other from and if they are just a nice person in general and if I like them, if they haven't been too nasty to me.

Brittany had a better-defined set of rules she used when selecting friends:

Yah some of them [FaceBook friends] are people that like...whatever sports I am in I usually add those people like if I am in track something then I would add some of the people in track. Yah but um if I get along with them and I know them and stuff and if they're nice then I guess then I'll just kind of send them a friend request. Sometimes you just need somebody to talk to...like there's nobody on line, but there's ten people that you don't really know as good but you can get to know them better, so then you just talk to those people, at least I do.

As further demonstration of their concerns regarding safety, about half of the teens defined the specific criteria they had for when they would refuse a friend request.

For example, Zack said:

And then if I talk to them on a daily basis or go to school with them then I will add them, but like people older than me that go to our school but I have absolutely no idea who they are, then I turn them down.

Caleb also had rules for when he would decline a friend request:

Yah I've rejected a lot of people because...well I went to a Bible camp where I probably got like 50 friends just there and then...well 50 friends from each Bible camp I was at this summer, but then friends of theirs that I don't even know

would add me; and I reject those because that doesn't make sense to me. But then pretty much anybody from [name of school] [I add] cause that just makes sense to me, if I recognize the name or something like that. I don't know, there's some people that...like there's been a couple sixth or seventh graders that have added me and that doesn't seem right to me, yah.

In sum, the teenagers in this study were aware of the dangers inherent in cyberspace. They controlled the amount and type of information on their sites, as well as who had access to the information. They also understood the efforts of others to monitor their use of technology; however, when they felt the regulations were too strict, they found a way to circumvent the rules.

Assertions

The research question was *"How and why does the form, function, and purpose of teenagers' communication vary across different modes of communication."* Four assertions emerged from the categories and themes that help to answer this question. The first is that adolescents are skilled communicators who use different modes of communication to communicate different functions with different partners. The second assertion is that adolescents are skilled communicators who are aware of the nuances of communication in a written genre. The third assertion made is that adolescents are aware of the potential dangers inherent in using these modes and they know how to protect themselves from said dangers. The final assertion is that adolescents may resist the attempts of outsiders to control their communications.

Development of the assertions was the final stage of open coding. Following its completion, the codes were further refined during axial coding in order to identify the central phenomenon, causal conditions, context, intervening conditions, strategies, and context. The data will be presented according to the above features in the next section.

Central Phenomenon

The central phenomenon in grounded theory is the code or concept at the center of the paradigm. It is the concept that cements all the other codes together. In this study, the adolescents' choice and use of alternative modes of communication was the central phenomenon; it was the core idea around which all other codes could be explained and integrated.

Causal Conditions

Four types of causal conditions, related to the central phenomenon, emerged from the data. The first causal condition was that the participants needed to communicate with friends, acquaintances, and in some cases strangers. This was certainly the case for the teens in this study. Their communication partners included friends, grandparents, siblings, parents, and in one case, a teacher.

The second causal condition was that the participants needed these communications to serve a variety of purposes and convey different types of information. They used technology for three main purposes. The first was to achieve and maintain social closeness as is illustrated by Lindsay's comment, "*well, I have to text my friends, I can't like not talk to them.*" The second reason was that it could be used to enlarge their social circle. Caleb used FaceBook to meet this purpose, "*yah, I did one [a*

FaceBook group] *for my friends at Bible camp.*” Finally, they used technology to share information with each other. Alexa’s comment *“you gotta check [FaceBook updates], you gotta know”* is an example of this final communicative function.

The third causal condition was the need for the adolescents to communicate in different environments. As has been previously mentioned, these teens were busy and needed their technology to be portable so they could have access at home, work, and school. Lindsay and Alexa both commented on this need. *“I have to have mine [cell phone] in the car and at work. I need it.” “I like never don’t have it [cell phone].”*

Finally, the fourth causal condition was that, because of the aforementioned “busyness,” the adolescents needed to be able to multi-task during communicative activities. This concept was represented in the data by comments such as Zack’s statement *“I always text when I do homework,”* or Lindsay’s *“like when I’m at work, I text like always.”*

Context

The context refers to factors that interact with the central phenomenon to influence the strategies (Creswell, 1998; Strauss & Corbin, 1998). The context within which these adolescents chose their mode of their communication was the digital world. More specifically, the context was comprised of all the options available for communication that were researched in this study, namely text messaging, social networking, e-mailing, and instant messaging. The context also included all the options available within those modes (e.g., wall-to-wall, status updates, and group texts). One

caveat to the context that must be considered because of its impact on pragmatics and semantics is that the product of all of the modes studied was written not spoken.

Intervening Conditions

Intervening conditions are those factors that have a mediating effect on the strategies used in response to the phenomenon (Creswell, 1998; Strauss & Corbin, 1998). For these teenagers, the intervening conditions included the influence of regulators (e.g., parents, the school), their own concerns about data privacy and safety, their personal preferences related to communication mode, and the interpersonal consequences of non-oral communication.

The first intervening condition was the influence of regulators (i.e., parents, school officials) on the teens' use of technology. The primary regulators were parents, and they maintained control in several ways. Initially, they were the ones who allowed their children to have access to the internet or to a cell phone and texting. Often their decision to allow access was related to safety considerations. For example, Lindsay said, *"yah my mom saw my sister's [FaceBook] page and it was no big deal so I got one."* In other cases, the access may have been granted to help the parent stay in touch with their teen as was reported by Mandy, *"when I first got my phone I went way over on minutes, my mom was ticked. Now I have a plan, but I have to always answer my parent's texts."*

The other frequently mentioned regulator, officials at school, controlled the teens' access to technology during school hours. Typical policies at school allowed for no use of technology during school hours. Lindsay addressed this concern when she

said, *"yah we can't have them there or else they take them."* This was not always the case, as Chelsey reported some schools allowed cell phones to be used between classes, *"we can, sometimes [use a cell phone], like if you aren't in class or something."*

The second intervening condition was the personal concerns the adolescents had about their own safety and privacy. These young people were aware of the inherent dangers of cyberspace. Some of the recognized dangers come from the modes themselves. This awareness was evident in Lindsay's comment, *"I never like wanted to use MySpace, it isn't safe and I didn't want all those creepers to see me."* However, some of the dangers came from the communication options available within a particular mode. Concerns about these dangers were found in comments such as Chelsey's that *"I quit using those [applications within FaceBook] cuz you never know who sees them and it could be like some creepy person."*

The third intervening condition was the personal preferences the teens had about which modes to use. As mentioned earlier, all but two of the 13 participants in this study used texting and all but three used FaceBook as their primary modes of non-verbal communication. These modes were highly preferred over other modes like e-mail. Kyle was clear in his preferences when he said, *"yah, I pretty much just text, I don't e-mail at all, too slow."*

Finally, the fourth intervening condition was their understanding of the interpersonal consequences of non-oral communication. This intervening condition was comprised of the teens' comments about the changes that can happen when you cannot see and/or hear the person to whom you are talking. The effects of this

intervening condition were especially evident in the strategies and consequences that will be discussed in the next sections.

Strategies

In grounded theory, the strategies are the actions taken in response to the central phenomenon, the intervening conditions, and the context (Creswell, 1998; Strauss & Corbin, 1998). The first strategy identified in this study was that the loss of face-to-face contact inherent in these modes of communication meant that teens needed to remember the importance of making sure the intended message was the one that was received. Brittany demonstrated her understanding of this idea when she said, *"sometimes you tell them [friends] something and they get mad cuz they can't tell what you really mean."*

The second strategy was that the teens chose what they felt was the safest mode from within their options. This safety factor included their personal safety and the safety and/or privacy of the message. This strategy required conscientious effort on the part of the teens. The first step towards meeting this strategy was to evaluate all the options available (i.e., texting, email, instant messaging, and social networking). In the case of social networking, the teens also selected what they perceived to be the safest option within that milieu, namely, FaceBook. The second step was to select the best options from within the mode, for example, after choosing FaceBook they might choose to use the embedded instant messaging feature to protect the privacy of their communication. Alexa commented on her use of this feature when she said, *"but if you*

want to like have a real conversation you can go to a private message and just talk there."

The third strategy was that the teens monitored the choices their peers made and used those as a guide for their own communicative endeavors. This strategy was evidenced by comments such as Mandy's that *"well yah, my friend had one [a FaceBook site], so I just thought I might as well too."* The influence of friends was as important when making choices about what not to use as it was when making choices about what to use. This was especially evident in the participant's comments about instant messaging. For example, Chelsey said, *"I don't use instant messenger anymore cause I think that's out now. Like no one uses IM anymore since like back in junior high or ninth grade."*

The fourth strategy was that the mode needed to match the communicative purpose. This was observed in terms of both the function and the audience. Nick's comment that *"if you only have one question to ask somebody it's easier to just type in the question rather than call them"* illustrated his understanding of this strategy. Mandy offered a more complete example of the effects of this strategy when she said:

Um [I prefer] texting just so I can talk to more people...yah group texting, because then you could ask people questions without like, I don't know, you can ask like five people if they were going to the game instead of calling five different people.

The final strategy was that the adolescents in this study evaluated the requests of parents and other regulators (i.e., school officials) when they made decisions about

when and where they would use their technology. The results of their implementation of this strategy will be discussed in the next section.

Consequences

The consequences in grounded theory are the results of the participants' use of the strategies, whether intended or not (Creswell, 1998; Strauss & Corbin, 1998). As referenced previously, the teens in this study evaluated the requests of their parents and school officials as they related to the controls placed on the use of technology. Although these restrictions placed limits on the teens' access to a highly preferred activity, for the most part, they seemed to accept the rules at face value. Six study participants even agreed that these restrictions were appropriate. For example, Tony said *"like during a lecture. Someone is telling you something important, if you're in class or something you shouldn't really have a cell phone."* Sarah also offered her opinion on this topic by stating, *"if I find it disrespectful to use it at that time then I won't."*

The adolescents were remarkably adept at circumventing attempts to control their communicative behavior when they felt the rules were unfair. They indicated they felt no remorse for breaking the rules when they felt their need to communicate was more important than the regulations against it. Almost all reported that they had acquired a skill level that permitted them to communicate with the outside world without ever being caught. Alexa reported that she could *"use it in my pocket and type away."* Zack extended that idea when he commented on his and his friends' use of technology in forbidden environments, *"oh yah, all my friends have their phones in class"*

texting, texting down here [motions to lap] just trying to get by with it." Lindsay was, perhaps, the most proficient text messenger. She comments that she could:

Use the number keys cause I'm so used to it and I can do it in my pocket so I just kinda like (demonstrates use of number pad) yah – I do it at work like in my apron – I have to text! [laughs] I've got skills!

The second consequence was that the loss of face-to-face contact often resulted in changes in the intended or perceived message. This consequence was manifested by the participants' cognizance that they needed to be careful that a message sent was not interpreted incorrectly. Mandy understood the need for diligence in this area:

Well like at the end of your name if there's like a heart and then your name, people like take it the wrong way sometimes. Or if it's like "I don't care" they take it like you "really don't care and there's really no point to it," instead of "I don't care what we do let's just do something."

It was also illustrated by their knowledge that they could use technology to communicate messages that would be difficult or uncomfortable to convey in person.

For example, Brittany said:

Some people are just different, like they...sometimes they are mean on the computer because the person can't like say something back to them really right away; so that's different cause when you're on the computer you can't really react to it.

The third consequence was that the adolescents maximized their safety in digital environments. This was managed effectively by the teens in this study, as was

mentioned in the previous section, by only using sites they felt were safe. All of the teens in this study reported that once they had decided on a site (i.e., FaceBook) they set their privacy settings to either medium or high. Privacy and safety were also managed by controlling who had access to their page through limited friend request acceptance. Alexa had criteria she used when deciding which friend requests to accept, namely that *"I don't accept everybody. I mean like if they are on the volleyball team I might, but if its just someone, like somebody you wouldn't say "hey" to, then I don't."*

Finally, they controlled safety by limiting the amount of personal information placed on the FaceBook sites. This was evidenced by comments such as Chelsey's that *"I don't have that like religion or political views or my address, some people have their cell phone on there."*

An Emerging Theory

The central phenomenon identified during the axial coding of the data from this study was the adolescents' choice and use of alternative modes of communication. Identification of that central phenomenon together with a discussion of the related aspects of the axial coding paradigm (i.e., causal conditions, context, intervening conditions, strategies, and context) has led me to an emerging theory: adolescents are active communicators who purposefully choose their modes of communication and control how, when, and with whom they use each mode.

The teens in this study varied the mode they chose based on who and how large their intended audience was. Nearly all the participants directly commented on how they chose one mode if they were talking to a friend, but chose a different mode if the

conversational partner was a parent (or older individual.) The teens also reported the importance of being able to vary the mode by number of communication partners, for example, they could choose group texting when they needed to send a message to more than one person but choose IM when they only had one communication partner.

These young people also varied their choice of mode depending on what technology they had available for use. For example, although texting could be used in all environments, use of other modes, such as IM and FaceBook, was reserved for when they had access to a computer.

The participants in this study also varied their choice of mode by what they personally preferred to use. The teens were all asked what their favorite communication was, and all were able to answer the question without hesitation. As has been stated previously, in most cases, the preferred modes were texting and FaceBook.

One final aspect about the active nature of these teens communication style that should be noted is that they were savvy communicators. They saw themselves as masters of their communication choices. They were aware of the need for safety and of the need to control the privacy of both their personal information and of their communications. At the same time, they monitored the influence of others on their communicative choices. When they saw these attempts as legitimate, they complied; when they did not view these attempts to regulate their behavior as necessary, they found a way to circumvent the rules.

The next chapter will provide an integration of the findings from this study with the current literature. It will also present the researcher's conclusions, recommendations for future research, and statement of the implications of the study and the author's reflections on the research process.

CHAPTER V

DISCUSSION, CONCLUSIONS, RECOMMENDATIONS, IMPLICATIONS, AND REFLECTIONS

The purpose of this study was to examine how adolescents used new modes to communicate. Of specific interest was the decisions they made about which mode to chose with any given communication partner and/or to complete any specific communication task. What this study revealed was that the participants were active communicators who made choices about with whom they wanted or needed to communicate and, subsequently, what the best way was to carry out those communicative acts.

The intent of this final chapter is multifold. In the first section, the findings of the current study are integrated with the current research to demonstrate the extent to which they support the literature, and thereby add support to, or extend my emerging theory. In the remaining sections of the chapter conclusions, recommendations for future research, and a statement of the implications of the study will be presented. The chapter will conclude with the author's reflections on the research process.

Summary of Findings in Relation To Current Literature

The purpose of this section is to address the research question and explore the emerging theory by integrating what was learned from the study with current research on the topic. The data reported in current research seem to be presented within

“categories” and thus are more aligned with the “categories” section of the open coding concept map, (see Figure 2); therefore, this section will be organized around the three categories identified during the open coding process.

Category I: Intra-Personal

The results reported in the previous chapter indicate that choices these teens made are similar in many respects to the choices of their peers on a national level, at least as has been reported in the most recent research. The most recent statistics released by Pew research (Raine, 2009) suggested that upwards of 71 percent of teens owned cell phones in 2008, an increase from 63 percent in 2006. The teens in the sample used by Pew research (Raine, 2009) rated their choices of communication modes as follows:

- Sending text messages daily
- Talking on a cell phone
- Talking on a landline daily
- Spending time with the person
- Sending messages via an SNS
- Sending an instant message
- Sending an e-mail

The subjects in the current study used the same modes, but in a different order.

For them, the order was as follows:

- Sending text messages daily
- Talking on a cell phone
- Sending messages via SNS
- Writing on someone’s FaceBook Wall
- Spending time with the person
- Sending an e-mail

Texting

Both the data from Pew research (Lenhart et al., 2007) and from the participants in this study were consistent with a study by the Nielsen Company (2009) which reported that teens spend almost as much time talking as they do texting, but that they prefer texting because of the opportunities for multitasking and privacy it provides. Nearly all the subjects in this study made some statement related to the ability to multitask when texting or the privacy it affords their communication.

It should also be noted that while teens said they loved to text, it is not the mode they chose for all communication partners. Goodman (2007) found that texting was not a mode teens used to communicate with their parents or other adults, instead it was a mode reserved for staying in touch with friends, gossiping about peers, and socializing with others their same age. The adolescents in the current study indicated that they follow the same selection criterion but their reasoning was not what might be expected. They did not refrain from sending texts to adults because it was a mode reserved for their peers, they did not send texts to adults because they believed that most adults have no idea how to use this mode of communication.

Telephone Conversations

Pew research (Lenhart et al., 2007) indicated that, at least for their sample, talking on the telephone (cell or landline) was the next most preferred method of communication. In this study, none of the teens referenced using a landline at all. Several, however, discussed their use of a cell phone and the literature supports this

preference. Baron (2005) reported that 40 percent of teens said a cell phone was all they needed.

Social Networking Sites (FaceBook)

Lampe et al. (2006) argued that one of the most beneficial features of SNSs is that they allow others to track members of their social community. Almost all the teens I interviewed indicated a preference for social networking; and most of them viewed it more as a way to learn about other people than to let others learn about them. Of course, the latter has to happen before the former is possible.

Eberhardt (2007) stated that SNS sites foster a sense of community among their users and that they may even foster a sense of activism in the people who join them. This was certainly the case with the teens in this study; several of whom specifically referenced the groups, both local and non-local that they had joined. Although none of the participants was old enough to vote, several commented that they were participating in the political process by joining the FaceBook site of their favorite candidate. Lampe et al. (2006) argued that SNS sites allow users to find others online with whom they might wish to associate offline. While none of the participants in this study specifically referenced this, it is certainly within the realm of possibility since most had joined groups not comprised of people they knew.

Instant Messaging and E-mail

These were the least preferred modes as ranked by the participants in the current study. The stand-alone version of instant messaging was something they only used when they were younger (e.g., sixth grade) and these teens argued, as is supported

by Subrahmanyam et al. (2006), that e-mail was just too slow to be a preferred method of communication. As has been reported previously, they reported a preference for the instant messaging feature incorporated into FaceBook because of the opportunities for private interaction it afforded.

Category II: Inter-Personal

Communication, by definition, has both a speaker (i.e., writer) and a listener (i.e., reader). When the communication mode transitions from oral to written, the interaction becomes more complex. Williams (2008) stated that digital media makes it difficult or impossible for the speaker (i.e., writer) to monitor the expressions and comprehension of the listener (i.e., reader). In spite of the potentially negative side effects of using these modes of communication, Valkenburg and Peter (2007) reported that 30 percent of their subjects found the internet more effective when communicating intimate information. This was echoed by my study participants who reported that some things were just easier to talk about when not face-to-face with their communication partner. There has even been some worry (Subrahmanyam & Greenfield, 2008) that adolescents are beginning to have less interest in face-to-face interactions because it is so easy to communicate digitally.

Several of the teens in the current study referenced what boyd (2008) called social convergence. This phenomenon happens when the different social contexts or circles that we are a part of collapse into each other. In an environment such as FaceBook, content that is posted as a comment for a high school friend may well be read by a work partner. This blurring of social roles further clouds the issue of privacy

since "information is not private because no one knows it; it is private because the knowing is controlled" (boyd, 2008, p. 18). Finally, it is important to note, as did Gross and Acquisti (2005), that there are several definitions of privacy. Some information we only want to share with friends because it is private, but there is also some information we only want to share with strangers, because it is private. It is important to have a venue in which to express both.

One of the questions asked to every participant in this study was "how many FaceBook friends do you have?" This question was followed by one asking if there were members of that list with whom they did not associate on a daily/weekly/monthly basis. While this did not emerge as a major theme in the study, all participants indicated that they did include people in their "friend" list who were not a part of their offline social circle. This new working definition of "friend" opens an entirely new avenue for research. What is a friend? Friends on FaceBook are certainly not always personal friends. Stuart (2007) discussed only a few of the issues that may arise when a large circle of "friends" is allowed access to a SNS site. When a FaceBook user accepts a friend request, they also gain access to all of the friends of the new "friend," at least to some extent. Take, for example, a professor who only allows students who have graduated from the program to become his or her FaceBook friend. It is conceivable, and even likely, that one of those former students will have as a friend someone who is still a student of the professor. The professor now has a situation where some of his or her current students have access to information on his or her profile page or, at the very least, to view status updates. Power differentials are easily created in this scenario,

since the professor also may have the ability to view some information on the current students' profile page. One of the newest FaceBook privacy settings makes it easier to control information as users can now choose which information each friend (or friend of a friend) can view. Since we all have multiple public and private "faces," this seems like a reasonable way to control the aforementioned boundary issues in cyberspace (Richardson, 2007).

Category III: Extra-Personal

The two primary extra-personal factors that affected these teens choice of communication modality were those related to a regulating body, typically a parent, and those related to safety or privacy issues. Both of these considerations have been well documented in the literature.

Outside Controls

Nielson Company (2009) found that 62 percent of teens who use mobile phones say their parents have placed some restrictions on their use of that media and 93 percent of teens say that their school has. Subrahmanyam and Greenfield (2008) reported that only a little over half of parents actually look at their children's SNS sites and Pew research (Lenhart et al., 2007) reported that:

- 54 percent of parents report installing some sort of filter
- 64 percent say they set limits on the children's online time
- 73 percent say the household computer is located in a central location
- 62 percent say they check the online activity of their children (only 33 percent believe they are really being monitored)
- 81 percent of parents believe their children are not careful enough when they are online
- 65 percent of parents and 64 percent of teens say that teens do things online that they would not want their parents to know about

- Majority of parents say they are more concerned about the media content than they are about the amount of time their children spend online.

The teens in this study all said that there were times their parents would not let them use the computer or be on their cell phones including dinnertime, when it was nice outside, or when they should be doing homework. There was no apparent resistance to this rule, suggesting that the adolescents understood the rationale for it.

It may be that certain parenting styles are more conducive to producing compliance in this area. Rosen, Cheever, and Carrier (2008) studied the relationship between parenting style and limit setting in digital environments. The authors defined authoritative parents as those who demonstrated high amounts of both control and warmth when interacting with their children. Authoritarian parents also demonstrated high levels of control but had low levels of warmth. Indulgent parents demonstrated low levels of control and high levels of warmth. Finally, neglectful parents were rated low in both amount of control and warmth.

According to Rosen, Cheever, and Carrier (2008), authoritative parents were more likely to place limits and on their children's use of technology and then have those limits followed than were authoritarian, indulgent, or neglectful. The children of authoritative parents demonstrated fewer dangerous online activities than did the children from any other group. Authoritative parents typically grant their children more autonomy over personal issues. When dealing with moral, ethical, or safety concerns, however, they do not grant open permission or forbid without explanation; rather they explain the rationale behind their decisions in order to help their children understand

the effects of the choices they make (Smetana, 1995). Perhaps it was for this reason that this type of parent had the most success. If adolescence is a time when children learn to separate themselves from the adults in their lives (i.e., wanting to assert more control), then teaching them the reasons for caution may well be more effective than iron-fisted control, which sets up the scenario for outright defiance. While it was beyond the scope of this study to investigate my subjects' parent's parenting style, it appears likely, given the participant's comments, that these individuals were using an authoritative approach to parenting.

Safety/Privacy

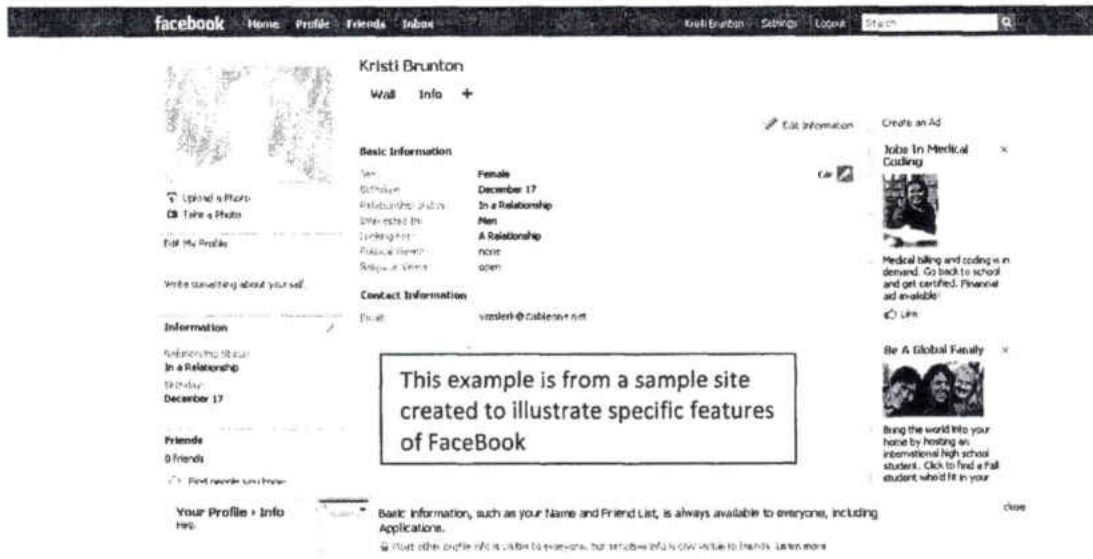
Concerns about safety and privacy were mentioned by all participants in this study, both in reference to the concerns of their parents and to the concerns they themselves had. These young people controlled what they posted on their sites. This is consistent with the findings of Ross et al. (2009), which reported that people carefully chose what aspects of FaceBook they used and that they based their choices on their need for privacy and how permanent the choice seemed. Generally speaking, wall postings were viewed as less permanent than photos because a posting made to someone's wall can be deleted more quickly than a photo, and photos may well have been copied to someone else's page. Pew research (Lenhart et al., 2007) found that, in general, teens restricted their online postings and blocked messages from those they wished to avoid. Finally, in further support of the idea that teens are skilled utilizing the privacy and/or safety provisions already available on most SNSs, Williams and Merten (2008) found that:

- 39 percent did not list religious affiliation
- 17 percent did not list sexual preferences
- 50 percent contained some sexual content or language
- 43 percent listed their full name
- 10 percent listed their phone number
- 11 percent listed their place of employment
- 20 percent listed online contact information (e-mail)

This data is partially consistent with what the teens in this study reported.

Figure 4 represents the information page in FaceBook where users can choose which personal data they will include in their SNS profile. The participants in this study were split on the listing of religious affiliation. In terms of sexual preferences, they reported either that they were looking for a member of the opposite sex or that they were in a relationship. None of the sites I previewed during data collection contained any sexual content or language. Full names were always listed; however, none referenced a phone number, e-mail, or place of employment.

Figure 4. Screen shot of FaceBook information.



In addition to controlling what they posted online, the adolescents in this study also set their privacy settings to the highest or close to the highest one available. In FaceBook, by default you can view the profile of anyone in your network, unless that person has set high privacy standards (boyd & Ellison, 2008). This is further evidence that these adolescents were proactive in the measures they took to protect their privacy and safety.

Conclusions

Communication is not a passive activity. Who is my intended partner; what message am I trying to convey; what options do I have available to me from which to choose; and what extraneous variables might affect my ability to transfer my intended message? These are but a few of the decisions we make every time we initiate a communication with another person. For example if trying to convey the message to a spouse that he or she needs to pick up several items at the store before driving home, the intended partner (i.e., spouse) would already have been determined, as would the message or communicative intention (i.e., the transfer of information). If the conveyor of the message has not left the office, the options available are likely sending an e-mail, calling on an office phone, or calling or texting from a cell phone. The choice made may be influenced by such factors as, "do I have cell service," "does he or she have cell service," "am I allowed to use my work phone for personal calls," and "am I able to place a call now or would a text message be better." The teens interviewed for this study made these kinds of choices every day. In addition to the modes listed above,

they also had social networking sites (SNSs) and instant messaging (IM) in their communication arsenals.

As was discussed in the literature review, the communication skills develop from birth until somewhere between the ages of 18-24. The language skills that develop latest are the ones that allow us to handle complex communicative interactions in order to interact successfully with all our communication partners in all the many communicative environments we frequent. In our everyday experiences, we use gestures, vocalizations, facial expressions, nonverbal body language, speech, and the written mode to communicate. These modes of communication assist us in communicating our wants and needs, establishing social closeness with others, transferring information between each other, and making connections. Recent advances in technology have increased the modes available for communicative purposes. Cell phones with text messaging, internet social networking sites, e-mail, and instant messaging offer the communicator many ways in which to fulfill their communicative functions without using verbal speech.

One of the benefits of qualitative research is that it allows the researcher to “hear” what his or her subjects are saying without any preconceived filters. The limited research available today on the topic of digital communication is mainly from a quantitative perspective. While this provides valuable information about many groups of people, it is unable to provide in depth information about any one specific person. For the purposes of this study, it was important to delve into the personal motivations behind the teens’ choice of communication modality.

At the initiation of this research, I intended to discover a “secret” adolescent language, one complete with a vocabulary that only they could decode. I thought their texts, e-mails, and SNS postings would contain acronyms I would not understand. This is not what happened. These teens did not use the acronyms so common in the past such as lol (laugh out loud), idk (I don’t know), oic, (oh I see) in their communications. Instead, they controlled their communication by restricting access to it. They were selective in who they chose as friends, they were selective about the content they placed on their SNS sites, and they used texting over phone conversations since the latter would eliminate privacy from at least half the conversation.

Although several authors cited in the literature review discussed gender differences in the use of digital communication, this was not revealed in the analysis of the data from this study, at least in terms of the modes used. It did seem to be, however, that the girls in the study indicated a higher overall usage (more texts, more time online) than did the boys. Whether this was related to gender or the overall outgoingness of the subjects cannot be determined without future research.

Finally, although not directly tied to this study, there is some evidence in the literature that the issue of data privacy needs to be addressed. Lampe et al. (2006) suggested that teens who use SNSs strongly believed that their pages were viewed by their peers and not by adults; my research would corroborate this fact. The adolescents who participated in this study believed that adults were not accessing their “private” information. They believed that their texts and their SNS pages were personal. However, one only needs to turn on the news to discover that this is not the case.

Employers and school officials routinely view the SNS pages of their students or (potential) employees and disciplinary decisions are often made based on what they see on those pages. Text messages, and e-mails for that matter, are also in the public domain. Even when deleted, the service provider is usually able to retrieve at least a portion of the material. Resolution of the ethical and legal considerations related to data privacy is needed so that digital communicators understand the implications of their postings.

Recommendations

Based on the findings in this study, several recommendations are warranted. The first group of recommendations is related to the need for additional research. The second has to do with clinical application of the results from the current research.

Need for Future Research

The first recommendation is that given the interpersonal (i.e., pragmatic) repercussions of the shift to a more written mode of communication and away from the verbal mode, additional research is needed to explore and explain how these changes affect communication in general. I asked the adolescents I interviewed about the rules for technology use when in a group. Some were able to define those rules, but as use of these modes continues to become more prevalent, additional research is needed in the area of group dynamics. More than one participant in this study indicated there were some things that were easier to talk about when you were not face-to-face and that it was easier to be “mean” to people when you did not have to see their faces. This suggests to me that research is needed to explore how this move away from face-to-

face interactions will affect our ability to communicate with each other in a polite and civil manner.

The second recommendation is that research on adolescents' use of technology be timely and ongoing. A comparison of the Pew research data (Raine, 2009) to that of the participants in the current study revealed differences in their preferences for and use of technology. For example, the teens in the Pew research study indicated that talking on a landline phone was a frequently used mode of communication, while the teens in the current study did not report frequent use of this mode. It may be that the differences between the two groups are related to demographics, but it may also be that the difference is due to rapidly changing advances and changes in technology.

The third recommendation is that since all the participants in the current study were white, additional research be conducted to expand the current study to include individuals of color. This research would establish whether there are differences in the preferences and use of technology for communication in that demographic group.

Finally, the fourth recommendation is that additional research be conducted to assess the role of sex and/or gender in the use of technology. Previously cited research (Fogel & Nehmad, 2009; Lenhart, et al., 2007; Raacke and Bonds-Raacke 2007; Subrahmanyam, Smahel, and Greenfield, 2006) suggested that males and females communicate differently in this digital medium. The results of the current study did not reveal this, so further study of the issue is needed to resolve this conflict.

Clinical Applications

The first clinical recommendation is related to the implementation of these modes with individuals who do not use verbal means as their primary mode of communication. Since it appears that teens regulate access to their communications by controlling access to the technology itself rather than through use of a secret vocabulary, there should be no hesitation on the part of speech-language pathologists (or other professionals) to introduce and implement these modes of communication with their clients. Even though vocabulary selection is a critical consideration when designing and implementing AAC systems, it does not appear to be as important when the tool introduced is a digital medium rather than a speech generating AAC device.

The second clinical recommendation is related to the understanding of professionals who work with the aforementioned population. They must have an in-depth knowledge about how to use these modes (i.e., text messaging and SNS) so that they can teach their clients how to use the technology in meaningful ways. It is therefore recommended that a training manual be developed, one that explains how to use each mode generally as well as how to use the specific features within each mode. Given the rate with which technology changes, this training manual will need to be updated on a regular basis.

Finally, as professionals who work with adolescents, we need to have as much information as possible about how they think, learn, and communicate. To be an effective educator, it is necessary to meet the learner where they are. In the case of technology, this means understanding what the students' preferences are, especially as

they relate to communication. For example, if an instructor uses e-mail to communicate with students, but none of the intended recipients use e-mail (as was suggested by the participants in this study), successful transmission of the intended message will not occur. Ongoing research related to the communicative preferences of teens will help prevent the previously described scenario.

Implications

Because I am a speech-language pathologist and the educator of future speech-language pathologists, I believe the implications from this study, and those like it, are enormous. On a weekly basis, I interact, and teach others to interact, with individuals who are nonverbal. As someone who works with AAC, I struggle to find the best device and the right vocabulary set, so that my clients can increase their chances of integrating themselves into the world of their typically developing peers. What has become apparent from this research is that those peers are moving away from a purely verbal interaction system and moving towards a system that places a heavier emphasis on the written form of communication. Additionally, as stated earlier and in contradiction to what I expected to learn from this study, the teens I interviewed did not cite the existence of a secret vocabulary. This may remove some of the difficulty in setting up communicative opportunities for adolescents who are nonverbal. If, in fact, the form of the communication is controlled by access alone, then speech-language pathologists and special educators should be able, with limited expenditure of resources (time or money) facilitate meaningful use of these environments for students who do not use verbal speech for communication. For example, the speech-language pathologist might

assist the student in setting up a FaceBook site. Once the site is established, the student could be assisted in locating FaceBook friends and/or finding FaceBook groups to join. In all likelihood, successful use of this medium would require ongoing support from the speech-language pathologist or other adult since many individuals in the target population have concomitant motor disabilities that may prevent independent use of the technology. The time required on the part of the speech-language pathologist or their proxy would likely be no more than the time required for implementation and adaptation of other AAC systems and may show more rapid success rates. This, of course, in no way negates the need for other AAC systems; it simply represents how this technology could be integrated into the overall communication systems of people who are nonverbal.

Reflections

The results of the study are not intended to be generalizable to all adolescents, but it is my hope that it has added to the body of knowledge of the form, function, and purpose of adolescent communication. While the study did not reveal one of my preliminary expectations, namely that there is a secret vocabulary teens use, it taught me a great deal about the thought processes of these young adults. They were deliberate and intentional when choosing the best mode to meet the audience and the intended purpose of the communication. The degree to which these adolescents were masters of their communicative options was impressive. They, possibly without having thought it through at a conscious level, knew why they made the choices that they did. I also was amazed at the savvy they displayed concerning privacy and their personal

safety in digital environments. Adults, I believe, often assume teens act first and think second. This idea was not supported in my research or in most of the literature I reviewed.

I anticipate that the results of the study will enable me, and other speech-language pathologists, to make more appropriate implementation choices for our clients who do not use verbal means as their primary mode of communication by providing them access to SNS sites and text messaging services. I expect that knowledge gained through analysis of the data from the study will increase our understanding of the tools adolescents use in communication, so that clients who gain access to these tools can use them in appropriate ways.

If we re-enter the classroom described at the beginning of chapter I after the introduction and implementation of, for example, the SNS FaceBook, the dialogue could look very different. Those two teens might now be sitting in front of the computer where the paraprofessional has helped them to log into FaceBook. Once on their homepage, they discover that several of their peers have posted a message on their wall and then they discover a new posting from the FaceBook group "I hope the (name of school) football team goes to the state tournament!" The paraprofessional then helps them reply to the wall posts and indicate their support of the message from the group. As I stated in chapter I, it is of the utmost importance to create communicative opportunities since learning happens from repeated exposure. For this reason, although we make every effort to ensure that our students understand the content of the message they help to construct and transmit to their peers, it is as (or almost as)

important that these students experience the social benefits of functional, meaningful, appropriate, and rewarding communication with their peers. It is this kind of communication that allows everyone to participate in life as fully as possible.

APPENDICES

Appendix A
Assent Form
Study Participant

Differential Use of Language by Adolescents across Modes of Written Communication

You are invited to participate in a research study exploring the different ways in which adolescents (teenagers) communicate with each other. This study is being conducted by Kris Vossler, a doctoral student in the Teaching and Learning program at the University of North Dakota, under the supervision of her advisor, Dr. Barbara Combs. You were selected as a possible participant in this study because you are a teenager and because you use two or more of the following technologies to communicate: text messaging on a cell phone, instant messaging, or internet social networking site such as "MySpace."

What I hope to learn about in this study are the different ways that you communicate with people and your possible reasons for doing so. Technology has increased the ways in which we can communicate with each other. These changes include things like using cell phones to text people, e-mail, instant messaging, and using internet social networking sites such as "MySpace," and "FaceBook." At the conclusion of this study, I hope to have a better understanding of who you communicate with using these new technologies, what you communicate about using each, and why you choose those modes for those reasons.

The benefit from this study is a better understanding of the ways in which you and others your age communicate and your reasons for doing so. You may know someone who is not able to communicate through speech as you do. One of my responsibilities is to help individuals like this develop alternative ways to communicate. I hope to take the information from this study and use it for these reasons. I also hope this study will help other speech-language pathologists who work with verbal adolescents who have language disorders. I may use results from this study in future journal articles and conference or course presentations.

If you decide to participate in this study, I will ask you to participate in two interviews, each lasting between one and two hours. During these interviews, I may ask you to show me some feature of one of the technologies (for example, "show me an example of something that was posted on your wall in FaceBook" or "show me how you would add something to your page"). If you are at all uncomfortable with any question or request made by me, you will always have the option to say no.

The risk to you as a participant in this study is minimal. All questions asked during the interview will be related to the who, what, and why of your communication. You will always have the option not to answer a question if you are not comfortable with the content. Likewise, the observations will focus on the same content, whom you talk to,

what you talk about, and why you choose the means you do to communicate. All interviews and observations will be conducted outside the school and workday so no financial risks are anticipated.

Any information from this study that can be used to identify you will remain confidential. All data from the interviews and observations, including digital recordings, transcripts, and consent forms will be kept in separate locked file cabinets for a minimum of three years after the completion of the study. Only the researcher, her advisor, and people who audit IRB procedures will have access to the data. After three years, the data will be destroyed.

Participation is voluntary and your decision to participate will not change your future relations with the University of North Dakota. If you decide to participate, you are free to leave the study at any time without penalty. At your request, a copy of the final written product will be made available to you.

If you have questions about the research, you may call Kris Vossler at 218-477-4200 or Dr. Barbara Combs at 701-777-3733. If you have other any other questions or concerns, please call the Research Development and Compliance office at 701-777-4279.

You will be given a copy of this consent form for future reference.

All of my questions have been answered and I am encouraged to ask any questions that I may have concerning this study in the future.

Participant's Signature

Date

Consent Form
Study Participant

Differential Use of Language by Adolescents Across Modes of Communication

You are invited to participate in a study exploring the different ways in which adolescents use language and communication. This study is being conducted by Kris Vossler, a doctoral student in the Teaching and Learning program at the University of North Dakota, under the supervision of her advisor, Dr. Barbara Combs. You were selected as a possible participant in this study because of your age and because you use two or more of the following technologies to communicate, cell phone, instant messaging, or Internet social networking site such as "MySpace."

The purpose of this study is to explore the different ways that adolescents communicate and their possible reasons for doing so. Technological advances have increased the ways in which people are able to communicate with each other. These changes include the use of cell phones to talk or text people, pagers, instant messaging, and use of Internet social networking sites such as "MySpace," and "FaceBook." At the conclusion of this study, I hope to have a better understanding of who adolescents talk to using these new modes of communication, what they talk about using each mode, and why they choose those modes for those communicative purposes.

The projected benefits of this study include an increase in understanding of the ways in which adolescents communicate and their reasons for doing so. It is hoped that this information will be used by teachers at the secondary and post-secondary to inform their practice in terms of communication style and style of teaching used. Additionally it is hoped that this study will add to the body of knowledge possessed by speech language pathologists. Language and communication are always changing and it is important to monitor the changes in both content and mode (for example, talking versus text messaging) in order to understand how and why people communicate with each other. Results from this study may be used in future journal articles and conference or course presentations.

If you decide to participate in this study, your involvement will be three-fold. First, you will participate in an interview with me that will last approximately one hour. Following the interview, I will schedule a time to observe you while you are using technology to communicate and/or ask to see examples of your communication using the various modes. This observation will last for approximately one hour. Finally, a follow-up interview, also lasting no more than one hour, will be scheduled in order to ask any last questions or to clarify what was seen during the observation.

The risk to you as a participant in this study is minimal. All questions asked during the interview will be related to the who, what, and why of your communication. No

questions of a sensitive or emotional nature will be asked. Likewise, the observations will focus on the same content, whom you talk to, what you talk about, and why you choose the means you do to communicate. All interviews and observations will be conducted outside the school and workday so no financial risks are anticipated.

Any information from this study that can be used to identify you will remain confidential. All data from the interviews and observations, including digital recordings, transcripts, and consent forms will be kept in separate locked file cabinets for a minimum of three years after the completion of the study. Only the researcher, her advisor, and people who audit IRB procedures will have access to the data. After three years, the data will be destroyed.

Participation is voluntary and your decision to participate will not change your future relations with the University of North Dakota. If you decide to participate, you are free to leave the study at any time without penalty. At your request, a copy of the final written product will be made available to you.

If you have questions about the research, you may call Kris Vossler at 218-477-4200 or Dr. Barbara Combs at 701-777-3733. If you have other any other questions or concerns, please call the Research Development and Compliance office at 701-777-4279.

You will be given a copy of this consent form for future reference.

All of my questions have been answered and I am encouraged to ask any questions that I may have concerning this study in the future.

Participant's Signature

Date

Consent Form
Parent/Guardian

Differential Use of Language by Adolescents across Modes of Written Communication

Your child is invited to participate in a research study exploring the different ways in which adolescents use language and communication. This study is being conducted by Kris Vossler, a doctoral student in the Teaching and Learning program at the University of North Dakota, under the supervision of her advisor, Dr. Barbara Combs. Your child was selected as a possible participant in this study because of his/her age and because they use two or more of the following technologies to communicate: text messaging on a cell phone, instant messaging, or internet social networking site such as "MySpace."

The purpose of this study is to explore the different ways that adolescents communicate and their possible reasons for doing so. Technological advances have increased the ways in which people are able to communicate with each other. These changes include the use of cell phones to text people, e-mail, instant messaging, and use of internet social networking sites such as "MySpace," and "FaceBook." At the conclusion of this study, I hope to have a better understanding of who adolescents communicate with using these new modes of communication, what they communicate about using each mode, and why they choose those modes for those communicative purposes.

The projected benefits of this study include an increase in understanding of the ways in which adolescents communicate and their reasons for doing so. It is hoped that this information will be used by teachers at the secondary and post-secondary to inform their practice in terms of communication style and style of teaching used. Additionally it is hoped that this study will add to the body of knowledge possessed by speech language pathologists. Language and communication are always changing and it is important to monitor the changes in both content and mode (for example, talking versus text messaging) in order to understand how and why people communicate with each other. Results from this study may be used in future journal articles and conference or course presentations.

If you decide to allow your child to participate in this study, they will be asked to participate in two interviews, each lasting about an hour. During these interviews, they may be asked to demonstrate feature of one of the technologies (for example, "show me an example of something that was posted on your wall in FaceBook" or "show me how you would add something to your page").

The risk to your child as a participant in this study is minimal. All questions asked during the interview will be related to the who, what, and why of their communication. They will always have the option to not answer a question if they are uncomfortable with the content. Likewise, the observations will focus on the same content, whom they talk to,

what they talk about, and why they choose the means they do to communicate. All interviews and observations will be conducted outside the school and workday so no financial risks are anticipated.

Any information from this study that can be used to identify your child will remain confidential. All data from the interviews and observations, including digital recordings, transcripts, and consent forms will be kept in separate locked file cabinets for a minimum of three years after the completion of the study. Only the researcher, her advisor, and people who audit IRB procedures will have access to the data. After three years, the data will be destroyed.

Participation is voluntary and your decision to allow your child to participate will not change their or your future relations with the University of North Dakota. If you decide to allow your child to participate, they will be free to leave the study at any time without penalty. At your request, a copy of the final written product will be made available to you.

If you have questions about the research, you may call Kris Vossler at 218-477-4200 or Dr. Barbara Combs at 701-777-3733. If you have other any other questions or concerns, please call the Research Development and Compliance office at 701-777-4279.

You will be given a copy of this consent form for future reference.

All of my questions have been answered and I am encouraged to ask any questions that I may have concerning this study in the future.

Parent/Guardian Signature

Date

Appendix B Initial Interview Questions

This list of questions represents a starting point for all interviews. It is expected that the questions asked during each individual interview will vary according to the responses to the initial questions.

1. When you want to share some new information with a friend, how do you go about doing that?
2. If you needed to get a message to an adult, for example one of your parents, how would you accomplish that?
3. When you are with friends, when and why do you use your cell phone to talk to other friends?
4. Do you text message?
5. If yes, when did you start to use this method?
6. When/why would you choose to send a text message instead of using your phone to talk to someone?
7. Does your phone have a keyboard or do you use the letters on the number pad?
8. How many times, on average, do you use your cell phone per day?
9. How many, on average, text messages do you send and/or receive per day?
10. Do you use a social networking site such as MySpace or FaceBook?
11. If yes, which one and why did you choose that one over the others?
12. If yes, what made you decide that you wanted/needed to have a site such as this?
13. What types of information does your site/page contain? (e.g., personal information versus general information)
14. Who has access to your site (e.g., how do you decide what networks you will join or what information will be marked as "private"?)
15. What role do your parents/guardians play in your use of sites like these (e.g., do they monitor the content of your site, how often you use it and for how long at a time, who is a member)
16. How many times per day do you check your site?
17. How many times per day do you edit the content on your site?
18. What members or groups are you a member of?
19. How did you decide which to join (or which ones you didn't want to join?)
20. Roughly, how many "friends" do you have on your social networking site?
21. Is this number greater or smaller than the number of people with whom you have actual face-to-face verbal contact?
22. Given the choice, what is your favorite way to "talk" to people?
23. Why?
24. Do you talk differently (use different words) when you are using different means to communicate and if so, how?
25. Do you talk about different things using the different modes of communication and if yes, how so?

26. Are there places/times when you are prohibited from using electronic means of communication – and what do you do then (e.g., do you honor those prohibitions or do you use these means when you aren't supposed to?)

REFERENCES

- Arnett, J. J. (1996). Learning to stand alone: The contemporary American transition to adulthood in cultural and historical context. *Human Development* 41. 295-315.
- Baron, N. S. (2005). Instant messaging and the future of language. *Communications of the ACM*, 48(7), 29-31.
- Baule, S. M., & Kriha, D. L. (2008). Free speech in a MySpace world. *Library Media Connection*, February,.
- Bauman, L. J., Karasz, A., & Hamilton, A. (2007). Understanding failure of condom use intention among adolescents. *Journal of Adolescent Research*, 22(3), 248-274.
- Benedict, R. (1954). Continuities and discontinuities in cultural conditioning. In W. Martin and C. Stendler (Eds.), *Readings in child development* (pp 142-148). New York: Harcourt, Brace.
- boyd, d. (2008). Facebook's privacy trainwreck: Exposure, invasion, and social convergence. *Convergence: The International Journal of Research into New Media Technologies*, 14(1), 13-20.
- boyd, d., & Ellison, N. B. (2008). Social network sites: Definition, history, and scholarship. *Journal of Computer-Mediated Communication*, 13, 210-230.
- Breeding, M. (2007). Librarians face online social networks. *The Systems Librarian*, September, 30-32.
- Bulik, B. S. (2009). What your favorite social net says about you. *Advertising Age*, 80(25), 6.
- Clampet-Lundquist, S. (2007). No more 'bois ball. *Journal of Adolescent Research*, 22(3), 298-323.

- Creswell, J. W. (1998). *Qualitative inquiry and research design: Choosing among five traditions*. Thousand Oaks, CA: Sage Publications.
- Creswell, J. W. (2005). *Educational research: Planning, conducting, and evaluating quantitative and qualitative research* (2nd ed.). Upper Saddle River, NJ: Pearson Merrill Prentice Hall.
- communication. (2010). In *Merriam-Webster Online Dictionary*. Retrieved July 24, 2009 from <http://www.merriam-webster.com/dictionary/communication>
- Davis, A. (1944). Socialization and adolescent personality. In N. Henry (Ed.), *Adolescence, yearbook for the national society for the study of education: Vol 43 part 1* (pp198-216). Chicago: University of Chicago, Department of Education.
- Dilley, P. (2004). Interviews and the philosophy of qualitative research. *The Journal of Higher Education*, 72(1), 127-132.
- Eberhardt, D. M. (2007). Facing up to Facebook. *About Campus, September/October*, 18-26.
- Ellison, N. B., Steinfield, C., & Lampe, C. (2007). The benefits of Facebook "friends:" Social capital and college students' use of online social networking sites. *Journal of Computer Mediated Communication*, 12, 1143-1168.
- Emerson, R. M., & Fretz, R. I. (1995). *Writing ethnographic notes*. Chicago: University of Chicago Press.
- Everall, R. D., Bostik, K. E., & Paulson, B. L. (2006). Being in the safety zone: Emerging experiences of suicidal adolescents and emerging adults. *Journal of Adolescent Research*, 21(4), 370-392.
- Fogel, J., & Nehmad, E. (2008). Internet social network communities: Risk taking, trust, and privacy concerns. *Computers in Human Behavior*, 25, 153-160.

- Figg, E. (1999). Return to the family meal. *Family Safety & Health, Winter 1999/2000*, 58(4), 16-19.
- Fossey, E., Harvey C., McDermott F., & Davidson, L. (2002). Understanding and evaluating qualitative research. *Australian and New Zealand Journal of Psychiatry*, 36(6), 717-732.
- Fulkerson, J., Neumark-Sztainer, D., & Story, M. (2006). Adolescent and parent views of family meals. *Journal of the American Dietetic Association*, 106(4), 526-532 .
- Glesne, C. (2006). *Becoming qualitative researchers* (3rd ed.). Boston: Allyn and Bacon.
- Glover, R.J. (1999). Coming of Age: Developmental norms of the adolescent years. *NASSP Bulletin*, 83(603), 62-69.
- Goodman, J. (2007). Click first, ask questions later: Understanding teen online behavior. *Aplis*, 20(2), 84-86.
- Greenfield, P., & Yan, Z. (2006). Children, adolescents, and the internet: A new field of inquiry in developmental psychology. *Developmental Psychology*, 43(3), 391-394.
- Gross, E. F. (2004). Adolescent internet use: What we expect, what teens report. *Applied Developmental Psychology*, 25, 633-649.
- Gross, E. F., Juvonen, J., & Gable, S. L. (2002). Internet use and well-being in adolescence. *Journal of Social Issues*, 58(1), 75-90.
- Gross, R., & Acquisti, A. (2005). Information revelation and privacy in online social networks. WPES 05 November 7 Alexandria VA.
- Guba E. G., & Lincoln Y. S. (1985). *Naturalistic inquiry*. Beverly Hills: Sage Publications.
- Haggstrom-Nordin, E., Sanberg, J., Hanson, U., & Tyden, T. (2006). "Its everywhere!" Young Swedish people's thoughts and reflections about pornography. *Scandinavian Journal of Caring Sciences*, 20(4), 386-393.

- Hall, G.S., (1904). *Adolescence: Its psychology and its relations to physiology, anthropology, sociology, sex, crime, religion, and education*. New York: Appleton
- Hargittai, E. (2008). Whose space? Differences among users and non-users of social network sites. *Journal of Computer-Mediated Communication*, 13, 279-297
- Harris Interactive/CTIA (2008) *Teenagers: a generation unplugged*. Retrieved July 24, 2009, from http://files.ctia.org/pdf/Hi_TeenMobileStudy_ResearchReport.pdf.
- Havighurst, R. (1953). *Human development and education*. New York: Longmans, Green.
- Jayson, S. (2009). For teens, a friend online is usually a friend offline
- Kennedy, T. L., Smith, A., Wells, A.T., & Wellman, B. (2008). Networked families: Parents and spouses are using the internet and cell phones to create a "new connectedness" that builds on remote connections and shared internet experiences. *Pew Internet and American Life Project*, October 19, 2008, Retrieved from <http://www.pewinternet.org/Reports/2007/Teens-and-Social-Media.aspx?r=1>. accessed Thursday July 30, 2009
- Kvale, S. (1996). *InterViews: An introduction to qualitative research interviewing*. Thousand Oaks, CA: Sage Publications.
- Lampe, C., Ellison, N., & Steinfield, C. (2006). A Face(book) in the crowd: Social searching vs. social browsing. CSCW'06 November 4-8 2006, Banff Alberta Canada.
- Larson, V. L., & McKinley, N. L. (2003). *Communication solutions for older students: Assessment and intervention strategies*. Eau Claire, WI: Thinking Publications.
- Lenhart, A., Madden, M., Macgill, A.R., & Smith A. (2007). Teens and social media: The use of social media gains a greater foothold in teen life as they embrace the conversational nature of interactive social media. *Pew Internet & American Life Project*, Retrieved from <http://www.pewinternet.org/Reports/2007/Teens-and-Social-Media.aspx?r=1>

- Maxwell, J. A. (2005). *Qualitative research design: An interactive approach* (2nd ed.) Thousand Oaks, CA: Sage Publications.
- McFadden, T. (1991). Narrative and expository language: A criterion based assessment procedure for school-age children. *Journal of Speech Language Pathology and Audiology, 15*(4), 57-63
- McKee, D. M., & Karasz, D. (2006). "You have to give her that confidence:" Conversations about sex in Hispanic mother-daughter dyads. *Journal of Adolescent Research, 21*(2), 158-184.
- Mead, M. (1950). *Coming of age in Somoa*. New York: New American Library.
- Miller, P (1989). Theories of adolescent development. In J. Worell and F. Danner (Eds.), *The adolescent as decision-maker: Applications to development and education* (pp13-49). San Diego, CA: Academic Press.
- morphology. (n.d.). *Dictionary.com Unabridged*. Retrieved August, 5, 2009, from Dictionary.com website: <http://dictionary.reference.com/browse/morphology>
- Muuss, R. E. (1975). *Theories of Adolescence* (3rd ed.). New York: Random House.
- Nelson, N. W, (1988). The nature of literacy. In M. Nippold (Ed.) *Later language development: Ages nine to nineteen* (pp11-28). Boston: Little, Brown
- Nelson & Quintana (2005)) Qualitative clinical research with children and adolescents. *Journal of Clinical Child and Adolescent Psychology, 34*(2). 344-356.
- Nielsen Company (2009, June) How teens use media: A Nielsen report on the myths and realities of teen media trends. Retrieved December 31, 2009, from http://en-us.nielsen.com/forms/report_forms/How_Teens_Use_Media.
- Nippold, M. A. (2007). *Later language development: School-age children, adolescents, and young adults*. (3rd ed.). Austin, TX: Pro-Ed.

- Nippold, M. A., Hegel, S. L., Sohlberg, M. M., Schwarz, I. E. (1999). Defining abstract entities: Development in pre-adolescents, adolescents, and young adults. *Journal of Speech, Language, and Hearing Research, 42*, 473-481.
- Nippold, M. A., Mansfield, T. C., & Billow, J. L. (2007). Peer conflicts explanations in children, adolescents, and adults: Examining the development of complex syntax. *American Journal of Speech-Language Pathology, 16*, 179-188.
- Oliver, D. G., Serovich, J. M., & Mason, T. L. (2005). Constraints and opportunities with interview transcription: Towards reflection in qualitative research. *Social Forces, 84*(2), 1273-1289.
- Owens, R. E. (2008). *Language development: An introduction* (7th ed.). Boston: Allyn and Bacon.
- Piantanida, M., Tananis, C. A., & Grubs, R. E. (2004). Generating grounded theory of/for educational practice: The journey of three epistemorphs. *International Journal of Qualitative Studies in Education, 17*(3), 325-346.
- Raacke, J., & Bonds-Raacke, J. (2008). MySpace and Facebook: Applying the uses and gratifications theory to exploring friend-networking sites. *CyberPsychology & Behavior, 11*(2), 169-174.
- Raine, L. (2009). Teens and the internet. *Pew Internet & American Life Project*. Retrieved from www.pewinternet.org/PPF/r/255/presentation_display.asp, Jan 9, 2009, accessed Thursday July 30, 2009,
- Richardson, W. (2007). Social tools in schools taking root. *District Administration, November*, 68.
- Rosen, L. D., Cheever, N. A., & Carrier L. M. (2008). The association of parenting style and child age with parental limit setting and adolescent MySpace behavior. *Journal of Applied Developmental Psychology, 29*, 459-471.

- Ross, C., Orr, E. S., Arseneault, J. M., Simmering, M. G., & Orr, R. R. (2009). Personality and motivations associated with Facebook use. *Computers in Human Behavior, 25*, 578-286.
- Rubin H. J. & Rubin I. S. (1995). *Qualitative interviewing: The art of hearing data*. Thousand Oaks, CA: Sage Publications.
- Sanger, D., Moore-Brown, B. J., Montgomery, J., Rezac, C., & Keller, H. (2003). Female incarcerated adolescents with language problems talk about their own communication behaviors. *Journal of Communication Disorders, 36*(6), 465-486.
- Seidman, I. (1998). *Interviewing as qualitative research: A guide for researchers in education and social sciences* (2nd ed.). New York: Teachers College Press.
- Smetana, J. G. (1995). Parenting styles and conceptions of parental authority during adolescence. *Child Development, 66*, 299-316.
- Strauss, A., & Corbin, J. (1998). *Basics of qualitative research: Techniques and procedures for developing grounded theory* (2nd ed.). Thousand Oaks, CA: Sage Publications.
- Stuart, C. (2007). New meaning to "friend:" More questions than answers. *Relational Child and Youth Care Practice, 20*(2), 55-61.
- Subrahmanyam, K., Smahel, D., & Greenfield, P. (2006). Virtual worlds in development: Implications of social networking sites. *Developmental Psychology, 42*(3), 395-406.
- Subrahmanyam, K., & Greenfield, P. (2008). Online communication and adolescent relationships. *Future of Children, 18*(1), 119-146.
- Subrahmanyam, K., & Lin, G. (2007). Adolescents on the net: Internet use and well-being. *Adolescence, 42*(168), 659-677.

- Taylor, D. (2008). Does social media really connect you to humanity? *Phi Kappa Phi Forum*, pp. 18-21.
- Tucker, P. (2009). Hooked up or just hooked. *The Futurist*, March-April, ##-##.
- Valkenburg, P. M., & Peter, J. (2007). Preadolescents' and adolescents' online communication and their closeness to friends. *Developmental Psychology*, 43(2), 267-277.
- Weiss, J. A., Jampol, M. L., Lievano, J. A., Smith, S. M., & Wurster, J. L., (2008). Normalizing risky behaviors, A grounded theory study. *Pediatric Nursing*, 34 (2), 163-169.
- Wells, K. (1995). The strategy of grounded theory: Possibilities and problems. *Social Work Research*, 19(1), 33-37.
- Westby, C. (1984). Development of narrative language abilities. In G. Wallach and K. Butler (eds.), *Language learning disabilities in school-age children* (pp. 103-127). Baltimore: Williams and Wilkins.
- Williams, A. M. & Merten, M. J. (2008). A review of online social networking profiles by adolescents: Implications for future research and intervention. *Adolescence*, 43(170), 253-274.
- Williams, B. (2008). "What *South Park* character are you?": Popular culture, literacy, and online performances of identity. *Computers and Composition*, 25, 24-39.
- Wolak, J., & Ybarra, M. L. (2008). Protecting children and teens from cyber-harm. *Harvard Mental Health Letter*. July, 4-5.
- Zhao, S., Grasmuck, S., & Martin, J. (2008). Identity construction on Facebook: Digital empowerment in anchored relationships. *Computers in Human Behavior*, 24, 1816-1836.