Emerging adults: analysis of learning patterns in collegiate classrooms

Joan Ann Swanson

University at Albany, State University of New York, jswan6@gmail.com

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EMERGING ADULTS: ANALYSIS OF LEARNING PATTERNS IN COLLEGIATE CLASSROOMS

by

Joan Ann Swanson

A Dissertation
Submitted to the University at Albany, State University of New York
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Doctor of Philosophy

School of Education
Department of Educational Counseling and Psychology
Division of Educational Psychology and Methodology
2013
Emerging Adults: Analysis of Learning Patterns in Collegiate Classrooms

by

Joan Ann Swanson

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ACKNOWLEDGEMENTS

I have now completed an educational journey filled with choices and challenges.
I have never regretted my choice to pursue doctoral work at the University at Albany.
The challenges have made me a stronger person and given me clarity on the path for my future. I am deeply grateful to Dr. Dianna Newman, my committee chair, who willingly shared her expertise and insight. She always had faith in me, encouraged me through the challenging times and pushed me to do my best.

My dissertation committee has been exceptional. As chair, Dr. Dianna Newman kept me on track through all the challenges. Dr. Deborah May has willingly casted vision and pushed for excellence. Dr. Dean Spaulding’s eye for detail has been much appreciated. Each of these committee members has gone the extra mile to help me get this accomplished – thank you!

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My expressions of gratitude would not be complete without thanking some great friends who continuously cheered me on. Thank you, Theresa, for walking with me through those first steps. Thanks so much Jane, Victoria, and Laura for encouraging and supporting me!

Along the journey, one of the challenges has been the loss of both my parents, Elwyn and Cora Albus. They always shared in my sorrows and celebrated my accomplishments. Their memory will always be deeply embedded in this journey.
Lastly, the choice to take this educational journey was most supported by my husband, James, and family. Years of lengthy commutes, long nights and endless projects would not have been possible without their patience, sacrifice and belief in me. James, Jocelyn, Joshua, Jacob, and Julia, I love you all and thank you!
ABSTRACT

Emerging adults, who are transitioning from adolescence to adulthood, often spend a significant amount of time on college campuses preparing for their future endeavors. Today’s educator is facing many options for addressing the educational needs of their students, as well as a myriad of learning resources and tremendous advances in technology. Their emerging adult students are dealing with multiple distractions, adjustments and transitions. This study examined preferred emerging adult learning styles in light of an information processing framework using grounded theory qualitative analysis. The study also explored students’ reported preferences for optimal learning experiences and engagement within the collegiate classroom, and examined how emerging adult students determine importance in classroom content. Data was collected in two replication phases. Round I included reflective journals (N=36) and self-report surveys (N=51). Round 2 included replication, with slight modifications based upon lessons learned in the first round, yielding reflective journal (N=27) and survey (N=42) data. Consistency in results in the second round of study reinforced the reliability and validity of this study.

This study revealed some emerging adult characteristics. Of the emerging adults surveyed, 74% reported that their learning style preference was visual, yet 83% reported auditory instruction with discussion as a favored instructional mode. This disparity between students’ perceived learning style and their actual instructional preference indicates that students may not fully understand which instructional methodologies most effectively influence them. This study also revealed a disconnect between students’ survey answers and personal journal reflections about the learning process. This disconnect was more pronounced with younger students while older, more mature
students often had greater self-understanding. Results also indicated emerging adult students rely heavily upon instructor cues when determining importance, which impacts focus, attention, and potential learning. Additionally, emerging adult engagement patterns showed distinct favor for whole group, non-active situations. Technology was found to be an assumed part of emerging adults’ everyday lives and an essential element in the instructional process, however, typically not understood as a separate instructional strategy or tool. Lastly, the results also support the theoretical constructs of emerging adulthood as a developmental period with norms and typical patterns of learning.
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CHAPTER I

Introduction

Traditional college students are in the developmental phase between adolescence and adulthood, fitting the developmental category coined by Arnett (2000) as “emerging adults.” This study focuses specifically upon the collegiate emerging adult population. In the twenty-first century typical higher education liberal arts institutions face changes in student demographics, enrollment uncertainties, mandates for accountability, and economic challenges. These issues are driving colleges to analyze the traditional collegiate setting and instructional practices (Altbach, Berdahl, & Gumport, 2005; Bruininks, Keeney, & Thorp, 2010; Hainline, Gaines, Feather, Padilla, & Terry, 2010). Colleges have sought to improve emerging adult student engagement (Macken & Bishop, 2009), but there is an ongoing need for institutions to examine course content and instructional delivery. “Although content is a paramount component of systemic effectiveness, its delivery must be effective or else the information and its quality cannot be consumed” (Polk, 2006, p. 24). It is of great importance that the instructional delivery is appropriate for the population being served. This chapter discusses emerging adult learning patterns in college settings, the learning and engagement problems specific to this population, and the significance of the study.

Emerging adults, considered to be individuals in the age range between 18 and 25 (Arnett, 2000), are making decisions that will impact career and family choices and frequently need support and guidance through these transitional years. Aseltine and Gore (2005) noted a lack of attention and research related to the type and quality of life experiences necessary for healthy transitions through this developmental period.
Engagement and success in an academic setting can be a key factor in future employment, living situations, status and overall well-being (Pascarella & Terenzini, 2005). As noted by Murphy, Blustein, Bohlig, and Platt (2010, p.175), “Research is needed to elucidate how researchers, teachers, practitioners, and employers might help emerging adults create a positive trajectory for their personal and professional lives during this presumably pivotal time”. In light of technological advances and current learning resources, college personnel and instructors need to take a fresh look at educating today’s emerging adult students.

**Purpose of the Study**

The purpose of this study was to further understand emerging adult instructional preferences and preferred learning styles, and to determine how emerging adults judge importance or value in specific lesson content. The study explored which instructional methods were most appropriate for garnering emerging adult attention and engagement in the collegiate setting. More specifically, developmentally appropriate instruction for emerging adults was examined through qualitative investigation of active learning settings, using a grounded theory approach. Charmaz (2006) recommends early data collection followed by sorting, synthesizing and qualitative coding as a means of building grounded theory. This study emulated that procedure by examining the learning process and patterns of emerging adults who were engaged in collegiate coursework including “acquiring and modifying knowledge, skills, strategies, beliefs, attitudes and behaviors” (Schunk, 2012, p. 224). The process in this study began by examining patterns, which then led to questioning if emerging adults followed patterns for their learning preferences. The framework for this grounded theory analysis was built upon
information processing theories, specifically focusing upon attention and perception of knowledge, which impact encoding, memory and retrieval of information for lifelong use. The purpose of the study was to elucidate patterns of learning in emerging adults and to add to the theoretical base about the emerging adult population.

**Significance of the Study**

The US Census Bureau declared 47% of Americans between 18 and 24 were enrolled in post-secondary institutions in 2006 (Davis, 2008) and that number has since increased. The total higher education enrollment of students 18 to 24 years rose from 17,020,000 in 2006 to 19,764,000 in 2009 (US Census Bureau, 2012). Higher education is being forced to examine the efficacy of its programs which serve this large cross section of American society since there are “dwindling public dollars, changing demographics, intense competition, and increased scrutiny” (Bruininks, Keeney, & Thorp, 2010, p. 115). The significance of this study is tied to the population being examined, the instruction and setting used in their education, and the impact upon their learning preferences.

When college undergraduates walk into a classroom they may be forced to face their fears, challenged to new heights of understanding and purpose, or put to sleep. A student’s educational journey may take place in a small seminar-like setting, in a blended/on-line format, or a large lecture hall. Instructors of emerging adults need to be prepared to challenge, motivate, energize, facilitate, and engage students. The collegiate experience is pivotal for many emerging adults as it marks a trajectory for potential successes. “Those who attend college change their value and attitudinal positions in a number of different areas but that they do so as a consequence of attending a college or
university and not simply in response to normal, maturational impulses or to historical, social, or political trends” (Pascarella & Terenzini, 1991, p. 325). Arnett (2012, Chapter 7, para.1) found most emerging adults aspire to a college degree but “fewer than one-third have attained one by ages 25-29.” Opportunities for success without college education seem dismal, impacting both socioeconomic status and emotional well-being. It is immensely important that emerging adults succeed in the collegiate setting.

The adjustments and transitions experienced by emerging adults complicate the academic process. Emerging adults have new freedom to make choices, explore new settings and experiences, and develop new relationships. According to Damon (2008), many emerging adults get caught up in exploring their identity and new possibilities, resulting in a delay of commitments. This exploratory trend affects the educational realm as well, often leaving a student’s commitment to academics as a lesser priority.

Methodologies used to mold and shape collegiate emerging adults are impacted by the goals of the higher education institution. Consequently, we must address how instructors can most effectively reach this population and what strategies, methodologies, and tactics can be used to engage them in learning. As part of this effort, we must explore how these emerging adults “know” the content they are seeing, hearing, and experiencing. Vermut and Veretten (2004), having reviewed research on student learning patterns from the past decade, stressed that instructors must recognize that there are qualitatively different patterns for learning, and some are more advantageous for lifelong learning competence.

Since there is limited research on emerging adult characteristics and developmental status (Blinn-Pike, Jonkman, & Smith 2008), investigating more about
this transitioning population is pivotal in effectively instructing them in the collegiate setting. The instructor who has an understanding of emerging adult learning preferences and needs has an enhanced ability to develop effective instructional strategies for that population, and is more capable of identifying students at risk academically (Thompson & Geren, 2002; Thompson & Thornton, 2002). Understanding the reasoning an emerging adult uses for determining content importance could aid an instructor in designing coursework that would be more conductive for emerging adult engagement. “Students’ motivations are strongly influenced by what they think is important and what they believe they can accomplish” (Barkley, 2010, p. 11). Further, the instructor who understands the unique characteristics of emerging adults will be able to engage and challenge emerging adults to realize their personal academic potential, increasing their opportunities for success. “The success of the local, state, and national economies will depend on the ability of higher education to provide access to students whose age, background, socioeconomic status, and race-ethnicity are varied. These students have different educational goals, learning styles, and attendance patterns” (Anderson, 2003, p. 11). Vermunt and Vermetten (2004) proposed that higher educational institutions develop learning opportunities which stimulate students to develop more meaning- and application-directed learning patterns.

This study provides research in determining academic strategies and methods appropriate for the emerging adult population, and supports further development of theory concerning emerging adulthood. As data were gathered, coding pertaining to the theory was used to examine learning patterns (Auerbach & Silverstein, 2003). This grounded theory approach served to aid in formulating research questions and subsequent
explanation of how emerging adults experienced learning (Creswell, 2007). Overall, the research questions investigated in this study were:

1. What are instructional preference patterns for emerging adults in current collegiate classrooms?
   a. What instructional strategies are reported as preferred by emerging adults?
   b. Do reported instructional preferences differ from what emerging adults claim to be most helpful in the collegiate classroom?

2. In what ways do emerging adult learning style patterns relate to their instructional preferences?
   a. Do emerging adults consistently identify their learning style?
   b. What demographic patterns can be identifiable with learning style preferences?
   c. What patterns for preferred learning styles are associated with preferred instructional strategies?

3. Which learning variables (e.g. instructional strategy, learning style preference, the timing of content presentation, technology, and type of student engagement) affect emerging adults’ determination of content importance in a collegiate class?

**Assumptions, Limitations, and Delimitations**

**Assumptions**

Researchers commonly make assumptions when designing and conducting studies. The general assumptions associated with the execution of this study were as
follows: It was assumed there were qualitative differences in the learning variables, specifically: helpful components of college classes; elements for determining content importance; and suggestions for course improvement. Independence also was assumed for the variables of timing of content in a class, type of student engagement, and type of instructional strategy.

Students participating in the study were enrolled in classes with the same instructor. The assumption was made that these students participating experienced equivalent instructional techniques and course content; thereby, responding according to their personal learning styles and preferences.

Limitations

Generalizations were made from adult developmental studies for the purpose of understanding age-related characteristics, trends and learning processes. Such generalizations assist practitioners in making decisions that help advance learning and change (Knox, 1977). It is important for the reader to understand that the evidence in a study of this nature, which examines the impact of variables related to emerging adult college students, will likely hold some bias as noted by Pascarella and Terenzini (1991). In addition, the scope or outcome of this study is restricted in that it was conducted in a private higher education institution population consisting of mainly traditional students, with limited numbers of minority students. The generalizability is limited to similar scopes of population in peer institutions with comparable constituents.

Delimitations

Delimitations are the bounds limiting a particular study. Delimitations associated with this study include purposeful limiting of participation to students enrolled in
education courses at the researcher’s own higher education institution. The researcher was the collegiate instructor of the students who participated in this study. A further delimitation is that students’ journal responses were generated from that instructor’s presentation of content thus confining the content to the studied course.

**Definition of the Terms**

The following operational definitions of key terms have been adopted for this study.

**Emerging Adults**

Arnett (2000) proposed a theory of development in which individuals in their late teens through the twenties were considered to be in a psychosocial state which was neither adolescence nor adulthood. Previous terminology used for this developmental period included: *late adolescence, young adulthood, the transition to adulthood,* and *youth*. Arnett (2007, p. 69), however, argued a more appropriate title was “emerging adulthood”, emphasizing that these prior terms do not properly conceptualize individuals who are no longer in adolescence, but also have not yet quite reached normative responsibilities and characteristics of adulthood. For the purpose of this study, emerging adults were considered to be the population in the age range of 18-25 who experienced identity exploration, instability, self-focus, feeling-in-between, and multiple possibilities and opportunities for their future (Arnett, 2000, 2004, 2007).

**Learning Style Preferences**

For the purpose of this study, “Learning styles are preferences and tendencies students have for certain ways of taking in and processing information and responding to different instructional environments” (Felder, 2010, p. 4). Learning styles reveal “stable
variations among learners in ways of perceiving, organizing, processing, and remembering information” (Schunk, 2012, p. 490). In this study learning style was defined in two different but complementary ways. First, based on self-reported open-ended lens, student learning styles were coded by the following modalities: auditory, visual and kinesthetic. Second, in this study, learning style again based upon preferences were identified as either active or passive engagement.

**Instructional Methodologies**

Instructional methodologies were defined for this study as specific “systematic plans oriented toward regulating academic work and producing successful task performance” (Schunk, 2012, p. 495). Factors in instructional methodology included the mode for content delivery; timing within the class and semester; as well as the type of participation required by the student. Some examples of instructional methodologies were the use of PowerPoint in a lecture, the use of technological tools such as iClickers, cooperative group work, and reflective journaling at the end of a class period.

**Information Processing Theory**

In this study information processing was considered to be the theoretical viewpoint that humans process information through a series of mental processes including attention, encoding of information, memory tasks and retrieval of information (Schunk, 2012). Key elements for information processing included “sequence and execution of cognitive events” (Schunk, 2012, p. 494). An information processing lens was used to examine student engagement and the preferred manner in which students processed course content.
**Attention.** In this study, attention was considered a set of behaviors and processes by which an individual was able to focus upon relevant information key in the learning process (Davis, 2005; Meece & Daniel, 2008; McDevitt & Ormrod, 2013; Santrock, 2011).

**Perception.** For this study, perception was defined as the interpretation of information coming into the sensory receptors; the ears, eyes, nose, tongue, and skin (Santrock, 2011). Perception also involves pattern recognition through which input is given meaning (Schunk, 2012).

**Encoding.** The process of putting information into a meaningful context was defined as encoding. It involved imaging, implementing decision rules, organizing information, monitoring understanding, and organizing information (Schunk, 2012).

**Memory.** For the purpose of this study, memory was defined as the process of holding information. Memory was divided into sensory memory, short-term memory, working memory, and long-term memory. Each had limited capacity, dependent upon the depth of information processing.

**Retrieval.** The process of accessing information from memory storage was referred to as retrieval in the information processing framework.

**Timing**

In this study, timing referred to when instruction was provided within a particular class (e.g. at the beginning, middle or end of the class). Within the concept of timing, primacy effect held that initial items reviewed received the most attention and rehearsal, while items most recently reviewed held a recency effect and were easiest to recall (Ebbinghaus, 1913; Schunk, 2012).
**Student Engagement**

For the purpose of this study, student engagement was defined as the level or frequency of involvement, characterized through active or passive responses. Active engagement referred to student’s physical participation in an activity. Passive engagement was defined as student involvement reflected via stationary activities where students were engaged by senses related to listening or viewing but not physically required to move. This study also viewed student engagement as a process of “making sense and meaning out of new information by connecting it to what is already known” (Barkley, 2010, p. 5).

**Summary**

There has been limited research on optimal instructional strategies, especially those related to learning styles of the emerging adult population. More information concerning how to gain the attention of, and effectively engage emerging adults within the college setting has great potential in enhancing their learning and subsequent opportunities. Using a grounded theory approach, supported by an information processing framework, attempts to further define the emerging adults’ preferred instructional methodology and learning styles, and to establish how emerging adults judge importance or value in specific lesson content.
Chapter II

Review of Literature

Literature supporting this study represents the following domains: the commonalities and needs of the emerging adult; the twenty-first century collegiate classroom and instructor; emerging adult student attention and engagement within the information processing framework; learning preferences, strategies and methodologies for the collegiate classroom; and how emerging adults discern what is important in an educational setting.

The theoretical framework for the effective instruction of collegiate emerging adults rests upon the interplay between information processing theory; Gagné’s phases of learning; and learning style theories (see Figure 1). Each of these theories interacts as cogs in the learning process of the emerging adult.

Figure 1. Emerging adult learning process interactions. Gagné’s phases of learning are shown to have a connection to learning styles, and both the phases of learning and learning styles are connected to a learner’s information processing.
Emerging Adult Population

Emerging adulthood has been proposed as a life stage in the study of human development (Arnett, 2000, 2004). As with all developmental stages, there are norms and common characteristics marking that period. The following section describes the emerging adult developmental status, tasks, and characteristics.

Developmental Period

New life stage status. In recent years, the recognition of a timespan between adolescence and adulthood has become increasingly accepted in industrialized countries. Simultaneously, the timing and sequencing of traditional markers of adulthood have also become more blurred, complicated, and extended (Arnett, 2011; Donoghue & Stein, 2007; Settersten, Furstenberg, & Rumbaut, 2005). The concept of a new status or life stage, emerging adulthood, has become more widely accepted, marking the period between adolescence and adulthood. As has been previously noted, there has been limited research studying this age span as a developmental period (Nelson, Padilla-Walker, Carroll, Barry, Madsen, & Badger, 2007). Human development includes “orderly and sequential changes in characteristics and attitudes” within a period of time, but not necessarily as a “result of time” (Knox, 1977, p. 9). The length of the emerging adult period is dependent upon completing the preparatory steps which brings them into adult roles. Increasingly, the societal delineation marking the step from adolescence to adulthood has become blurred as individuals between these recognized stages of development struggle to proceed to adulthood. “One of the most convincing pieces of evidence that emerging adulthood is a unique period in development is the ambivalence...
that emerging adults have about their own status as adults” (Nelson & Barry, 2005, p. 243).

**Developmental tasks of emerging adults.** Emerging adults are individuals having the distinct features of “feeling in-between,” “self-focused,” and “seeking identity,” especially in the areas of love, work, and future directions (Arnett, 2007, p.152). These features especially emphasized by Arnett (2007) mark major developmental steps yet to be accomplished. Nelson and Barry (2005) also found additional characteristics associated with emerging adulthood to include: issues with independence, identity, depression, and risky behavior. These issues tend to delay what society views and marks as norms of adulthood.

Psychosocial theories typically have portrayed the need for individuals to complete certain developmental tasks in order to progress to the next level of development (Pascarella & Terenzini, 2005). Identity formation is a key task an emerging adult tackles in their development (i.e. At what point do individuals start considering themselves adults?). Nelson, et al. (2007) found parents no longer viewed their children in the 18-25 age range as adolescents, yet struggled to see them as adults. In an investigation of emerging adult versus adult classification in college students, Blinn-Pike, Jonkman, and Smith (2008), found limited research on the characteristics of emerging adults and societal perception of their current developmental status. Examining their mixed-major sample of 302 undergraduate students in southern universities, they found only 38% of the students were self-classified as adults, and 62% self-identified as emerging adults. The researchers also discovered cultural and socioeconomic status impacted classification, with minorities and lower socioeconomic status individual taking
on adult roles earlier than their white middle class peers (Blinn-Pike, Jonkman, & Smith, 2008).

Chickering (1969) outlined seven developmental vectors of student development: achieving competence, managing emotions, developing autonomy, establishing identity, freeing interpersonal relationships, developing purpose, and developing integrity. Each of these components is viewed as a struggle or growth point observed in a college student’s transition between adolescence and adulthood. These elements are considered vectors because they have range in direction and magnitude, which also describes the developmental transitional components commonly faced in emerging adulthood.

**Cultural and social influence on development.** Developmental transitions are often influenced by cultural and social experiences. Not only is emerging adulthood gaining acceptance as a period of human life development, emerging adulthood is increasingly considered a cultural theory (Arnett, 2011). Both technological changes in the twentieth century and changes in gender perspectives are key elements impacting the societal understanding of young adult decisions, preparations, and status (Settersten, Furstenberg, & Rumbaut, 2005). Young adults need to be well-versed technologically to be competitive, which impacts training needs and causes delay in adult employment. Increasingly, females are met with less gender-related division of labor and are finding fewer barriers in seeking education and employment. In addition to technical and gender perspective changes, Settersten, Furstenberg, & Rumbaut (2005) noted an increased need for specialized training extends the adult preparation timeframe and delays family formation. Typical normative markers for adulthood such as becoming financially independent and starting a family are being delayed as more emerging adults, male and
female, extend their educational paths, delay marriage, and the accompanying financial responsibilities, while preparing for their futures.

Other cultural, ethnic, and socioeconomic factors contribute to the process of moving into adulthood. Settersten, Furstenberg, & Rumbaut, (2005) found less discrimination in recent years between minorities in education and the workforce; however, there are still fewer minority youth participating in advanced education related to preparation for professional or technical careers. Such preparation enables them to move more readily into normative adult roles as they face expectations to start a family and contribute financially (Settersten, Furstenberg, & Rumbaut, 2005). This early family formation often impedes educational endeavors. Research indicates that the concept of emerging adulthood may be limited to Western cultural settings where it is possible to postpone adult responsibilities (Arnett, 2000; Nelson, Badger, & Wu, 2004).

Summary of emerging adulthood as a developmental period. Human development is divided into periods marked by norms associated with an orderly progression through developmental tasks. The concept on emerging adulthood has distinct developmental features, is increasingly gaining status acceptance as a developmental period, and marked by cultural and social influences.

Common Characteristics of Emerging Adults

Emerging adults as individuals are diverse, yet as a group they display commonalities increasingly connected with their developmental period. These commonalities flow from their resistance to societal norms and their distinctive activities. The next section discusses normative experiences of emerging adults in addition to their gender and cultural differences.
**Normative experiences of emerging adults.** Young people who no longer fit the typical adolescent model are achieving traditional markers of adulthood such as leaving home, starting a family and being economically independent more slowly (Nelson, et al., 2007; Settersten, Furstenberg, & Rumbaut, 2005). The emerging adult, as profiled by Arnett (2007, p. 152), transitions through certain normative experiences including “identity exploration”, “instability”, “self-focus”, and “feelings of being in-between” while navigating a wide range of life opportunities and “possibilities”. Syed and Mitchell (2013, p. 83) called these “five pillars” a rubric of emerging adulthood. The idea of delaying adult commitments is not new. Erikson (1968) found individuals, whom we would categorize today as being in the emerging adult framework, to be considered in a psychological moratorium of delaying commitments. In recent research (Murphy, et al., 2010, p. 178), emerging adults were noted to have difficulty “narrowing career choices” and “identifying abilities and interests”. Expanded opportunities and more freedom to choose directions have become a normative experience for emerging adults, contributing to indecisiveness, as well as affecting academic choices, career decisions and life commitments.

Arnett’s (2004) characterizations of the emerging adult have been evidenced in recent news reports. The *NY Times* described emerging adults in today’s society as being in a “black box”, reporting 40% of people in their twenties change their residence yearly, have frequent job changes, return to live with their parents at some point, and over half are delaying marriage but will live with a romantic partner (Henig, 2010). Indecisiveness in decisions and commitments has become common among emerging adults.
Gender and cultural differences. Cultural and ethnic groups have been noted to have particular rites of passage shaping when and what constitutes gendered adult roles (Arnett, 2000; Nelson, 2003). Work by Nelson, et al. (2007) found gender differences among emerging adults existed, noting that women tend to favor norm compliance. Likewise, other researchers (Bynner, 2005; Hendry & Kloep, 2007) have indicated emerging adulthood may be a “luxury” not available to individuals with lesser means, who are also often racial minorities.

In a poll of emerging adults, Arnett and Schwab (2012) found 78% agree that a college education is a key to success in life. Gender and cultural difference has impacted emerging adult college attendance. Some researchers (Hendry & Kloep, 2010) maintain emerging adulthood characteristics are predominately present in middle class young adults pursuing higher education. Despite cultural, ethnic, gender, and social class limitations (Arnett, 2000; Bynner, 2008; Nelson, et al., 2007), a majority of individuals considered emerging adults have enrolled in colleges and fit the emerging adult developmental conception. Anderson (2003) noted an increase in racial diversity on college campuses. Since more minorities have increasing access to college offerings in a variety of settings and platforms, higher education has become an experience to which most youth and emerging adults aspire on their path toward gainful employment (Furstenberg, Rumbaut, & Settersten, 2005).

Summary of common characteristics. Common characteristics of emerging adults have included delays in western industrialized nation normative adult decisions and commitments, increased exploration, and increased freedom and opportunities, resulting in increased stress (Arnett, 2000; Asber, Bowers, Renk and McKinney, 2008).
Although Arnett (2000) felt these characteristics were consequences of emerging adulthood, Hendry & Kloep (2010) preferred to coin them as factors leading to adulthood. Nelson and Padilla-Walker (2013) contended that even though these common characteristics exist among emerging adults, variations exist in the extent to which characteristics manifest themselves. One commonality of emerging adulthood examined in this study is attendance at an institution of higher education.

**College in the Twenty-First Century**

The National Center for Education Statistics in 2009, indicated that more than 60% of young people in the United States pursue higher education. Significant changes have occurred impacting the manner and mode in which collegiate institutions facilitate learning and development experiences. Literature reveals college attendance in the 21st century is impacted by work responsibilities, ethnicity, sex, as well as expanded instructional approaches and learning situations (Pascarella & Terenzini, 2005). The societal changes and economic concerns of recent years, in addition to technological advances have created many challenges for educational institutions.

**Challenges**

Colleges in the 21st century have faced challenges in multiple areas. Changing enrollment demographics, increased economic pressures, and evolving instructional delivery platforms have resulted in institutions questioning their appropriate role and responses to these challenges.

**The role of higher education.** Traditionally, the role of higher education institutions has been “to generate and transmit knowledge” (Levinson, 2010, p. 211). For that purpose to occur, university leaders seek to identify the characteristics and
educational needs of the population they serve. The preferences, needs, and the diversity of emerging adult college students are key components influencing the decisions made by university administrators and instructors. Lowman (2010) pointed out, however, that in the 21st century universities are businesses which also have a responsibility to communities, shareholders, and their graduates to generate revenue, which sometimes muddies the original, traditional purpose of higher education. Institutions purport a mission, and in modern universities that mission has grown more and more complex. The role of higher education, when it comes to the emerging adult population, is also complex. Institutions of higher education are charged with the task of educating as well as being a conduit of currency. Lowman (2010, p. 237) also pointed out “knowledge is itself a currency”, essential to the success of the emerging adult population.

Since a significant number of emerging adults are involved in higher education, these institutions play an increasingly valuable role in shaping the emerging adult population. Donoghue & Stein (2007) found emerging adults perceive their experiences in college as a significant part of becoming an adult. Emerging adult students do not enter college as “blank slates” ready to be filled. They carry with them characteristics formed through societal influences, environmental experiences, and normative pressures (Pascarella & Terenzini, 2005).

The role higher education institutions play with emerging adult students is sometimes viewed from a consumerist perspective. Reagan (2012) recommended that it is best for both lecturers and students to forge a relationship in which they fulfill an obligation in the learning process. The role of the university from this perspective is that it functions to facilitate student learning.
Technology and education. Advances in technology have impacted learning in all educational settings. Kruger (2000) acknowledged today’s student expects technology to play a critical part in their instruction. “Students know that digital technology represents the tools of their time as people growing up in the early 21st century” (Prensky, 2010, p. 99). Many emerging adult students have become quite facile with using technology to meet their needs. Richardson (2012) purported students today turn to the internet and on-line resources for answers to questions more frequently than consulting their college instructors.

New technologies have increased the use of on-line methodologies for all courses. Most traditional colleges have course management systems available such as Blackboard, Angel, or Moodle, which can be used as course tools and a resource medium. One of the challenges universities are currently facing is to decide which educational settings are most beneficial to students and when they are best used. Collegiate courses are no longer restricted to a specific setting or time with the onset of globalization and technological advances (Deed & Gomez, 2010). Paradoxically, the increased technological advances have enhanced learning options, but also have produced learners who expect fast-paced multilayered media and are increasingly disenchanted with traditional lecture (Barkley, 2010). “Technology allows instructors to tailor educational resources to the diversity of learning styles, cultural differences, skill levels, motivations, disabilities, and educational objectives of an increasingly pluralistic student body” (O’Banion, 1997, p. 66). Prensky (2010) cautioned educators to view technology as a tool with the role of supporting pedagogy.
Technology may not always be used to best meet students’ needs. Increased economic belt-tightening in higher education has resulted in utilization of larger lecture hall arenas and cost-saving formats such as on-line or blended coursework. For instance, Parry (2012) notes that financial conditions at state universities have forced course sections to be collapsed into fewer, larger classes often exceeding 300 students. These settings are not always conducive learning environments for all learners. Pascarella and Terenzini (1991) found that in the collegiate setting, class size is less significant if the instructional goal is acquisition of subject matter content, but is increasingly significant when the instructional goal involves student motivation, attitudes and high-level cognitive processing. In an experiment exploring the use of technology, Virginia Tech’s Professor Boyer gained immense popularity in his technology driven course, resulting in an enrollment of close to 3,000 students. He was perceived to have successfully engaged and instructed students (Parry, 2012). The challenge remains for each institution to find the balance of technology use to most effectively reach the emerging adult population they serve.

**Student engagement.** “Education, at its core, requires one mind engaging with another, in real time: listening, understanding, correcting, modeling, suggesting, prodding, denying, affirming, and critiquing thoughts and their expression” (Hieronymi, 2012, p. 34). Increasingly, student engagement has become a performance indicator for quality assurance in the higher education realm (Matthews, Andrews, & Adams, 2011). Engagement in today’s collegiate classes necessitates that students “make sense and meaning out of new information and connect it to what is already known”, which typically involves active learning (Barkley, 2010, p. 5). Astin (1985) contended that a
college student’s learning was proportional to their involvement in the learning process. Colleges and instructors need to consider the type of engagement, as well as the quality of interactions, and quantity of time spent in learning situations.

Interactions, both formal and informal may serve as a vehicle to integrate a student engagement in an institution in an effort to avoid attrition (Tinto, 1993). Both the institution and the instructor are challenged with the responsibility for meaningful connections in the higher education learning experience. In a review of studies involving collegiate retention, Tinto (1993) found research evidencing direct connections between student involvement, learning, and remaining in school, thus increasing future potential and productivity.

Creating engaging learning situations given the challenges of changing student demographics, the social setting of colleges and universities, economic issues, increased federal and accreditation mandates, and the diverse body of emerging adult learners is a daunting task. Such a task is tackled piece by piece, yet with the end product ever in sight: educating emerging adults.

**Student stress and anxiety**. Another challenge faced by higher education institutions is providing healthy learning environments. The transitional issues and acceptance of heightened exploration within collegiate settings can cause emerging adults to experience a great deal of stress. Asber, Bowers, Renk and McKinney (2008, p. 482), found 69% of emerging adults reported having excessive levels of stress. These students have increased freedom, while experiencing increased academic demands (Bland, Melton, Welle, & Bigham, 2012; Howe & Strauus, 2000; Thompson & Green, 2002). Stress and anxiety may serve as a serious roadblock to effective learning experiences.
(Conrad, 2006; Guo, Wang, Johnson, & Diaz, 2011; Ji & Zhang, 2011). Coupled with the stress of academic issues is economic pressure concerning future employment (Gudmunson & Zuiker, 2012). Arnett and Schwab (2012) surveyed many emerging adults who desired college education but reported being limited by a lack of resources, which inhibited their ability to go to college, especially those of lower socioeconomic status and minorities.

**Instruction**

The twenty-first century higher education institution is charged with educating an increasingly diverse student body which possesses the common element of transitioning from one phase of life into another. As noted earlier, exclusive of returning adults, most college students are considered to be within the emerging adulthood developmental phase and are experiencing instability, as well as exploring adulthood possibilities and career path options (Arnett, 2004). Some are unsure of how their education may apply to their life’s direction or even what that direction should be. The college instructor can serve as a guide, facilitator and model for emerging adults as they transition into new experiences (Polk, 2006; Alutu, 2006). The college instructor can also serve as added support for emerging adults, increasing their resiliency and positive mental health. Research by Bland, et al., (2012) found that college students recognize the support of family, friends, and teachers to be the most significant coping strategy for dealing with college pressures and stress. This sense of support can emanate through the teaching and student engagement processes. The function of higher education faculty is to use professional knowledge and skills, in order to take actions that could reasonably be expected to
facilitate learning for students with whom they have a learning and teaching relationship (Regan, 2011, p. 20)

**Teaching and student engagement.** Appropriate teaching functions promote high-quality student learning (Vermunt & Vermetten, 2004). Teaching functions include “presenting and clarifying the subject matter”, “creating and maintaining a positive motivational and emotional climate for learners” and “steering students’ learning processes” (Vermunt & Vermetten, 2004, p. 363). The processes of teaching and learning are intricately intertwined; however, teaching without learning ends up as simply talking (Barkley, 2010). Effective teaching involves a social process of engagement. There is a “reciprocation that inevitably binds teaching and learning; that is, not only do teachers teach and students learn, but teachers must also learn as the students do” (Polk, 2006, 23). In collegiate classrooms, learning typically takes place in a social process (Matthews, Andrews, & Adams, 2011). Teachers are most effective when using appropriate strategies for emerging adults in a positive social setting. “The teacher apart from having a good knowledge of the subject matter should be conversant with management of the learning process to achieve the optimal” learning outcome (Alutu, 2006, p. 45). Much of what occurs in current and future classrooms rests upon the shoulders of the instructors who are challenged to motivate, energize, facilitate and engage students both individually and corporately. Institutions of higher education should be challenged to aid their instructors to continually sharpen their teaching skills and widen their strategies, as these educators interact with emerging adults looking for direction, guidance and instruction.
Effective instruction takes planning. According to Gagné (1985), instruction involves designing external events which purposefully facilitate learning. Those learning events need to be designed with specific learners’ varied needs in mind. This process does not automatically occur; rather, it takes effort on the instructor’s behalf to know their students as well as their content. The learning process is more effective when, “Educators investigate styles to devise complementary learning environments and to teach students more adaptive styles to enhance learning and motivation” (Schunk, 2012, p. 478). “Congruence occurs when students’ learning strategies and teachers’ teaching strategies are compatible; friction occurs when this is not the case” (Vermunt & Vermetten, 2004, p. 363). Further, the instructor who understands the unique development of emerging adults is most likely able to construct an academic setting which facilitates learning by engaging students, and challenging them to achieve their academic potential.

Engagement often stems from the instructor’s efforts. “The extent to which the teacher is engaged might be a strong predictor of student engagement and, subsequently, student learning” (Handlesman, et al., 2005, p. 190). When the instructor makes the effort to investigate and learn more about their students, they then are more likely able to apply principles such as those found in Universal Design for Learning (UDL), using flexible methods of presentation, expression and engagement (Rose & Meyer, 2002).

**Instructional Means.** Lecture has been the most common means of disseminating information in the college classroom (Pascarella & Terenzini, 1991, 2005). Weld (2002, p. 490) stated, “Equating instruction with lecture presumes that all students are alike in what they know at the outset, how they learn, and what they take from
lessons.” He purported that part of successful instruction is getting to know students’ frames of reference and abilities, and then setting the stage for learning by designing strategies to inspire student interest and motivation. In reviewing numerous studies, Pascarella & Terenzini (1991) found lecture to be a less effective approach than discussion when the goal of the instruction was critical thinking and problem-solving rather than transmission of facts. Nilson (2010) recommended that when using lecture, incorporating breaks for student activities helps keep students engaged. Even if lecture is the main medium for lesson delivery, the instructor must work to set the stage, gain attention, and engage varied, diverse learners (Weld, 2002).

Means of instruction can involve an array of strategies and approaches other than lecture. Researchers have suggested that active student involvement in collegiate courses has the greatest impact on acquisition of course content (Barkley, 2010; Nilson, 2010; Pascarella & Terenzini, 2005). “Learning is a dynamic process that consists of making sense and meaning out of new information and connecting it to what is already known. To learn well and deeply, students need to be active participants in that process” (Nilson, 2010, p. 94). Svinicki (2004) recommended designing activities that enhance learning through rehearsing, organizing, visual representation, and recognizing key concepts or relationships.

**Student motivation.** Dembo and Seli (2008) contend motivation involves internal processes that propel behavior. Student motivation is tightly linked to their self-regulation. “One of the major differences between successful and less successful individuals… is that successful individuals know how to motivate themselves…” (Dembo & Seli, 2008, p. 11). The more students can understand their preferences and
patterns for learning, the more likely they are to succeed academically. Students who are motivated willingly regulate their activities toward monitoring and accomplishing learning tasks (Pintrich, 1994). Collegiate learning success is motivationally influenced through both student interest in the content and the method of delivery (Krätzig and Arbuthnott, 2006). Optimally, instructors serve to both motivate and create the instructional environments that set the stage for learning. Students are also more likely to engage in the learning and memory processes when they feel content has value (Schunk, 2012).

**Phases of learning.** It behooves instructors to be aware of the learning process as they attempt to establish efficient and effective learning situations. An effective instructor influences each of the four phases of learning identified by Gagné (1985): 1) receiving the stimulus, 2) acquisition of input, 3) storage and retention, and 4) retrieval or recall (see Figure 2). When creating the learning environment instructors should be aware of factors influencing the learning process such as, “reinforcement strategies, memory process, concept formation, problem solving, and creativity” (Alutu, 2006, p. 45). Gagné, Briggs and Wager (1992) suggest that Gagné’s model for designing instruction (Figure 2) creates necessary conditions for the learning process, including nine instructional events that can be adapted for use with various learning styles and instructional modes (Figure 3). Those events include: gaining attention, informing the learner of objectives, stimulating recall of prerequisite learning, presenting stimulus materials, providing learning guidance, eliciting the performance, providing feedback about the performance, assessing the performance, and enhancing the performance (Alutu, 2006, p. 47). Gagné’s model for designing instruction and phases of learning
follow an information processing framework. The instructional and learning style and preferences of emerging adults, viewed from the information processing perspective, provide an instructor with a foundation for understanding effective learning for emerging adults. An effective instructor will impact each phase of learning by designing developmentally appropriate instruction for learners with varied preferences.

![Diagram of Gagné's phases of learning](image)

**Figure 2.** Gagné’s phases of learning. Gagné’s model for how a student learns depicted by key instructional phases.

Gagné’s model for designing instruction (Figure 3) is clearly impacted by students’ preferences. Using methodology most preferred by students will attract them and assist in the flow of instruction, thus enhancing learning. Individual preferences for the delivery of instructional elements serve to influence the effectiveness of the learning process and recall.
Figure 3. Model for designing instruction. Gagné’s model for how instruction is best presented follows a flow pattern for instructors and is illustrated in the graphic layout of instructional steps.

Timing of instruction. In addition to the methods and strategies used for college instruction, the timing of instructional delivery within a class session, or term, may be pivotal for optimal student engagement and success. Shouppe and Wile (2011) explored literature which assessed how the time of day impacted instruction and student achievement, but little further research has been conducted on the most effective timing of instruction within a class or college semester. Understanding that college students are in a maturing process, one collegiate program addressed the timing issue by creating a “just in time” framework where the university adjusted procedures and instruction as student needs changed throughout the term (Macken & Bishop, 2009). The concept of presenting key instruction at developmentally appropriate times takes into consideration optimal memory recall. Presenting content at a specific time in the class or time in the term may affect participant responses to learning situations. According to the serial
position effect (Ebbinghaus, 1913), information processing may be more effective at the beginning or end of a class or semester.

When considering the timing of content presentation, the emerging adult in a collegiate setting tends to become more stressed and sleep deprived as the term progresses. Mehl & Conner (2012) noted in daily diary studies, trends reveal stress and lack of sleep impacting responses. This raises the question of what type of instructional strategy may be most effective not only in individual classes but also as the semester progresses.

**Instruction summary.** The results of what happens in the classroom stems from the educator and the atmosphere established. Regardless of the educational or philosophical bent of the institution or educator, it is the instructor who comes face-to-face with the students; the instructor will set the stage for student engagement and learning. Certain behaviors and techniques consistently emerge when examining master teachers, including the following: “communication skills, creativity, professionalism, pedagogical knowledge, thorough and appropriate student evaluation and assessment, self-development or lifelong learning, personality, talent or content area knowledge, and the ability to model concepts in their content area” (Polk, 2006, p. 23).

Batson (2010) recommends educators switch their focus from teaching to learning by incorporating active learning and problem-based structuring. Instructors should aid emerging adult students not only in expanding their knowledge about content but also by teaching strategies for effectively learning content (Weinstein & Meyer, 1991). The student in the twenty-first century classroom needs to learn how to cope with immense amounts of information and the changing nature of knowledge, so they are able to
regulate their learning (Evans, Cools, & Charlesworth, 2010). More research is needed to
determine the instructional strategies which are most effective and preferred by students,
as well as the optimal timing and mode of delivery of instruction.

**Information Processing Theory**

Information processing theory both provides a way of understanding the interplay
of students’ educational needs and instructors’ instructional strategies and methods (see
Figure 4), as well as complementing Gagné’s theory for instruction. Information
processing theory purports that learning occurs as information is received, processed,
transformed, stored, and then is available for use (Schunk, 2012). An individual’s
cognitive functioning including patterns for information processing matures as they grow
and develop (McDevitt & Ormrod, 2013). Information processing concepts serve both as
a framework for analyzing thought processes and are an integral part of understanding
cognitive development (Kuhn, 2009). Similar to the cognitive theories of Piaget and
Vygotsky, this approach emphasizes that learners need to “play an active role in
learning”, “constructing meaning” through experiences, and being a “strategic learner,
critical thinker, and skilled problem solver” (Meece & Daniels, 2008, p. 201). This
constructivist act of building knowledge and learning involves attention processes,
memory strategies, metacognition, and self-regulation (McInerney, 2005). Under this
approach, students need to be conscious about learning processes. Information
processing theory also supports an interactional view of development, emphasizing
familiarity with the steps involved in the mental tasks leading to learning (Kuhn, 2009;
Meece & Daniels, 2008).
The model of the computer has commonly been used to illustrate how individuals enter, process, and store information; however, the human mind exceeds the limitations of a machine. Information or input comes from the sensory modalities – ears, eyes, and fingers, and is entered into the sensory memory providing material to be used for learning processes (McDevitt & Ormrod, 2013; Meece & Daniels, 2008). As material is cognitively processed and transformed, it is channeled into the short-term or long-term memory from which it can be later retrieved. Barkley (2010) suggested three elements which assist in moving information from short-term to long-term memory: creating an emotional connection; presenting information in a manner so that it makes sense and fits with what students already know; and assisting students to construct meaning and personal relevance to the material. Learning, which involves processing and accessing information, can be understood as a continuum moving from perception, to attention, to labeling and lastly to assigning meaning (Bransford, 1979; Craik & Lockhart, 1972; Schunk, 2012).

**Information Processing and Learning**

Learning strategies used in the information processing approach often include techniques chosen for effectiveness in remembering, such as rehearsal, organization, and elaboration (McDevitt & Ormrod, 2013). Learning requires cognitive engagement (Damon, et al., 2008). The cognitive processes of attention, perception, and committing to short-term memory are beginning steps in information processing (McLeod, 2008). This active engagement starts with the focus of a student’s attention. The attention is shaped by the perception of the content being considered and the determination of the value of that content. Encoding, the process of committing the content to memory, then
ensues, leaving the content available for later retrieval. Bransford (1979) noted that the method by which information is processed impacts retrieval. The more closely the demand for accessing information matches the method or manner in which it was learned the more likely it is to be remembered.

![Information Processing Diagram]

**Figure 4.** Model of information processing patterns. Elements involving attention and sensory memory are depicted as part of the input process leading to encoding in the realms of short term and working memory. A display of elements impacting attention is provided as well as components which impact encoding and eventually retrieval from long term memory.

Learning occurs as individuals develop more metacognitive skills and are aware of strategies which are more effective for encoding (Schneider & Lockl, 2002). Learning strategies help students process information at a deeper level (Pressley & Harris, 2006). The type of strategies employed by students most frequently will reflect the student’s preferred learning style. By the time an emerging adult enters college, he or she will
likely have established learning preferences and self-regulatory patterns related to learning. Higher educational instructional situations generally require students to retain information; thus, involving short-term memory which calls for organization and repetition (Huitt, 2003). Knowledge about the developmental cognitive state of emerging adults and their learning patterns provides information for instructors enabling them to teach more effectively.

Attention and Engagement

Attention. Attention is considered to be a set of behaviors and processes by which an individual is able to focus upon relevant and important information key in the learning process (Davis, 2005; Meece & Daniel, 2008; McDevitt & Ormrod, 2013, Santrock, 2011). Unless the student is open and attentive to new information, learning does not occur. The following environmental factors influence attention arousal and maintenance: importance, novelty, intensity, and movement (Schunk, 2012). If something is determined to be important, it will “grab” students’ attention. If the content is novel or intense, sensory arousal occurs, resulting in heightened focus. Movement by both the instructor and students serves to heighten focus and engage students, thus increasing attention. Attention is key in moving information from the sensory register to the working memory (McDevitt & Ormrod, 2013) where it can be used, rehearsed, or transferred to long-term memory for future use.

Attention can be divided into the following categories: selective attention, divided attention, sustained attention, and executive attention (Santrock, 2012). Selective attention, focusing in on more relevant information and ignoring the less important, develops as children and adolescents mature. This developmental change, according to
Rozell, Goodman, and Johnson (2006), occurs as one’s neural system focuses processing on events deemed most “important”, based on the individual’s priorities and assumption of relevance. Divided attention occurs when more than one input splits the focus of attention and it has been shown to negatively impact the encoding into memory process (Naveh-Benjamin, Craik, Perretta, & Tonev, 2000). Sustained attention, also called “vigilance”, occurs as individuals maintain their focus or devotion to tasks over an extended timeframe. Sustained attention is characterized by an ability to detect relevant items (Oken, Salinsk, & Elsas, 2006; Sarter, Givens, & Bruno, 2001). Executive attention happens as individual’s focus become more purposeful and they attempt to regulate their responses (Holmboe & Johnson, 2005). Self-regulation, the ability to cognitively exert control over behavior, emotions and actions, stems from executive functioning (Kuhn, 2009; Rueda, Checa, & Cómbita, 2012); and is clearly more complex than other forms of attention. Research conducted by Holmboe and Johnson (2005) revealed that instruction, as well as one’s genetic background, both influence executive functioning. A person’s genetic make-up dictates capacity for potential learning. Executive functioning, housed in working memory, involves self-regulation to plan, follow through, and analyze tasks; and to hold and manipulate information in one’s mind (Rueda, Checa, & Cómbita, 2012). These functions are key in the learning process.

As individuals reach the later years of adolescence, they should have an advanced ability to strategically use attention strategies (Meece & Daniel, 2008). Late adolescents should be capable of self-regulation, including the use of strategies that help focus and maintain attention. Students in adolescence and emerging adulthood commonly are involved in multi-tasking, which distracts attention from what might be most important at
any given moment (Bauerlein, 2008; Begley & Interlandi, 2008). Today’s emerging adults are faced with myriad technological distractions constantly vying for their attention. They frequently are listening to music, while surfing the web, monitoring Facebook, and texting. They may be driving, talking with someone, or in class while doing these things. Distributing the “limited resource” of attention, which is allocated through motivation or self-regulation (Schunk, 2012, p. 172), causes low level processing. Huitt (2003) also points out that effective information processing involving short-term memory has limited units of information that can be accessed at any given time. For today’s emerging adults, attention capability hasn’t necessarily decreased; it is more tailored to meet their needs. So much information is available that selectivity in “choice, differentiation, personalization, and individualization have become…a necessity” (Prensky, 2010, p. 2).

Davis (2005, p. 2) recommended strategies for gaining attention including physical activities or demonstrations, using a novel attention-getter, interjecting humor, or personalizing by interjecting student names. All of these teaching strategies draw students into learning by attracting attention, also noted by Universal Design for Learning (UDL) supporters (Rose & Meyer, 2002).

**Engagement.** Attention and engagement are directly related; engagement is a choice to act upon a particular center of focus (McDevitt & Ormrod, 2013). Researchers have found, “Engagement not only reflects what students do but also examines the extent to which institutions actively involve students in good educational practices that contribute to high quality outcomes” ‘(Matthews, Andrew, & Adams, 2011, p. 106). The National Survey of Student Engagement reports that the college instructors’ major
influence on student engagement is directly tied to the classroom experience (Handelsman, et al., 2005). Handelsman, et al. also found face-to-face encounters within the class key since student’s time outside the class is diverted in a multitude of directions with scant time devoted to study. The college instructor can play a large role in motivating and engaging learners, helping them decipher what is the most important information to focus upon both in and out of class.

Social media engagement. We can understand what draws the attention of an emerging adult by examining their involvements. For instance, according to the Higher Education Research Institute (HERI, 2007) social networking has the attention of emerging adults. They found that 94% of first year college students utilize social media including Facebook, Myspace, and Twitter.

Colleges and instructors who desire to be on the forefront of technology, marketing, and especially instruction are utilizing new forms of reaching today’s emerging adult, such as the use of Pinterest and other forms of social media (USA TODAY College, 2012). Knowing emerging adult preferred modes of instructional strategies could strongly influence the methods an instructor may choose to garner the attention of their students. Once a student’s attention has been captured, the process of engagement can begin, and the learning process is underway.

Recommended engagement techniques. Engagement takes effort; in higher education, students’ experiences are enhanced when they are encouraged to actively participate in activities both inside and out of the classroom (Matthews, Andrews & Adames, 2011). An instructor; however, has a limited time allotted for a class, thus, a high level of planning is necessary for effective engagement. Whitney (2007)
recommends that instructors can effectively engage students by being well-prepared, using icebreakers, frequently assessing student progress, and soliciting feedback. Whitney also suggests that even something as simple as learning a student’s name can bridge a connection and establish an atmosphere conducive to learning. Thompson and Geren (2002, p. 402) recommend that instructors seek to adapt to students’ processing skills in an effort to foster students’ study and metacognitive abilities. Emerging adult learning and study habits are far from the traditional linear mode; thus, El-Shamy (2004) suggested instructors also include more options within courses, differentiate course elements, incorporate UDL technics and include a range of learning modules.

Many techniques can be used to enhance student engagement. For instance, an instructor can capture students’ attention at the beginning of class by utilizing familiar technology tools, providing some sensory grabbing element or novel icebreaking activity. An example of this might be to start the class with an on-line simulation based upon assigned reading or using the cellphone to submit a response on an online poll such as polleverywhere.com. As a class period continues educators, as well as students, may benefit from the use of technology such as iClickers, which can provide immediate assessment and increased student engagement (Powell, et al., 2011).

**Sustaining engagement.** After gaining attention, it is a challenge to sustain engagement of emerging adults in typical college classes. Chaney (2005) purports the span for maintaining attention dramatically drops following a twenty minute span, noting that even television programming typically contains segments approximately seven minutes long, and followed by commercial breaks. Chaney notes that in learning settings it may be advantageous to transfer these principles and occasionally provide students a
moment to disengage from the topic at hand. Cognitive breaks refresh the mind and enable students to regain attention, so they can process further instruction effectively.

Student engagement also is frequently a result of active learning methods such as collaborative learning, cooperative learning, and problem-based learning. By interjecting activities, showing video clips, or sharing in small group discussions instructors keep students engaged. “Considerable support exists for the core elements of active learning. Introducing activity into lectures can significantly improve recall of information while extensive evidence supports the benefits of student engagement” (Prince, 2004, p. 226).

Matthews, Andrews and Adams (2011) note the whole physical environment must be considered to sustain student engagement. “As students’ learning styles, aspirations and expectations evolve, it is clear that learning environments need to evolve with them (Matthews, Andrews & Adams, p. 107). Instructors need to remember that student engagement in a course may not always be indicated by obvious signs such as raising hands (Handelsman, et al., 2005). By creating a classroom environment which connects with students emotionally and mentally instructors engage those who were not globally engaged and need extra motivation.

Perception and Encoding

Perception. Perception follows attention in the process of receiving and inputting information (shown in Figure 4). Once material is received through the senses by hearing, seeing, or touching; then the interpretation of the input occurs, which is called perception (McDevitt & Ormrod, 2013). Perception involves assigning meaning to information (Schunk, 2012). Advances in perceptual ability result from both maturation and experience (McDevitt & Ormrod, 2013). Students attend to what they perceive to
have value. Likewise, students struggle to focus upon, or ignore outright, what is perceived to lack value. In the learning process, perception of content matter impacts the value a student places upon the content.

**Encoding.** In the academic setting instructors seek to draw students’ attention to subject matter or content. The process of developing perceptions about the content involves attaching meaning to what is presented, which then leads to its encoding. Encoding can be understood as the integration of incoming information into existing memory and preparing it for storage in long term memory (Schunk, 2012, p. 187). Encoding often is accomplished through labeling with words or pictures, enabling content to be stored in memory for later retrieval. The meaning attached through the processes of perception and encoding comes through the frameworks of organization, elaboration, and development of schemas. Encoding issues arise as emerging adults struggle to focus attention or discern importance for information placed into memory frameworks.

**Memory**

Learning occurs when content is processed and committed to memory. Storage mechanisms in the human brain consist of the working, or short-term memory, and the long-term memory (McDevitt & Ormrod, 2013). Working memory is limited to small amounts of information and short time frames, a shallow depth of memory content. Long-term memory allows people to hold information from their experiences for a longer amount of time, especially when used frequently. Information processing strategies such as repetition, elaboration, and organization are effective instructional tools because they aid in committing information to memory (Weinstein & Meyer, 1991). As displayed in Figure 4, metacognitive strategies that organize information also aid in encoding into
memory through rehearsing, chunking, classifying, categorizing and using organizational hierarchies (Meece & Daniels, 2008).

**Retrieval**

Information is retrieved from both short-term and long-term memory storage. The efficacy of information retrieval is also affected by the manner in which it was stored and what learning cues were attached in the encoding process (Schunk, 2012). According to Ebbinghaus’ (1913) serial position effect theory students are most likely to remember information presented near the beginning and the end of a sequence. This theory is echoed in the primacy and recency effect theories (Sousa, 2011). The recency effect theory states that students most readily recall items which were most recently viewed. The premise of primacy effect is that students remember the first items viewed, since they likely had increased levels of rehearsal and processing. According to research by Sousa (2011), optimal teaching occurs in approximately 20-minute intervals followed by a mental break. Such instructional division allows for increased opportunities for learning to occur using the primacy or recency effect.

**Learning Style and Instructional Preferences**

The concept of learning styles is a commonly and widely debated in education circles. Debates center on the existence, the definition and the value of learning style research. The role learning styles in relationship to student learning has been researched actively over the past four decades with increased scrutiny (Cassidy, 2004). Feder (2010, p. 4) stated, “Learning styles are preferences and tendencies students have for certain ways of taking in and processing information and responding to different instructional environments.” A group of researchers (Coffield, Moseley, Hall, & Ecclestone, 2004)
identified seventy-one different theories of learning styles. Additionally, Cassidy (2004) produced an extensive taxonomy table of learning style models. Each model is categorized by one or more of the following dimensions: instructional preference, social interaction, information processing, cognitive personality, wholist-analytic, personality-centered, cognitive-centered or learning-centered. Felder and Brent (2005) stated that effective instructors are aware of their students’ learning styles and their approaches to information processing, as these significantly impact the most useful and effective pedagogical approach.

**Learning Style Theories and Models**

Basic variables in learning style theories generally address cognitive, affective and psychological learning behaviors and preferences stemming from the following: an individual’s personality, perception, ability, and intelligence. Such preferences affect motivation, attitudes and academic success (Kazu, 2009; Krätzig and Arbuthnott, 2006). One key element in the discussion concerning learning styles is that learners have varying preferences. Felder and Brent (2005) noted diversity in student learning styles with each learning style having strengths and weaknesses; one style is not necessarily inferior to others. Such preferences can be viewed as natural strengths and can enhance learning.

There is increased debate over learning styles in the educational community, because of the lack of consensus about the definition of learning styles, and difficulties in validating accurate learning style measurement (Evans, Cools, & Charlesworth, 2010). Cassidy (2004), who completed a study producing an account of all the central themes and issues surrounding learning style theory, stated that each learning style model offers some element of validity. “There is general acceptance that the manner in which
individuals choose to or are inclined to approach a learning situation has an impact on performance and achievement of learning outcomes” (Cassidy, 2004, p. 420). Chiou (2008) emphasized findings which support previous studies, noting learning styles certainly influence college students’ academic achievement.

Although multiple learning style theories and models exist, they tend to follow these dimensions: personality of the learner; information processing by the learner; and social and situational interaction among learners (Acharaya, 2002). Regardless if the theoretical bent for understanding learning styles is cognitive-, learning-, or personality-centered (Rayner & Riding, 1997), it is understood that the individual’s learning style and preferences impact how learning occurs in any educational setting.

Learning style as a preference. Since learning can occur in varied situations, but is often preferred in a specific mode, many call learning style a preference (Kazu, 2009; Kolb, 1985; Kolb & Kolb, 2005). Learning-centered approaches to instruction include preference models which focus on individuals’ preferences for things such as the learning environment, time of day, and type of engagement (group or independent). The traditional approach to working with learning styles is to match personal preferences to complementary instruction (Pheiffer, Holey, & Andrew, 2005). This would assume these learning preferences are somewhat fixed characteristics of an individual. Kolb (1981) cautions against the fixed trait perspective in the use of learning styles; instead, he supports using the knowledge of learning style as a metacognitive self-examination tool.

Learning style from a developmental perspective. Another approach broadens the fixed view of learning styles to include the concept that learning styles are developmental and can be impacted by the environment (Pheiffer, Holey, & Andrew,
In essence, individuals can and will develop preferences for how they want to learn whether it is innate or developed. Learning can occur even if it isn’t in the realm of student preference; however, learning may not reach the maximum potential for that particular person. “Successful students know a lot about themselves. For example, they know which learning styles they prefer…” (Weinstein & Meyer, 1991, p. 19).

Identifying learning style preferences could assist with self-regulation by becoming a catalyst for development (Pheiffer, Holey, & Andrew, 2005). When a person understands how they function best, they can then regulate their learning by choosing situations and modes that are most comfortable and most productive.

**Visual, Auditory, Kinesthetic Modalities of Learning Styles**

For the purpose of this study, learning styles were defined as “preferences and tendencies students have for certain ways of taking in and processing information and responding to different instructional environments” (Felder, 2010, p. 4). The complexity of learning styles theories, which comprises how the learner concentrates on content, then processes and retains the new information in its simplest form can be categorized as visual, auditory, and kinesthetic modalities (Dunn & Dunn, 1999; Nilson, 2010). Under Dunn & Dunn’s (1999) model, students preferring to see content are considered to have visual learning styles. Individuals preferring to hear explanations and verbal discourse have auditory learning styles. Kinesthetic learners prefer tactile, experiential learning situations. Individuals tend to differ in the “sense of modality of stimuli from which they best absorb, retain, and process new information” (Krätzig & Arbuthnott, 2006, p. 238).
Active versus Passive Learning Styles

Learning requires student involvement. Kolb (1984) contends that learning is a process resulting from experience. Some students prefer learning situations where they take a passive role, while others prefer being active. Regardless of whether the learning experience is active or passive, Stewart-Wingfield and Black (2005) contend that the reflection on the experience is key to learning.

Passive learning may involve listening to a lecture, watching an audiovisual presentation, or reading (Michel, Cater, Varela, 2010). Such instruction may be preferred in courses where a great deal of information needs to be disseminated in a short period of time.

Active learning commonly involves models of instruction where students engage in activities, interact, and are physically involved in the learning process. Barkley (2010) noted that common instructional models using active learning include cooperative learning, discovery learning, experiential learning, problem-based learning, and inquiry-based learning.

Learning Style Criticisms

There is a debate among educational professionals concerning the validity of the theory of learning styles, noting that they are preferences not necessarily research proven “styles” (Pashler, Rohrer, & Bjork, 2009). Mayer and Massa (2003) also noted that research revealing learning style terminology has not been used consistently in educational literature. While most of the debate centers on assessment of learning styles and the ramifications for educators, it is generally accepted that students have preferences for the
manner in which they receive information and learn (Coffield, Moseley, Hall, Ecclestone, 2004; Kazu, 2009). Recent scholarship has created considerable agreement over the value and future of learning style theory, and it’s place in the future in the fields of psychology and education (Evans, Cools, & Charlesworth, 2010; Rayner & Cools, 2010; Sadler-Smith & Armstrong, 2009; Zhang, Sternberg, & Rayner, 2011). Cassidy (2004) emphasized that working with learning styles to promote effective learning necessitates operationalizing learning style by the establishment of clearly defined terminology as well as reliability and validity measures.

**Research on Learning Styles**

Recent research (Burgstahler, 2012; Scott, McGuire, & Shaw, 2003) suggested tailoring instruction in a more flexible format and environment to meet diverse learners’ needs. Universal Design for Learning (UDL), which is often used for learners with special needs, acknowledges individuals have unique preferences for learning based upon how they categorize information as well as plan and perform learning tasks. UDL research brings renewed attention to the need for flexible approaches to meeting individuals learning needs (Ross & Meyer, 2002). The UDL approach also recommends multiple means for learner engagement, essentially providing support for the concept of that people learn differently.

**Matching learning styles and preferences to instruction.** Many studies have revealed students have learning style preferences (Loo, 2004; Mayer & Massa, 2003; Pascal, 1973). Research also has indicated students have a more positive attitude toward the learning process and improved achievement when instructors accommodate their instruction to student learning styles and instructional preferences (Lovelace, 2005;
Pashler, McDaniel, Rohrer, & Bjork, 2009). After an extensive review of literature concerning learning styles, Pashler, Rohrer, & Bjork (2009) concluded that children and adults in learning situations will express preferences for how they would like information presented to them, however, they stress these are preferences and not necessarily the only effective format for delivery of instruction. Lovelace (2005) contended learning can occur without using preferred learning styles; however, he emphasized meta-analysis results from empirical studies of the Dunn and Dunn Learning-Style model showing instruction based upon learning styles and instructional preferences enhanced academic engagement and achievement.

**Motivation and instructional preferences.** Research with emerging adults in the college setting also revealed that student motivation is related to their instructional preferences (Garcia-Ros, Pérez, & Talaya, 2008). Being aware of preferences can motivate students to make cognitive decisions which enhance their learning potential. When emerging adults can identify their learning styles in higher education, they are empowered to develop and facilitate their engagement with learning (Pheiffer, Holey, & Andrew, 2005). Learning styles research possibly has its most important contribution through “empowering learners to use the most effective strategies in given situations” (Evans, Cools, Charlesworth, 2010, p. 473).

**Discerning What Content Matters**

Academic and personal success for emerging adults involves sifting through the stress of academic demands, determining what is most important in their classes and academic endeavors, and what content will most impact their future. This process discerns importance and emphasizes the process of making meaning from course content.
Making Meaning

“The pursuit of learning is part of a larger pursuit into the means by which meaning is made and communicated” (Wright, 2001, p.261). Kegan (1982, 1994) created a theory of meaning-making in which humans are thought to actively construct their own reality. According to Kegan, how one understands information is connected to what they know or have experienced. Ignelzi (2000) pointed out that within Kegan’s framework for meaning, some college students are dependent upon the co-constructing of meaning with other persons or sources (texts, instructors, peers, etc); while others have moved to self-construction and are able to establish their own meaning, based on personal values and experiences. College students respond to the higher education environment in different ways, which reflects developmental differences.

The classroom or learning situation can be viewed as a performance where meaning is derived from reflections upon the content communicated through spoken words, the actions witnessed, or experiences (Wright, 2001). In other words, reflection upon verbal, auditory, and kinesthetic modes of the learning performance brings content meaning.

Determining Importance

Multiple factors affect how students determine importance in learning settings such as the timing of lesson content, repetition of information and cued suggestions from an instructor. According to information processing theories, discerning what content matters is often linked to how information is connected to students’ prior knowledge (Schunk, 2012). Krätzig and Arbuthnott (2006) suggested students’ preferences and
beliefs about their abilities coupled with their memories of encoded experiences serve to motivate and engage them in memory rehearsal and other learning strategies.

**Reflection.** Reflection is a key element in discovering content importance in a collegiate class. “Reflection is an important prerequisite to making meaning of new information, and to advance from surface to deep learning” (Xie, Ke & Sharma, 2008, p. 18). The very act of having to process the material and then construct reflective statements forces students to move to higher levels of cognition, as well as cementing materials deeper into long-term memory. Reflections assist students in moving from stages of “noticing” and “making sense”, to stages of “working-with-meaning” and “transformative learning” (Moon, 1999, p. 139). Reflection allows students to gain knowledge and understanding (Deed & Gomez, 2010).

Krätzig and Arbuthnott (2006) analyzed students’ self-report responses about learning and found the following factors highly influenced students’ learning such as interestingness, availability of information, and content repetition. Students also noted that distracting environmental factors and their physical states could hinder learning. Learning was noted to be a response to the instructional environment.

**Purpose.** Damon (2008) identified the concept of purpose as a key element in not only identity development but also in achievement. What students perceive to matter in a class is connected to deeper questions of purpose. When students sense direction for their lives, again, a major task emerging adults are grappling with, that direction helps them discern immediate importance and establish steps toward appropriate collegiate engagement and achievement.
Technology and Resources

Technology’s Role in Emerging Adult Lives

Technological changes have impacted collegiate emerging adults in multiple ways, “By virtue of being born in the digital age, our students are digital natives by definition” (Prensky, 2010, p. 64). These emerging adult are living in a technology rich environment that has transformed and impacted daily life, and future opportunities, “Internet, cellphones, video games, and television have been commonplace since their infancy” (Coyne, Padilla-Walker, & Howard, 2013, p. 126.). Some have called emerging adults today the Generation M[edia] as they spend close to twelve hours a day engaged in some form of media (Roberts, Foehler, & Rideout, 2005; Coyne, Padilla-Walker, & Howard, 2013). Emerging adults are in a constant state of saturation as they are constantly connected with media (Papp, 2010). Virtual communication constantly bombards individuals through text messaging, Skyping, Tweeting, Facebooking, news flashes on personal electronic devices, Ipods, tablets, smart phones and cell phones – just to name a few mediums! According to a study of internet use, the Pew Foundation claimed that nearly 100% of emerging adult college students were internet users (Jones, 2003). Technological advances have also influenced today’s emerging adult to think globally as they are continually aware of the “worries of the world” (Bland, Melton, Welle, & Bigham, 2012).

Advances in technology serve to revolutionize teaching and learning practices in higher education by providing increased information access, and instructional efficiency and quality. The nature and scope of technological changes have already provided both academic pressure and opportunities (Gumport & Chum, 2005). The industries serving
educational institutions have made changes adapted to emerging adult preferences, such as on-line textbooks and course management sites. Students’ research modes often start and end with on-line resources as they virtually connect to their college library and other resources world-wide. Students’ perception of how information is delivered impacts their engagement and their determination of content importance.

**Technology as an Educational Tool**

Technology can be embraced as an educational tool. Some educators view technology as a means to enhance lesson content by shifting from passive to active learning, and communicating outside of class (Gumport & Chun, 2005). Prensky (2010) recommended that technology should not just be interjected into instruction as an “exercise”. He felt that technology should enhance engagement throughout the entire class. For example, research indicates students who use iClickers reported their understanding and ability to self-identify important concepts increased (Powell, et al. 2011). Technology can also assist the instructor of the emerging adult by providing on-line course management, increasing communication means, providing enhanced use of learning tools, and offering increasing means to combat academic dishonesty through sites such as Turnitin.com (Gumport & Chun, 2005). Batson (2010) recommended that instructors use some sort of digital repository, and that they insist on only using technology-enabled classrooms, then make use of the technology. Researchers (Gumport & Chun, 2005; Richardson, 2010) report that academic professionals across the country have not dramatically transformed their teaching methods and strategies despite technological advancements and opportunities. Richardson (2010, p. 6) contends “our students’ realities in terms of the way they communicate and learn are very different from
our own.” Prensky (2010) as well as Pitler, Hubbell, Kuhn, and Malenoski (2007) proposed instructors coach and guide their students’ use of technology as a means of motivating them and making content relevant. Using technology in collegiate classes can serve to enhance instruction by increasing auditory, visual and kinesthetic involvement.

Researchers are beginning to formulate studies which enhance or center instruction in the realm of social media. The use of Twitter as an educational tool was found to “engage students and to mobilize faculty into a more active and participatory role” (Junco, Heibergert, & Loken, 2010, p. 119). The use of visual technology such as video feeds can be used to engage students emotionally (Yadav, Phillips, Lundeberg, Koehler, Hilden, & Dirkin, 2011). Richardson (2012) recommends an “inside-out” approach to college teaching, putting more responsibility on students by transforming how instruction happens. Similar to team-based learning, this approach encourages higher-order cognitive skills. Teaching strategies which can demand “mastery, not just multiple-choice familiarity” (Richardson, 2012, p. 8) can include podcast lectures, voiced over PowerPoint slides, or video-based assignments which involve critical thinking and grappling with complex issues.

The use of modern technology in today’s collegiate classrooms may be an effective strategy in assisting the emerging adult in the learning process and helping them make decisions about content importance. The exact role technology should take in the instruction of emerging adults is still being determined.

**Summary and Research Questions**

Emerging adults in collegiate settings are traversing the developmental period in which they will establish foundations for many of their major life decisions and
directions. It is important to examine which instructional means and methods effectively engage collegiate emerging adults so that instructors can successfully lead these students toward academic success. Investigating the learning styles and preferred instructional methodologies of emerging adults enables instructors to guide emerging adults through their current developmental stage and educational endeavors. Research questions investigated in this study were as follows:

1. What are instructional preference patterns for emerging adults in current collegiate classrooms?
   a. What instructional strategies are reported as preferred by emerging adults?
   b. Do reported instructional preferences differ from what emerging adults claim to be most helpful in the collegiate classroom?

2. In what ways do emerging adult learning style patterns relate to their instructional preferences?
   a. Do emerging adults consistently identify their learning style?
   b. What demographic patterns can be identifiable with learning style preferences?
   c. What patterns for preferred learning styles are associated with preferred instructional strategies?

3. Which learning variables (e.g. instructional strategy, learning style preference, the timing of content presentation, technology, and type of student engagement) affect emerging adults’ determination of content importance in a collegiate class?
Chapter III

Methodology

The purpose of this chapter is to present the design and procedures of the study. As a unique developmental time period, educators also need to recognize this population as having both individual and universal developmental and educational constructs (McDevitt & Ormrod, 2013). It is vital to understand the educational needs and preferences of emerging adults as described in the literature review. Theory and practices concerning the construct of emerging adulthood are dependent upon relevant research which provides practical implications. Shadish, Cook, and Campbell (2002, p. 65) suggested that such “construct labels often carry social, political, and economic implication”, which “shape perceptions, frame debates, and elicit support and criticism”.

Research guiding educators of today’s emerging adults is of paramount importance as they determine the manner in which those emerging adults are best supported, challenged, and motivated for learning in the context of a collegiate classroom. Thus, this study sought to: 1) identify instructional strategies or methods preferred by emerging adults; 2) examine emerging adult learning style patterns; and 3) analyze influential elements in emerging adults’ discernment of what content really matters in the context of collegiate classes. Responses to these questions will inform and guide educators and build upon the theoretical constructs of emerging adulthood (Arnett, 2000, 2004) as a unique time in learning and development. A description of the subjects, instruments, design and procedures follows.
Sample/participants

Data were collected over two semesters from undergraduate, emerging adult college students in education classes at a liberal arts college, in the northeastern United States. The age range of this purposive sampling (Shadish, Cook & Campbell, 2002) matches the generalized target of higher education students 18 to 25 years old. Students who chose to participate were enrolled in 100-, 200-, and 300-level education courses (Child Development, Adolescent Development, Alternative Education or Emergent Literacy), with the majority of students being in the social science category as education majors or minors (see Table 1 for demographic information). The developmental courses and the Alternative Education course were open to any major; thus, some students took those courses to fulfill general education requirements. Sixty percent were in the first two years of study and 79% were female, representative of the population of education majors and minors as well as the general population of elective students in education courses at the school from which the data was gathered. This gender data was also representative of national trends. According to the National Center of Education Statistics, in the 2010-2011 school year, 57% of all students in the United States enrolled in college were female, which reflects a national trend of females exceeding males in college enrollment since 1988 (US Department of Education, 2012).

Instruments

Following grounded theory protocol, participants were considered a “source of knowledge” concerning their own learning patterns and preferences (Auerbach & Silverstein, 2007, p. 7). The methods for collecting data were through survey and
reflective journaling. Under this approach a series of sub samples were used to document learning preferences and patterns (Table 1).

Across the series of data collection, all participants were given opportunity to complete the survey. Reflective journal participation was required only in specific courses taught by the researcher, and limited by participants’ willingness for their reflections to be used for the study. The following response rates resulted:

- Round 1 survey participation (N=51) resulted in an 85% response rate.
- Round 1 weekly reflective journal analysis (N=36), resulted in a 95% response rate.
- Round 2 survey participation (N=42) resulted in an 88% response rate.
- Round 2 weekly reflective journal analysis (N=27) with a 82% response rate.

The Survey. The survey consisted of a self-report instrument completed anonymously (see Appendix A). Average completion time was 10 to 15 minutes. The survey consisted of eight sections of questions utilizing check-off boxes and open-ended questioning.

The first survey question instructed the participant to indicate what they found most helpful in a college class by checking off all boxes that applied from a list containing 30 methods and strategies. A blank space was provided to write in any additional methods or strategies.

The second survey question was open-ended and asked emerging adult college students to describe their personal learning style. Options for learning styles were not defined in this section for the participants; rather, space was left for students to
### Table 1

*Participant Demographics*

<table>
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<td>27</td>
<td>27</td>
<td>13  12  9  8</td>
<td>33</td>
<td>8</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>93</td>
<td>63</td>
<td>27</td>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

*Note.* Gender: F-Female, M-Male; Ethnicity: AF-African American, AS-Asian, CA-Caucasian, HI-Hispanic, OT-Other; Major: SS—Social Sciences, NS—Natural Sciences, HU—Humanities, AR—Arts, UN—Undecided
narratively document their learning style in their own words without the influence of suggested categories. Student responses were coded by the researcher as verbal, audio, kinesthetic or blended responses.

Survey question three asked students which components of their college courses they personally found most helpful. The open-ended nature again allowed participants to respond without suggested prompts, providing an inflection of their own voice, reflecting their experiences.

The fourth question assessed technology use. This assessment differed between the two rounds of data collection since the participants had only been involved in a traditional class setting. The first round of students were asked if they had ever taken an on-line course, and if so, which components of the on-line course they found to be most helpful. The goal of this question was to compare on-line versus traditional experiences and allow for implications related to twenty-first century learning. The pilot revealed that not all students had taken an on-line course, however; most had participated in a course in which on-line digital technology was used. In the second round of data collection this question was adjusted to assess which digital technological tools emerging adults perceived as enhancing coursework.

The fifth question asked how the student determined the most important information presented during a class. The purpose of this question was to provide practical information for college instructors on the positive relationship between academic success and increased attention and engagement. The answers to this question also served as a point of comparison, or cross-referencing, to student journal responses in
which they were asked to determine content and instructional importance for specific class sessions.

The sixth question sought suggestions for course delivery and content. Students were asked to provide “a pointer” for improving collegiate instruction. The question was left general to increase applicability to any instructor or class.

The seventh question assessed demographic information. The question was organized with forced choice options and gathered information such as class designation, gender, ethnicity, language, and college major. These data served to further elucidate patterns specific to any demographic variable.

The last question, number eight, requested participants to choose a learning scenario that best described them. Three scenarios were presented reflecting a category of learning style developed by Dunn & Dunn (2003); verbal, auditory, and kinesthetic (VAK). This approach to learning has been described as a learning-centered and preference-based model (Cassidy (2004). Generally, learning styles are assessed through self-report questionnaires (Krätzig & Arbuthnott, 2006). This descriptive-selective approach, however, allows the participants to reflect upon and identify their pattern and preference for learning. Controversy over the reliability of learning style measures and inventories prompted recent scholarship seeking to validate Dunn & Dunn’s (2003) VAK approach. Through qualitative meta-analysis and quantitative factor analysis, Penger, Tekavčič, and Dimovski (2008) concluded there was a clear extraction of the three theoretically expected learning style dimensions. These styles were broadly described in question eight to allow participants to most identify with one (see Appendix A).
**Student reflective journals.** Student reflective journals served as the second instrument for collecting data in this study (see Appendix B). Weekly entries were examined. Answers to journal questions were used to assess student application of lesson content, examine their learning patterns, and their determination of importance within lesson material. Validity of this approach has been documented by many researchers who note reflective journaling provides “methods for reviewing and critiquing connections between classroom learning and practical experience” (Hubbs & Brand, 2010, p. 56). “The daily diary methodology has been widely embraced because so many of the behaviors, situations, cognitions, moods, and self-concepts in which we are interested fluctuate from day to day” (Mehl and Conner, 2012, p. 148). Reflective journaling at the end of each class session served to increase deeper thinking and learning as students attempted to make meaning of information (Xie, Ke, & Sharma, 2008). When students reflected upon their learning, journaling served as a key tool in the on-going process of becoming stronger, more engaged students (Pheiffer, Holey, & Andrew, 2005).

Reflective journaling methodology used in this study was similar to daily diary methods which “allows for multiple observations per person, the ability to study simultaneously within- and between-person sources of variability” (Mehl & Conner, 2012 p. 145). This study examined the content of the journals both from a within- and between-persons approach and provided the opportunity for analysis to stem from participant’s own baseline; changes over the term were then evident.
Research design

This study was qualitative in nature, using descriptive comparative techniques stemming from a grounded theory approach, thereby allowing the phenomenon of collegiate emerging adult learning patterns to surface. “Qualitative research is research that involves analyzing and interpreting… in order to discover meaningful patterns descriptive of a particular phenomenon” (Auerbach & Silverstein, 2003, p. 3).

Observations of emerging adults in the collegiate classroom led the researcher to create a reflective journaling experience in which analysis of emerging adult learning patterns in educational situations could be investigated. The reflective journals then served as a platform for observation of response patterns and analysis of student responses. The researcher also sought to establish whether response patterns were unique to individuals only or typical of emerging adults as in similar collegiate settings. A pilot was designed, following IRB approval. The pilot stage through the conclusion of the study was documented with a series of “memos” as recommended for grounded theory analysis by Strauss (1987). These memos served to record critical findings, aid in establishing codes, and finally, assist in analyzing data (Auerbach & Silverstein, 2003; Charmaz, 2006; Creswell, 2007; Strauss, 1987). A memo example is in Appendix D.

The study employed mixed methods for gathering data: a survey and student reflective journals. The design description and use of each method follows.

Survey Design. The study used surveys to solicit learning pattern information from emerging adults. For instance, survey question number two sought to examine emerging adults’ preferred learning style patterns in their own voice: “How would you
describe your personal learning style?” (see Figure 5). Later in the survey, participants choose descriptions that most closely resembled their learning pattern.

**Figure 5.** Learning style preferences. The preferred learning style preferences consisting of auditory, visual, and kinesthetic modalities are shown in a graphic display to be interrelated.

The survey provided direct self-report answers to questions, while the journal exposed preferred instructional patterns as students chose the most meaningful class topics. The survey also sought to elucidate patterns between emerging adult learning style preferences and instructional preferences (see Figure 6).

The graphic displays in Figure 5 & 6 provide basis for descriptive qualitative analysis from survey responses. The variables shown and analyzed were categorical in nature. In the analysis phase of this study, frequencies for each variable were calculated resulting in descriptive qualitative information about emerging adult learning patterns in the collegiate setting.

The last survey question was designed to gather information which would allow the researcher to examine patterns in how emerging adults determine the importance of
class content. When a student is able to determine what content is most valuable, that information guides them in successfully maneuvering through the course.

Figure 6. Research design depicting learning preference patterns of emerging adult students. Auditory, verbal and kinesthetic learning styles are shown graphically to have a relationship with instructional strategies and methodologies.

In this study, the goal was to determine common preferences and characteristics found in the emerging adult population. Survey methodology allowed students to respond in their own voice, while revealing learning patterns and instructional preferences unique to each individual, and the emerging adult population as a whole. The use of survey methodology is recommended for estimating population characteristics (Czaja and Blair, 2005) and for capturing opinions and attitudes (Nardi, 2006).

Survey validity and reliability. Face and content validity for the survey were established by having collegiate faculty confer and establish consensus on the questions
in the survey. Content validity of data codes was based on and verified by cross checking expert literature. This occurred for the pilot study, initial data collection of survey and journal results in the Spring 2012 term, and for the second round of data collection in the Fall 2012 term, in which additional survey and journal data were collected, coded, and validated.

To establish inter-rater coding reliability, an additional researcher reviewed a selected sample of materials and its coding. When discrepancies occurred in the coding, the two coders conferred on how to code the responses. This process was continued throughout all phases of the study, establishing a 90% coding reliability on sample selections. Establishing such measure of consistency is noted as appropriate for response methodology (Armstrong, Gosling, Weinman & Marteau, 1997). Having additional parties review coding when using open-ended question techniques assisted in increasing inter-rater reliability, as noted by Nardi (2006).

**Journal Reflections.** Student reflective journals served as qualitative and descriptive means to capture what students perceived to be important in lesson content and their preferred instructional strategies. This mode for gathering data revealed students’ thoughts in their own words as they reflected at the end of each class session. Each reflective journal entry described what the student felt was the most important thing they learned about in that particular class. The entry was then coded by the instructor’s teaching strategy used to present the content which the student chose for their journal entry; for example, PowerPoint, lecture, visual display or discussion. This data was then linked back to each student’s survey to analyze student journaling responses and their
learning preferences. These reflections revealed patterns for both content and methodology used.

**Journal analysis.** The reflective journals were then analyzed to discover patterns in how class content which was perceived to be important was related to these variables: instructional strategy used; student learning style preference; timing of content presentation in the class; technology used; and lastly; the type of student engagement (see Figure 7). Cross-referencing the journal entries and survey responses served to answer the research questions.

![Diagram showing the relationship between lesson importance and various variables](image)

**Figure 7.** Research design for importance in lesson content. The relationship between the lesson importance and variable associated with the lesson are displayed.

**Procedure**

**Survey Administration.** Students enrolled in education courses were invited to anonymously take the survey, which established a buffer ID for each participant. The surveys were distributed with participation being optional and then collected all at the same time so participation choices were not evident. Consent forms and surveys were administered by a research assistant and then kept in a file cabinet in a locked room.
The instructor for the courses was not present and did not know which students chose to participate, thus, participation in the survey had no impact on students’ grades.

**Instructional practice.** The instructor followed a lesson plan for each session which was used for coding. (A sample lesson plan can be found in Appendix C.) Each lesson was designed to incorporate the following: stated objectives for that class period, interactive activities and presentations, a lecture segment, multi-media presentations, and student discussion. In each class session, the instructor included instructional segments that reflected and matched audio, kinesthetic, and/or visual preferences. For example, visual instruction was provided through lecture outlines and use of PowerPoint slides. Kinesthetic instruction was provided through activities requiring students to physically do something, such as creating a playground space; sculpting a brain from modeling clay; role playing parenting styles; creating cognitive maps; and demonstrating items which enhance biological, socio-emotional, or cognitive development in pre-school children. Audio-instructional methods were given through lecture; listening to other students’ research reports, and instructional activities such as listening to current music videos and examining how that medium may impact the developing self-image or identity of an adolescent.

**Reflective journaling.** Students in two courses (Child Development and Adolescent Development) also completed student reflective journals as part of course requirements. At the outset of the course, students were informed of the study, the objectives, procedures, and then given an opportunity to participate. Students who participated in the study agreed to have their journal responses coded and entered into a database without the instructor’s knowledge of their participation decision.
Students spent the last eight to ten minutes of class completing their journal entry in a booklet provided by the instructor (see Appendix B for a sample journal page). Mehl and Conner (2012) researched daily diary methodology and suggested such assessments be less than ten minutes long, and use paper-and-pencil formatting for ease of administration, accessibility and compliance. Each day’s reflective journal entry for this study included hand-written responses in three sections which were to be completed in the final ten minutes of class. Students were given an application type of question first, such as, “Should schools require adolescents to have a dress code? Describe how your answer concerning dress codes would impact adolescent development in social, emotional, or cognitive ways.” Second, students were asked to describe the most important thing they learned during that class and why they perceived it to be important. A list of sample entries is provided in Appendix E. Lastly, the final section of the journal allowed students the opportunity to ask the professor any question about course content or methodology. Since the journaling was done at the end of each class, systematic recall biases are reduced. Mehl and Conner (2012) recommend response immediately following a situation or event since retrospective questionnaires that aggregate experiences over time are filled with recall bias.

As data from journal entries were collected and analyzed, coding categories of student responses emerged (Creswell, 2007). Each week, data gleaned from the journals were entered into a database in a methodological process leading to constant comparative analysis (Creswell, 2007).
Grounded Theory Coding

Coding was expanded and clarified as the study progressed, typical of grounded study methodology. When using a grounded theory approach, Charmaz (2006) recommended allowing the coding process to evolve, finding “fit and relevance” for criteria as data is collected. The pilot study provided an initial framework from which focused coding emerged for the next phase of data collection. Charmaz (2006, p. 45) noted, “Grounded theory coding generates the bones of your analysis.” The analytical frame established in the first round of study shaped the path of further questioning and analysis.

Both survey and journal questions provided respondents opportunity to express personal descriptions of how they learn, which allowed for a deeper analysis of their learning styles. Such responses opened the door for *in vivo* coding where participants use terms they assume everyone shares (Charmaz, 2006). In this study, *in vivo* coding provided an opportunity to understand implicit meanings and to assist in making comparisons between data and emerging code categories (Charmaz 2006).

**Survey coding.** The first survey question directly reflected items checked, with the option for an additional open-ended response. Coding for questions two through six relied upon open-ended answers. For each set of questions on the survey, the researchers established codes for participant responses. A sample of recorded survey data from the pilot is presented in Table 2, noting question 4 was dropped since the subjects participating did not report being involved in on-line coursework. In the second round of surveys, question four was changed so that participants reported the type of technology supports for a class they found most helpful.
<table>
<thead>
<tr>
<th>Methods</th>
<th>Preferred learning style</th>
<th>Most helpful component</th>
<th>Most important information</th>
<th>Student pointers for college instructors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Debating, display examples, hypothetical problem solving, in class — Discussion, Lecture, outline/lecture, PowerPoint, q &amp; a time, quizzes, reviewing homework, Smart Board, video/media, white/chalk board</td>
<td>Auditory</td>
<td>Engaging lecture</td>
<td>Most time consuming</td>
<td>Include humor/ know the age group you are teaching to</td>
</tr>
<tr>
<td>Case studies, iClickers, cog. Mapping, Guest, hypothetical problem solving, Journaling, quizzes, reviewing homework, Smart Board, video/media, white/chalk board</td>
<td>Kinesthetic, Visual</td>
<td>Assignments</td>
<td>What is written out</td>
<td>Less text and more visuals</td>
</tr>
<tr>
<td>Display examples, hands-on projects, in class — Discussion, Lecture, PowerPoint, reviewing homework, video/media</td>
<td>Visual</td>
<td>Discussion</td>
<td>Repetition</td>
<td>Expect the students to be unfamiliar with the subject</td>
</tr>
<tr>
<td>Brainstorming, case studies, display examples, Guest, hands-on projects, Lecture, observations, peer collaboration, PowerPoint, projects, q &amp; a time, Smart Board, video/media, white/chalk board</td>
<td>Visual</td>
<td>Technology</td>
<td>Most memorable</td>
<td>Casual environment in which professor can get the students interested</td>
</tr>
<tr>
<td>Debating, Guest, Lecture, peer collaboration, PowerPoint, reviewing homework, video/media, white/chalk board</td>
<td>Visual</td>
<td>Guest speakers</td>
<td>Most time consuming</td>
<td>Further class discussion in books</td>
</tr>
</tbody>
</table>
Survey question two asked respondents in an open-ended manner to describe their own learning style. The open-ended format for this question provided the opportunity to “uncover uncommon but intelligent opinions of which the surveyor would otherwise have remained unaware” (Bradburn, Sudman, & Wansink, 2004, p. 155).

Answers extracted from survey question two were interpreted by the researcher, who sought implicit meanings which fit coding categories with auditory, verbal, and kinesthetic labels. In the second round of questioning, an additional question (number eight) was formed in an effort to delve deeper into self-identified learning style associations and preferences. The nature of question two sought elicited text, which provided descriptive participant written data. Question eight was formatted to provide extant text in which participants identified with a researcher provided learning style definition, although not labeled as such (Charmaz, 2006). The two questions, numbers two and eight, became grounds for comparing responses to the same basic question, but from data derived by both elicited and extant text.

Survey question three through six sought open-ended responses concerning the following: helpful course components, helpful technological components used in a course, how to determine importance, and suggestions for improving college classes.

Each of these were again analyzed and coded using techniques similar to those used by Auerbach and Silverstein (2003), where pre-conceived constructs relating to the research served as initial framework. The qualitative participant responses were then recorded within initial coding code categories. The first and second researchers conferred frequently on coding, clarifying and checking for rater-reliability. As the
study progressed and analysis began, it became evident that codes could be collapsed into broader thematic categories.

The second round of survey questioning was expanded to include the following headings: *Methods, Self-descriptions of Learning Styles, Helpful Components in a College Class, Helpful Technology Components, Pointers for Improving College Courses, Demographic Information (Gender, Ethnicity, Major, Class Year) and Learning Style*. These new sections allowed for discovery of more demographic information about each student. It also allowed for a comparison between students’ description of their preferred learning style and the learning style preference definition with which they most closely identified. Additionally, the expanded coding included a new description of helpful technological components within their courses.

The responses from the second round were examined and coded in a *focused coding* method, “using the most significant and/or frequent earlier codes to sift through large amounts of data. Focused coding requires decisions about which initial codes make the most analytic sense to categorize…data incisively and completely” (Charmaz, 2006, p. 57). In the second round of data collection and coding, a third movement in the emergent coding process began, *axial coding*. The researcher then compiled all coded data in a visual display to enhance analysis. According to Creswell (2007, p. 67) axial coding “assembles the data in new ways after open coding”. The resulting visual display of coding allowed for the researcher to move beyond the central phenomenon (learning styles) and explore causal conditions influencing that phenomenon.

**Journal coding.** This study utilized a qualitative grounded theory approach for coding journals, first open coding, and then selective coding, following a format similar
to framework used by Auerbach & Silverstein (2003). Students reflected in their journals about what was most important during that class session. Those reflections were then analyzed and the data was then recorded in an Access database. During the coding process, instructional preferences were noted and then grouped into learning style categories previously noted in the literature. After further analysis, however, it became evident that these patterns went deeper than categorical names. It also became apparent that the patterns were affected by whether the student was active or passive in the learning situation, the timing of the instruction in the class and the length of the class. A memo was written following the pilot, Round 1 of data collection, discussing student journaling and coding.

The instructor’s lesson plan was used as a key in the coding process. Each lesson was divided into time segments, labeled for type of instructional strategy used and type of learning style that the instruction was designed to engage. Examples of instructional delivery codes used in the journal analysis are the following: lecture, PowerPoint, group projects, media clips, and simulations. The instructional modes noted in student’s responses for important content reflected a VAK instructional style: visual, auditory, kinesthetic, or a blend of these. The codes for responses also included the time within the class that the noted item of importance occurred: beginning, middle, or end. Displayed in Table 3 is a sample of database coding from the survey journal entries.

The following excerpt is a journal coding example for learning style: “I really enjoyed learning about the diagram connecting physical, cognitive, and socio-emotional. It represented what I already know but in a more obvious fashion.” This student found
deeper meaning and understanding in visual representation which reinforced their prior learning. This journal entry was coded as representing a visual instructional preference.

Table 3

Sample Reflective Journal Coding for Spring Term 2012

<table>
<thead>
<tr>
<th>Student #</th>
<th>Instructional strategy</th>
<th>Presentation time</th>
<th>Type of engagement</th>
<th>Learning style reflected</th>
<th>Active vs. non-active</th>
<th>Class session</th>
</tr>
</thead>
<tbody>
<tr>
<td>26</td>
<td>Activity</td>
<td>Beginning</td>
<td>Group work</td>
<td>Kinesthetic</td>
<td>Active</td>
<td>7</td>
</tr>
<tr>
<td>10</td>
<td>Discussion</td>
<td>Middle</td>
<td>Group work</td>
<td>Kinesthetic</td>
<td>Active</td>
<td>4</td>
</tr>
<tr>
<td>11</td>
<td>Media clip</td>
<td>Middle</td>
<td>Non-active participation</td>
<td>Auditory, Visual</td>
<td>Non-active</td>
<td>5</td>
</tr>
<tr>
<td>19</td>
<td>Student report</td>
<td>Beginning, middle</td>
<td>Non-active participation</td>
<td>Auditory</td>
<td>Non-active</td>
<td>11</td>
</tr>
<tr>
<td>36</td>
<td>Lecture, PowerPoint</td>
<td>Middle</td>
<td>Non-active participation</td>
<td>Auditory, Visual</td>
<td>Non-active</td>
<td>3</td>
</tr>
</tbody>
</table>

Another example reflecting verbal learning style and personal application is illustrated in the comment following a discussion on parenting, “The most important thing I learned today is the amount of thought and maturity and knowledge it takes to raise a child. Honestly, I am very nervous about having a child in the future.” This student’s attention was centered on a verbal approach to the topic, and then the content was personally applied to their life. It was coded as representing a verbal instructional preference.

Students’ comments often provided a clear depiction of the type of strategy which appealed to their learning style preferences. By the second round of journals and surveys, the coding rigor had been well established and had documented validity and reliability in the format established by Guba and Lincoln (1981). Verification in the
coding was established between researchers thus providing “trustworthiness” through credibility, transferability, dependability and confirmability (Guba & Lincoln, 1981; Morse, Barrett, Mayan, Olson, Spiers, 2002). The reflective journaling design involved examining what emerging adults reported as most helpful components in collegiate classes which also provided a reflection upon preferred instructional strategies.

**Methodology Summary**

Using data from both the pilot and the second round collections, the study sought to accomplish these goals: to examine emerging adult preferences for instruction and learning; to determine the manner in which emerging adults are best challenged and motivated for learning in the collegiate classroom; and to establish how emerging adults determine content importance in the context of their collegiate classes. Using the data from the survey and journals, the study addressed three phases of inquiry using the following research questions:

1. What are instructional preference patterns for emerging adults in current collegiate classrooms?
   a. What instructional strategies are reported as preferred by emerging adults?
   b. Do reported instructional preferences differ from what emerging adults claim to be most helpful in the collegiate classroom?

2. In what ways do emerging adult learning style patterns relate to their instructional preferences?
   a. Do emerging adults consistently identify their learning style?
b. What demographic patterns can be identifiable with learning style preferences?

c. Are patterns for preferred learning styles also associated with preferred instructional strategies?

3. Which learning variables (e.g. instructional strategy, learning style preference, the timing of content presentation, technology, and type of student engagement) affect emerging adults’ determination of content importance in a collegiate class?

The analysis of the data from these research questions about emerging adult learning patterns will be described in the following chapter.
CHAPTER IV

Results of the Study

This study used college students’ survey responses and reflective journaling to examine emerging adult preference patterns for instruction and learning. The resulting data were analyzed in light of the research questions using a model similar to work done by Anfara and Mertz (2006, p. xxvii) who define theoretical framework as “any empirical or quasi-empirical theory of social and/or psychological processes, at a variety of levels (e.g., grand, mid-range, or explanatory) that can be applied to the understanding of phenomena”.

The theoretical lens provides a framework of ideas about the topic, which then can be followed by a methodological analysis. In this study, the lens for examining the paradigms surrounding emerging adult learning style preferences stemmed from an information processing framework. The information processing stance holds the perspective that a student’s learning is influenced by the manner in which attention and engagement occurs, and in turn encoded into memory for later retrieval. The concept of learning style preferences as proposed by Vermunt (1998) included cognitive and affective processing of subject matter, followed by the metacognitive regulation of learning. Vermunt and Vermetten (2004) also concluded that instructional practices can serve to promote high-quality student learning.

For the purpose of this study, examination of instructional and learning style preference patterns of the developmental group emerging adults was viewed through an information processing framework and analyzed using grounded theory methodology. The goal of the analysis was to inform, enhance, and develop further theory concerning
emerging adulthood and their learning patterns. The results of the study were analyzed according to the research questions and the corresponding components in both the survey and reflective journal responses.

**Research Question 1: What are instructional preference patterns for emerging adults in collegiate classrooms?**

Each individual is unique; however, developmental process patterns frequently occur around and according to benchmarks or age norms (Meece & Daniels, 2008). This study sought to establish such norms in instructional preferences for the developmental period of emerging adulthood. The analysis for instructional preference patterns of emerging adults in college classrooms was framed by the following sub questions: *What instructional strategies are reported as preferred by emerging adults?* and, *Do reported instructional preferences differ from what emerging adults claim to be most helpful in the collegiate classroom?*

**What instructional strategies are reported as preferred by emerging adults?**

From an information processing standpoint, learning occurs as attention is given to environmental events, which allows for sensory input and opportunity for perceptions to form (Schunk, 2012). Gaining and maintaining students’ attention is dependent upon using methods and strategies that those particular students find most appealing or preferred (Davis, 2005).

Responses from the survey are graphically represented in Figure 8, which shows a comparison of the first and second rounds of data collection, and then displays the combined results. Consistency in the resulting patterns is noted across rounds and the combined total survey results clearly depict trends in preferences for emerging adult
instruction. As can be seen in Figure 8, students exhibited a preference for discussion, followed by PowerPoint, hands-on activities, lecture outline, and then the actual act of lecturing. The participatory auditory strategy and discussion ranked as most preferred, followed by visual and kinesthetic modes.

More specifically, in the combined survey results (N=93), the strongest instructional preferences dominating student’s responses were class discussions with 77 of the 93 participants (83%) indicating they preferred discussion (visual) in their college classes. This was followed by 68% of the students preferring the use of strategies designated by the researcher as PowerPoint (visual and auditory), 65% hands-on projects (kinesthetic), 63% lecture outlines (visual), and 63% media clips (visual and auditory). The traditional mode of instruction using lecture (auditory) was favored by 60% of students in the survey (see Figure 8 and Table 4). The top 35% of responses are spread across all the learning style preferences with auditory holding the most preferred positions (discussion and lecture).

Replicability across rounds of students participating in the study is reflected in Table 4. The instructional strategies considered to be highly preferred by emerging adults are consistent from one round to the next.
Figure 8. Graphic depiction of survey results from Round 1, Round 2, and the Total combined surveys. The shaded bars represent data from the two surveys and the combined results.
Table 4

*Survey Results for Preferred Strategy*

<table>
<thead>
<tr>
<th>Preferred strategy</th>
<th>Learning style</th>
<th>R2</th>
<th>R1</th>
<th>Total from survey (N=93)</th>
<th>% of N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discussion</td>
<td>Auditory</td>
<td>35</td>
<td>42</td>
<td>77</td>
<td>83</td>
</tr>
<tr>
<td>Lecture</td>
<td>Auditory</td>
<td>23</td>
<td>33</td>
<td>56</td>
<td>60</td>
</tr>
<tr>
<td>Debating</td>
<td>Auditory</td>
<td>21</td>
<td>25</td>
<td>46</td>
<td>50</td>
</tr>
<tr>
<td>PowerPoint</td>
<td>Auditory/Visual</td>
<td>30</td>
<td>33</td>
<td>63</td>
<td>68</td>
</tr>
<tr>
<td>Media Clip</td>
<td>Auditory/Visual</td>
<td>26</td>
<td>33</td>
<td>59</td>
<td>63</td>
</tr>
<tr>
<td>Hands-on activities</td>
<td>Kinesthetic</td>
<td>54</td>
<td>56</td>
<td>110</td>
<td>65</td>
</tr>
<tr>
<td>Projects</td>
<td>Kinesthetic</td>
<td>26</td>
<td>24</td>
<td>50</td>
<td>54</td>
</tr>
<tr>
<td>Group work</td>
<td>Kinesthetic</td>
<td>21</td>
<td>21</td>
<td>42</td>
<td>45</td>
</tr>
<tr>
<td>Lecture outline</td>
<td>Visual</td>
<td>26</td>
<td>33</td>
<td>59</td>
<td>63</td>
</tr>
<tr>
<td>White/chalk board</td>
<td>Visual</td>
<td>19</td>
<td>23</td>
<td>42</td>
<td>45</td>
</tr>
<tr>
<td>Review homework</td>
<td>Visual</td>
<td>16</td>
<td>25</td>
<td>41</td>
<td>44</td>
</tr>
<tr>
<td>Observation</td>
<td>Visual</td>
<td>23</td>
<td>16</td>
<td>39</td>
<td>42</td>
</tr>
</tbody>
</table>

*Note. R1 and R2 refer to Round 1 and Round 2 phases of data collection.*
Do reported instructional preferences differ from what emerging adults claim to be most helpful in the collegiate classroom? Students were asked via an open-ended question what they found to be most helpful in the collegiate classroom. Some students listed a single characteristic, while others noted several as being helpful. The participant responses (N=93) were then merged by reflective themes (e.g. Professor – answers questions, explains in depth, provides clear expectations). The breakdown of the major categories are displayed in Table 4.

**Most helpful ranking.** Two-thirds of students (68%) indicated that the most helpful component for the course directly related to the professor. The resulting response pattern included personal characteristics about the professor as well as instructional proclivities (e.g. whether the professor was engaging, enthusiastic, interesting, and knowledgeable, provided good explanations and closely followed their syllabus). Students also seemed to value whether the professor was available for office hours. There was a 33% difference between the answers which related to the professor and all other categories deemed helpful.

These emerging adults reported other course components as helpful including discussion and class participation (33%), technology (18%), and resources available to students (16%). Connections to technology involved the use of media, PowerPoint, Blackboard (on-line course management system), and Smartboards. Resources, such as library data bases, may be available virtually but were not specifically stated as such.
Table 5

Survey Results for the Most Helpful Component in College Courses

<table>
<thead>
<tr>
<th>Survey question 3 – Student responses for most helpful component</th>
<th>Responses (N=)</th>
<th>% from total respondents (N=93)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professor – personal (engaging, enthusiasm, interesting, good, knowledgeable, answers questions, explains in depth, expectations – clear, sticks to syllabus-5, availability &amp; office hrs-12; instruction: (integration of techniques/methods, vary methods, writing on the board)</td>
<td>63</td>
<td>68%</td>
</tr>
<tr>
<td>Discussion -28, participation</td>
<td>33</td>
<td>35%</td>
</tr>
<tr>
<td>Technology (media/video – 5, Smartboards, Blackboard – 1, PowerPoint – 7)</td>
<td>17</td>
<td>18%</td>
</tr>
<tr>
<td>Resources (on-campus, writing center, textbook)</td>
<td>15</td>
<td>16%</td>
</tr>
<tr>
<td>Handouts (review sheets, study guides, visual aids, outlines)</td>
<td>12</td>
<td>13%</td>
</tr>
<tr>
<td>Application (real world, thoughtful assignments, hands on experience, lab, projects-5)</td>
<td>10</td>
<td>11%</td>
</tr>
<tr>
<td>Class (setting, atmosphere, small)</td>
<td>9</td>
<td>10%</td>
</tr>
<tr>
<td>Work/collaboration, interaction with others</td>
<td>7</td>
<td>8%</td>
</tr>
<tr>
<td>Writing (journals, notes)</td>
<td>5</td>
<td>5%</td>
</tr>
<tr>
<td>Examples, case studies, observation</td>
<td>4</td>
<td>4%</td>
</tr>
<tr>
<td>Personal interest – appealing to oneself, time management</td>
<td>4</td>
<td>3%</td>
</tr>
<tr>
<td>Guest speakers</td>
<td>2</td>
<td>2%</td>
</tr>
</tbody>
</table>

**Analysis comparing preferred strategies and most helpful ranking.** Patterns of association between instructional strategies and most helpful course components as ranked by emerging adults are displayed in Figure 9. Of the strategies emerging adults indicated as a preference, none were mentioned in their compilation of most helpful components. As a result, the preferred strategies listed in Table 5 were then collapsed to
align more closely with the helpful comment groupings (e.g. any item directly mentioning the instructor was then placed under the “Professor” label, and technology was collapsed to include any time using a technological interface). Resulting patterns indicated items often preferred as a strategy by emerging adults were not correspondingly ranked high as a helpful component. For example, technology related preferences occur in at least 68% of the reports as preferred but are only considered a helpful course component in 18% of the responses. The instructional strategy involving group work noted by 45% of respondents as preferred was only considered most helpful by 8% of the same group. Likewise, strategies involving application represented combined responses (hands-on activities, projects, problem solving, and labs) ranking as one of the top preferences, but not top in emerging adult students’ indication as being a helpful course component. Instead application related responses for most helpful was only included in 11% of the responses. Observation (42%) and case studies (37%) were areas preferred by many emerging adult students but correspondingly not considered very helpful (observation and case studies only noted by 4%).

Overwhelmingly, students noted the most helpful component in a course centered on the professor; however, it seems students do not always prefer learning strategies that they report as most conducive to learning. Application strategies were reported preferred by 65% of emerging adult students and 45% said they preferred to work in groups, but only 8% of the same respondents noted group work, and 5% noted independent work, as being most helpful. It is interesting to note emerging adult responses related to application activities. Application
**Figure 9.** Instructional strategy preferences compared to helpful components. Students’ reported results for their strategy preferences (survey question 1) are displayed graphically using a comparison to students’ reported helpful course components (survey question 3).
activities are often completed on an individual basis or within small groups and frequently involve projects, labs or problem solving.

**Suggestions for course improvement.** Participants were asked to provide suggestions for improving a college class (Table 6). For coding purposes, student responses (N=90) were collapsed into the following categories: activities, discussion, engagement, group work, handouts, instructional methodology and relating to the professor. It would seem that suggestions for improvement would align with the strategies found to be preferred and/or most helpful. Discussion (the most preferred strategy) and the actual instructor (most helpful component) were not the top choices for improving college courses; however, they are intricately related. The instructor directly impacts the choices for instructional methodology and does lead discussions typically.

Table 6

**Suggestions for Improving College Courses**

<table>
<thead>
<tr>
<th>Topics for improvement suggestions</th>
<th>Number of responses (Total N=90)</th>
<th>% of responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instructional methodology</td>
<td>45</td>
<td>50</td>
</tr>
<tr>
<td>Discussion</td>
<td>13</td>
<td>14</td>
</tr>
<tr>
<td>Activities</td>
<td>10</td>
<td>11</td>
</tr>
<tr>
<td>Engagement</td>
<td>8</td>
<td>9</td>
</tr>
<tr>
<td>Technology</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>Group work</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Handouts</td>
<td>4</td>
<td>4</td>
</tr>
</tbody>
</table>
**Instruction.** The largest number of responses from students involving ways to improve college courses were connected directly to the instructional methodology for the course (50%). This connection aligns with the student reported most helpful category, the professor (77%), since instructors are the ones using the strategy. Students responded that they wanted knowledgeable instructors who presented clearly, enthusiastically, and with humor. There was an emphasis on interaction, using visual aids and a variety of resources to enhance teaching. Additionally, students recommended professors stick to the syllabus as well as give options concerning group work; some wanted more group work and others wanted independent projects.

The manner in which the instructor relates to the students was an item of importance. Within the category of instruction, 31% of those responses directly related to the how the instructor communicated, citing items such as speaking slowly, providing clear expectations, due dates, feedback and clarification. According to students, instructional enhancement involved the use of discussion (14%), activities (11%), engagement (9%), and technology (7%).

**Discussion.** Discussion was noted as a means to improve college courses in 14% of student responses; additionally, 13% reported discussion as a strategy that is most helpful to them. Of these same participants, 38% noted discussion as the methodology most preferred. Discussion, valued by the emerging adult, was a preferred instructional strategy, a helpful course component, and highly rated suggestion for course improvement.

**Activities.** The suggestion for activities to improve college courses included items such as hands-on activities and projects, graded work, review of homework and having
quizzes for stimulation. Activities were highly preferred by emerging adults as an instructional strategy. In addition, 11% of students suggested this to be an area for course improvement; however, activities were not even mentioned specifically as a most helpful course component.

**Engagement.** Students noted course improvement via engagement; students felt they were engaged through motivation, as well as having varied involvement and interaction opportunities. Many of the preferred strategies were suggestive of engagement, such as discussion, debating, problem-solving, and use of iClickers. Very few emerging adult college student responses concerning most helpful course components were geared specifically toward engagement, outside of discussion (33%).

**Technology.** Course improvement suggestions were both negative and positive concerning the use of technology in the classroom. Students emphasized efficient use of Smartboards, not reading PowerPoints directly, and placing limits on the use of iClickers; however, more visuals, use of media, observations and examples were suggested as means toward improving college courses. This is consistent with the results for preferred strategies as many students indicate forms of technology as their preferred strategy (e.g. 68% for PowerPoint and 63% for media clips). When questioned about most helpful course elements, technology was only mentioned by 18% of the same students.

**Learning style accommodations.** Emerging adult students in this study had an understanding that their learning occurred in differing ways. Suggestions for course improvement included: accommodating lessons to the appropriate age group, adapting to students’ needs, and providing instruction that varied in methodology. One student commented, “use all learning style approaches”. Similarly, some helpful course
components related to the instructor using a variety of instructional techniques, and additionally, providing explanations and examples, similar to UDL.

**Research Question 2: In what ways do emerging adult learning style patterns relate to their instructional preferences?**

From an information processing standpoint metacognition, awareness, and conscious control of cognitive activity, all impact student preferences for instruction (Schunk, 2012). Developmentally, emerging adults should have increased ability to understand and monitor learning, and should be able to indicate their preferred learning and instructional styles. The following sub-questions analyze the impact of instructional preferences on emerging adult learning style patterns.

**Do emerging adults consistently identify their learning style?** In the first round of survey questioning, emerging adults were asked to describe their learning style. To examine the accuracy of the self-descriptive learning style identification, the addition of another format for determining learning style preferences was created. Two questions in the second round of surveys were added to determine if students were able to accurately identify their learning style. First, in survey question number two, students responded via an open–ended format. Based upon the descriptors they used, students’ comments were assigned a learning style category: auditory, visual, or kinesthetic. All of the students’ responses were easily identified (90%), with the exception of four, which were labeled as “other”. Next, students were asked in question eight of the survey (Round 2) to note the way they prefer to learn or process information by checking one of the three learning scenarios, presented as unlabeled descriptions of the auditory, visual, and kinesthetic learning style preferences.
Definite patterns surfaced concerning the ability of emerging adults to accurately determine their learning style preference. Displayed in Table 7 is an examination of learning style preference including a breakdown of the frequency of defined classification choices aligning with the narrative descriptions of student’s preferred learning style.

Table 7

*Examination of Learning Style based upon Student Responses*

<table>
<thead>
<tr>
<th>Narrative Description</th>
<th>% of Total</th>
<th>Classification Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identification</td>
<td>% of Total</td>
<td>Auditory</td>
</tr>
<tr>
<td>Auditory</td>
<td>17</td>
<td>2.38</td>
</tr>
<tr>
<td>Auditory/Visual</td>
<td>14</td>
<td>2.38</td>
</tr>
<tr>
<td>Auditory/Kinesthetic</td>
<td>7</td>
<td>2.38</td>
</tr>
<tr>
<td>Visual</td>
<td>19</td>
<td>2.38</td>
</tr>
<tr>
<td>Visual/Kinesthetic</td>
<td>14</td>
<td>2.38</td>
</tr>
<tr>
<td>Kinesthetic</td>
<td>19</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Total in percentages</td>
<td>100</td>
<td>(11.9)12</td>
</tr>
</tbody>
</table>

*Note:* Percentages taken from Round 2 survey responses (N=42). “Other” was used when student’s self-description did not fit auditory, visual, or kinesthetic descriptors.

The narrative format of describing learning style preferences allowed for more than one classification to be designated. The self-identification format of choosing descriptors with which they most identify served to narrow the learning style preference to a single category, as reflected in Figure 10. A stark difference emerged in these two patterns for self-identification. More students identify themselves with the classification
description of visual (71%); however, when they wrote a narrative response describing
their learning style, the responses were nearly even among the three styles: auditory
(17%), visual (19%), and kinesthetic (19%).

Pattern 1: Researcher provided classification descriptions

Pattern 2: Classification by self-descriptive narrations

Figure 10. Learning styles of emerging adults as indicated in survey results. The graphic
on the left depicts self-identified learning styles chosen from a list of descriptors, while
the graphic on the right are narrative self-descriptions of their learning styles. Ten
percent of the narratives did not fit the auditory, visual, or kinesthetic classification.

The identification with kinesthetic learning styles was consistent in both the self-
identification and narrative learning style assessment methodologies; additionally,
auditory learning style identification was fairly stable (12% researcher provided
classification aligned with the 17% narrative self-description). Large differences in the consistency of dominant learning style patterns when selection (Pattern 1) occurred for those coded with visual learning modality. A total of 71% of students opted for a visual description; however, when their narrative description was examined, only 19% offered a uniquely visual approach. Approximately 35% reported multi-preference. Of these, 28% included some modality combination including visual. This discrepancy indicates that emerging adult student preferences do not always match the actual styles they use.

**Self-identification of learning style by class year.** Of the 42 participants in this study, 11 first-year students and seven second-year students were unable to match their predominant narrative learning style preference with their defined classification learning style. All third- and fourth-year students consistently matched their narrative learning style and their chosen definition. Twenty-four students (57%) were able to consistently match their learning style preference; eight were in their fourth year of study, nine in their third year of study, and five in their second year of study (see Figure 11). Only two first-year students accurately matched their learning style preference with the style they use.
Figure 11. Percentage by year of study of learning styles consistently identified by the 42 emerging adult students in Round 2 survey data collection.

**Consistent self-identification of learning style by gender.** Less than half of the males represented consistently matched their preferred learning style to the style they identified that they used, similarly, 54% of the females consistently identified and matched their learning style (see Figure 12). Gender did not play a significant role in matching learning style preferences.

Figure 12. Percentages of consistently identified learning style preferences graphically displayed using gender categorization.
What demographic patterns can be identifiable with learning style preferences? The participants in this study attended an institution where four major divisions covered the breadth of their liberal arts experience. These divisions were used to establish codes representing participants’ majors and domain areas of study. According to the institution’s handbook, students in the domain of Arts were actively engaged in the making or performing of artworks as modes of creative invention, interpretation, expression, and discovery. Course work in the Arts domain included the areas of creative writing, dance performance, music performance, studio art, and theater performance. Humanities included coursework where students examine and reflect upon human culture as expressed in historical tradition, literature and languages, art and music, ideas, and beliefs. This included art history, classics, dance theory and history, literature, music theory and history, philosophy, religion, and theater. The Natural Sciences domain included areas of study in which students actively engaged in the process of understanding the natural world through the use of scientific methods, typically including laboratory components. Natural Science courses included biology, chemistry, exercise science, geosciences, physics, and psychology. The Social Sciences domain for this institution covered coursework studying the organizational structure of human societies including the areas of American studies, anthropology, economics, government, history, education and sociology. Student responses for instructional and methodological preferences based upon demographic criteria of major, gender, and ethnicity are displayed in Table 8.

Instructional preference responses from the second round survey results were collapsed into four major categories: group activities, individual projects and activities,
visual display, and technology. Totals were calculated revealing students’ instructional preferences connected to specific demographic variables. Items in the category of group activities were chosen 35% of the time and consisted of instructional preferences such as class discussion, collaboration, debating, brainstorming and team-based learning. The category of individual projects was chosen 29% of the time and represented items including hands-on-projects, case studies, homework, quizzes, labs, and journaling. Visual displays, were chosen 26% of the time, and consisted of items using visual methods such as a handout of a lecture outline, observation, use of a chalk or whiteboard or viewing a cognitive map. Technology, chosen 8% of the time, included items involving the use of PowerPoint, media clips, Smartboard or iClickers.

**Methodology preference.** Students who stated a preference for instructional methodologies that involved group work such as discussion, brainstorming, collaboration and team-based learning were actually 62% self-identified as visual learners. Only 26% of those preferring group work were kinesthetic, and surprisingly 13% were auditory, even though all of these activities involved listening to one another (Table 8).

**Gender.** When choosing their preferred instructional preference in a class session, more female students (38%) than the males (29%) were in favor of the instructional methodology involving group related activities. The second leading methodology for females was individual projects (30%), then visual displays (26%), followed by a very small minority choosing technology related methods. Males were more evenly divided in their preferred methodologies which were also led by group activities (29%), then a tie between individual projects (27%) and visual display (27%), and lastly technological methods (18%).
**Ethnicity.** The majority of students participating in the study were Caucasian (79%) and favored both group activities (27%) and individual projects (24%) in class sessions (see Table 8). African American participants most favored group activities (2%) as well. Asian participants favored visual displays (3%) closely followed by group activities (2%). Hispanic students who participated in the study also preferred group related activities (2%) followed by methodology using technology (2%).

**Major.** Students considered in the social science (57%) and natural science realm (24%) indicated a strong preference for group activity followed by individual projects, visual displays, and lastly technology related methodology. Arts and Humanities, who represented 5% of those participating in the study also favored group activities (see Table 8). Another 10% of students in the study were undecided about their major and also weighed in significantly having group activities as their favored methodology.

**Visual display and technology preference.** Since much of technology involves a visual display, the researcher considered the impact of the results when technology related methods and strategies were moved to the category of visual display. The inclusion of technology in the visual display category would result in visual display leading in rank over all other categories for preferred methodology when choosing importance in a class. This combination would change from the third most favored methodology used in determining importance to the first. Interestingly, each of the items listed in the visual display and technology categories involves the mediation of an instructor, once again showing the importance of the instructor in emerging adult preference patterns.
What patterns for preferred learning styles are associated with preferred instructional strategies? Participant responses indicate that there is a disconnect between what they note as a preferred learning style and their preferred instructional strategy. In the second round of survey results, student self-identified learning styles were compared with student responses for their preferred strategies (Table 8). As previously noted in Table 7, more students identified themselves as visual learners (71%) than auditory (12%) or kinesthetic (17%) when choosing a classification that most fits their learning style. In contrast, the display in Table 8 reveals that visual learners most readily choose strategies involving group activities: class discussion, collaboration, debates, group work, games, brainstorming, team-based learning, and student reports. Those who reported that they were visual learners also highly favored individual projects followed by visual displays. Interestingly, visual displays were not indicated as the most favored strategy for students who had self-identified as visual learners.

Those self-identifying as kinesthetic learners also most readily chose group activities followed by technology as preferred strategies. Understanding that this segment of students prefers active learning, such choices for strategies are reasonably compatible.

Emerging adult students who indicated audio as their preferred learning style also choose group activities as their leading preferred strategy. This pattern also seemed compatible when considering a great deal of communication and discourse is needed for these areas which require listening. For example, auditory skills would be useful in discussion, collaboration, debating, brainstorming and listening to students’ reports.
<table>
<thead>
<tr>
<th>Instructional preference – totals</th>
<th>Learning style</th>
<th>Gender *</th>
<th>Ethnicity</th>
<th>Major</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A</td>
<td>V</td>
<td>K</td>
<td>M</td>
</tr>
<tr>
<td>Group activities: Class discussion – 35, Peer Collaboration- 23, Debate- 21, Group work –21, Games – 15, Brainstorm-13 , Team-based learning –12, Student reports-8</td>
<td>19</td>
<td>93</td>
<td>39</td>
<td>26</td>
</tr>
<tr>
<td>Individual projects/Activities: Hands-on projects – 28, Projects –26, Case studies -17, Homework – 16, Problem solving activities – 10, Quizzes -14, Labs – 6 Journaling –4</td>
<td>13</td>
<td>83</td>
<td>23</td>
<td>24</td>
</tr>
<tr>
<td>Technology : PowerPoint -30, Media Clip -26, Smart board -20, Iclickers-13</td>
<td>6</td>
<td>67</td>
<td>33</td>
<td>16</td>
</tr>
<tr>
<td>Combined Visual Display &amp; Technology</td>
<td>20</td>
<td>148</td>
<td>48</td>
<td>40</td>
</tr>
</tbody>
</table>

Note. The numbers in this table represent the raw scores from all second round reflective journal entries (N = 414) cross-referenced with demographics from the corresponding student self-report surveys (N=27). Instructional preferences: A-Auditory, V-Visual, K-Kinesthetic; Gender: M-Male, F-Female; Ethnicity: AF-African American, AS-Asian, CA-Caucasian, HI-Hispanic, OT-Other; Major: SS – Social Sciences, NS – Natural Sciences, HU – Humanities, AR – Arts, UN – Undecided.
Research Question 3: Which learning variables (e.g. instructional strategy, learning style preference, the timing of content presentation, technology, and type of student engagement) affect emerging adults’ determination of content importance in a collegiate class?

Emerging adult students enrolled in collegiate courses focus upon information they deem as most important. This study sought to understand how learning variables impact the determination of importance. Students’ responses from both the survey and reflective journals assisted in analysis of determining importance. The survey sought narrative commentary on how to determine importance, while the reflective journaling required students to choose what they thought was most important from an actual instructional session. One emerging adult student commented in their survey response, “The most important information is usually what allows me to better understand the lesson.” Another student said, “I look for concepts and general information that I can flesh out with details at a later time.” Still another student noted the importance of information if “it can be applied to other classes/disciplines I deem very important”.

In reviewing students’ journal responses about what was most important in classes throughout the semester, themes surfaced: instructional strategy used, the student’s learning style preference, timing of the content presentation, technology used in the presentation of material or lesson, and the type of engagement the student had.

Categories influencing emerging adult’s determination of importance in a collegiate class are displayed in Figure 13. The next section will address the part each of these categories play in determining importance: instructional strategy, learning style preference, timing, technology and type of engagement.
Figure 13. Students’ reflective journal responses noting content importance. Percentages are provided for the amount of times each item was used in determining importance in emerging adult reflective journal entries.
**Instructional Strategy.** Student reflective journal responses concerning the most important part of the class are displayed in Table 9. The majority of items determined as important were a result of a class activity (18%), discussion (16%), the lecture (15%), or a visual presentation such as media clip (13%) or PowerPoint (9%). Combinations of all visuals (media clip, PowerPoint, and visual examples) collectively accounted for the highest mode for determining importance (31%).

Table 9

*Reflective journal responses indicating strategy for most important part of class*

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Engagement</th>
<th>Focus</th>
<th>Responses (N)</th>
<th>% of total N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Activity</td>
<td>Active</td>
<td>Group/individual</td>
<td>125</td>
<td>18%</td>
</tr>
<tr>
<td>Discussion</td>
<td>Active</td>
<td>Group</td>
<td>110</td>
<td>16%</td>
</tr>
<tr>
<td>Lecture</td>
<td>Passive</td>
<td>Professor</td>
<td>107</td>
<td>15%</td>
</tr>
<tr>
<td>Media clip</td>
<td>Passive</td>
<td>Professor/group</td>
<td>90</td>
<td>13%</td>
</tr>
<tr>
<td>PowerPoint</td>
<td>Passive</td>
<td>Professor</td>
<td>62</td>
<td>9%</td>
</tr>
<tr>
<td>Visual example</td>
<td>Passive</td>
<td>Professor</td>
<td>61</td>
<td>9%</td>
</tr>
<tr>
<td>Handout</td>
<td>Passive</td>
<td>Professor</td>
<td>52</td>
<td>7%</td>
</tr>
<tr>
<td>Student report</td>
<td>Blended</td>
<td>Individual</td>
<td>28</td>
<td>4%</td>
</tr>
<tr>
<td>Intro/motivational</td>
<td>Passive</td>
<td>Professor</td>
<td>22</td>
<td>3%</td>
</tr>
<tr>
<td>Quiz</td>
<td>Active</td>
<td>Professor/individual</td>
<td>18</td>
<td>3%</td>
</tr>
<tr>
<td>Simulate/role play</td>
<td>Active</td>
<td>Group</td>
<td>8</td>
<td>1%</td>
</tr>
<tr>
<td>Reading</td>
<td>Active</td>
<td>Individual</td>
<td>7</td>
<td>1%</td>
</tr>
<tr>
<td>Personal application</td>
<td>Active</td>
<td>Individual</td>
<td>6</td>
<td>1%</td>
</tr>
<tr>
<td>Example-related</td>
<td>Passive</td>
<td>Professor</td>
<td>4</td>
<td>1%</td>
</tr>
<tr>
<td>Guest</td>
<td>Passive</td>
<td>Professor/other</td>
<td>1</td>
<td>0%</td>
</tr>
</tbody>
</table>
In the classes examined, survey result responses (Table 10) indicated determining importance was accomplished by reliance upon emphasis and repetition. Such reinforcement was typically accomplished through lecture and discussion activities.

Table 10

*Self-report Survey Results for Determination of Importance in the Collegiate Classes*

<table>
<thead>
<tr>
<th>Student response</th>
<th>Total from survey (N=93)</th>
<th>% of N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emphasis/repetition/highlighted</td>
<td>67</td>
<td>72%</td>
</tr>
<tr>
<td>Time consumed on topic</td>
<td>11</td>
<td>12%</td>
</tr>
<tr>
<td>Interesting</td>
<td>5</td>
<td>5%</td>
</tr>
<tr>
<td>Written out/notes/outline</td>
<td>5</td>
<td>5%</td>
</tr>
<tr>
<td>Assigned reading</td>
<td>4</td>
<td>4%</td>
</tr>
<tr>
<td>Memorable</td>
<td>2</td>
<td>2%</td>
</tr>
<tr>
<td>Exam-related</td>
<td>2</td>
<td>2%</td>
</tr>
<tr>
<td>Applicable to other subjects</td>
<td>2</td>
<td>2%</td>
</tr>
<tr>
<td>Videos</td>
<td>2</td>
<td>2%</td>
</tr>
<tr>
<td>Discussion</td>
<td>2</td>
<td>2%</td>
</tr>
<tr>
<td>PowerPoint</td>
<td>2</td>
<td>2%</td>
</tr>
<tr>
<td>Allows for better understanding</td>
<td>1</td>
<td>1%</td>
</tr>
<tr>
<td>Intuition</td>
<td>1</td>
<td>1%</td>
</tr>
<tr>
<td>Definitions</td>
<td>1</td>
<td>1%</td>
</tr>
<tr>
<td>Emailed content</td>
<td>1</td>
<td>1%</td>
</tr>
</tbody>
</table>
**Learning Style Preference.** Emerging adult learning style preferences are reflected in their choice of instructional strategies when journaling about what course content delivery was most meaningful (noted in Figure 14). The participants completing these surveys were enrolled in two different course formats: in one format students met once a week for a three-hour class, in the other format students met twice weekly with each class lasting eighty minutes. Across all survey results, the preferred strategy used in determining importance was auditory (49%) with visual a close second (45%). Comparing the combined survey results (see Figure 14) and results from the varied class lengths (see Figure 15) revealed some differences. In the combined survey the style preferences were nearly equal. When examining the differing classes, students who attended the course meeting twice-weekly more readily favored auditory. The students were also typically first- and second-year students, with no fourth-year students in attendance at all. The three-hour course also favored auditory but not with as great of a margin and with more even distribution across all three areas: auditory (17%), visual (9%) and kinesthetic (7.5%). Most preferred a blend of auditory/visual (36%) and all three modalities (16%). These results reflect a difference in that the longer period in for a single class session desire a mixture of instructional preferences.
Figure 14. Instructional strategy preferences reflected in journaling. Emerging adult students wrote about the most important components of the class session which were analyzed by the instructional strategies used. In some instance, combined preferences were noted (e.g. visual/auditory).

Course meeting twice weekly

Course meeting once a week

Figure 15. Instructional strategy preferences as reflected in journaling about course content importance for the course meeting twice-weekly (80-minute sessions) as compared to once a week (3-hour sessions).
**Timing of Content Presentation.** Emerging adult students’ choices for what course content was most important were examined in light of the timing of the content presentation within the class period: whether the class met weekly for three hours or twice weekly for one hour and twenty minutes. Each class was divided into thirds (beginning, middle, and end) based upon the time allotted to cover the content in the instructor’s lesson plan. After students wrote in their reflective journals about what they felt was the most important thing they learned during that particular class session, each answer was then coded by topic and timing in the class schedule.

*Time in the individual classes.* Student responses indicated instruction for the most important content occurred in the middle of the class approximately 43% of the time; however, some items were also covered in more than one timeframe during the class. As shown in Figure 16, the combination of middle and ending time frames coupled with the middle time frame, accounted for 50% of the placement for content importance.

![Pie chart](chart.png)

*Figure 16.* Determining importance based upon time of content delivery within a class. Percentages from total journal entries (N=415) show responses dependent upon the presentation time of content within a particular class that was deemed important by emerging adult students.
When determining importance filtered by the length of the class, timing was found to have a less dramatic influence (Figure 17); however, the middle of the class still was the favored time spot with both class lengths.

![Figure 17. Comparison of course content considered to be important in courses meeting once- versus twice-weekly. Reflective journal responses were tallied to determine and compare timing of content presented within a class then analyzed according to the length of class sessions.](image)

**Absences.** Because absence from class impacts student learning, it is an important factor to consider. Absences also account for a timeframe in which reflective journals were not completed, resulting in missing data. Total emerging adult student absences are displayed in Figure 18 and show the majority of students missing course work occurred 45% of the time between the middle and end of the term. The other portion of absences is spread almost evenly between the beginning and middle of the term and significant in terms of cumulatively impacting student success.
Technology Used. Common in college classrooms today are modern technology tools such as computers, wireless Internet and digital projectors. Such tools serve to enhance lectures, providing visual displays, examples, and simulations. Participants in this study were directly asked in survey question 5 how they determine the importance of content within college class. Survey results displayed in Table 10 revealed that while determining importance only 5% of items noted related to technology. Similarly, only 18% of students indicated the use of technology in survey responses as being most helpful (displayed in Figure 9). As noted previously, combinations of all visuals (media clip, PowerPoint, and visual examples) actually accounted for 31% of student’s journal responses in determining importance.

In the survey, open-ended questioning was used to determine what type of technological components used in college courses students found to be most helpful. Emerging adults who responded (Figure 19) noted that PowerPoint (31%) was the most
helpful, followed by media clips/movies/video (17%), Smartboard use (14%), iClickers (12%), computers or laptops (8%), and Blackboard (8%). Other items noted were email, internet, Prezi, and Youtube.

Figure 19. Most helpful technology choices as reflected in survey results. Percentages were listed for emerging adults’ technology choices noted as most helpful.

Students responded in their reflective journals concerning what technology means to them as emerging adults. Common themes emerging in students’ writing included technology as a means for communication, news source, entertainment, socialization, learning, and leisure. Very few students specifically connected technology modes with learning in their narrative; however, when discussing preferred strategies, content delivery, and things most helpful for learning, there always seems to be a direct connection back to technology.

Emerging adults also indicated that technology sometimes hinders their social abilities developed through face-to-face interactions, as well as the ability to live in the moment. Some students reflected that the constant technology connection distracted
from interactions with people within physical proximity. Comments made concerning emerging adult student use of technology are displayed in Table 11.

Table 11

Technology Comments

<table>
<thead>
<tr>
<th>Notable emerging adult comments on technology</th>
</tr>
</thead>
<tbody>
<tr>
<td>As technology has increased, social cues have changed, as well as language. We become more impatient because things are always at our fingertips.</td>
</tr>
<tr>
<td>Technology has affected my life tremendously. To start, communicating with friends and family has drastically increased. When I was younger at school, I could not talk to my parents until I was home. Now, I speak with my parents several times a day. Also, school work and information has become much more available to find. Efficiency is essentially how technology has changed my life.</td>
</tr>
<tr>
<td>I use technology for too much in my daily life. All my news comes from my computer and smartphone use. I’m lost without a cell phone so I’m usually always walking with it in my hand. But it’s very useful to me. I use it for many things.</td>
</tr>
<tr>
<td>I cannot go an hour without checking my phone or Facebook. I rely heavily on texting and instant messaging when it comes to communicating with my friends and sometimes family. I’m not sure how we’d survive without technology!</td>
</tr>
<tr>
<td>Every time I go back to my room, one of the first things I do is get on my computer and check my emails and Facebook. Technology has a large effect on us. We rely on it for communication. We are always checking our phones to see if we got a text or something. Technology takes away from our lives, in a way.</td>
</tr>
<tr>
<td>Technology has become a means for entertainment, socialization, learning, and leisure. Technology hinders the abilities that are developed through face-to-face interactions, such as how to conduct yourself in public or in a group.</td>
</tr>
</tbody>
</table>
Figure 20. Type of engagement involved in the instructional methodology for the class content chosen as most important. These activities were reflected in student journals.

Whole class activities were favored by students and require either active or non-active participation. For example, the whole group of students may actively be involved in a discussion or passively watch a media clip. Results shown in Figure 22 indicate that emerging adults in this study most often felt that the most important class content was delivered while they were not independently actively engaged per se (41%) since they were either watching an instructor provided media clip, listening to a lecture, and/or viewing a PowerPoint. These activities required student’s attention; however, they weren’t “doing” something other than filling a non-participatory role of listening. This result also coincides with the finding that a majority (49%) of students prefer auditory or visual (45%) methodology (Figure 14).
Figure 21. Number of responses for each activity level of student involvement in content considered to be important during a college class. Student’s activity level was either non-active, active, or a blended combination.
Summary of Results

Overarching Findings

Gaining the attention of, and effectively engaging, emerging adults within the college setting has great potential to enhance their learning and future opportunities. The literature review indicated that learning increases with attention and engagement (Davis, 2005; Meece & Daniel, 2008; McDevitt & Ormrod, 2013, Santrock, 2011; Schunk, 2012). Patterns of instructional preference, learning style, timing of content, technology, and type of engagement were examined.

As shown in Figure 22, preferred learning styles influence emerging adults’ reactions and interactions with technology use and timing of content preferences. The combination of the three learning variables (learning style preferences, reactions to technology use and timing of content) impact both student engagement and instructional preferences. The combination of all five learning variables (student engagement, technology, learning style preferences, timing of content, and instructional preferences) serve to establish emerging adult learning patterns in college classrooms. These learning patterns reciprocally impact and serve to reinforce engagement habits as well as instructional and learning preferences.

Emerging adult student learning preference patterns are displayed in Table 12. When questioned in the survey, most students responded that their preferred learning style was visual (74%) but within the specific context of learning for the course they were enrolled in, journal analysis revealed most preferred discussion-oriented style instruction (83%), a verbally dominated style. Across all responses for learning preferences and
helpful course components, discussion remained a steady feature. Discussion typically engages the whole group in relatively non-active or a blended non-active and active format. Student engagement is reflected both in the timing of the content presentation and the manner in which technology enhances that presentation. Once material is presented, discussion typically ensues, providing more emphasis, resulting in the preferred instruction providing instructional cues and emphasis, leading students toward the assumption that the most important information occurs mid-class session. These patterns are discussed more in the next chapter.
Figure 22. Emerging adult learning patterns in collegiate classrooms. This display shows that learning style preferences, instructional preferences, timing of content presentation, technology, and student engagement all impact emerging adult learning patterns in collegiate classrooms. It also indicates learning style preferences also impact instructional preferences and student engagement.
Most helpful components of college courses. Emerging adult students indicated the most helpful components of the course were related to the professor. The study results also showed college course improvement suggestions were connected to the instructional methodology used, again, relating to the instructor. The influence of the instructor and the manner of presenting the content outweigh most other elements in the learning process for the classes and participants in this study.

Although some of the literature reviewed (Barkley, 2010) noted students were increasingly disenchanted with traditional lecture, this study found emerging adult students heavily relied upon the instructor’s delivery of material to know what was important. Students also most often preferred discussion of course materials. The lecture format was rated in the survey by 60% of participants as a favored mode of instruction and third highest in journaling for determining content importance (Table 12). One element to note was that lecture in this study frequently did not stand alone but was enhanced with the use of discussion and visuals or technological tools. Lecture often served to provide emphasis, which 72% of students reported as their vehicle for determining importance (Table 12). A disconnect is revealed as students do not seem to prefer what they say is most helpful to them in a learning situation.

Finding the most meaningful and purposeful ways to deliver content to emerging adult students increases their engagement and learning potential. Results from this research serve to inform and enrich faculty understanding as they seek to connect emerging adults and content in current college classrooms.
Table 12

Summary of emerging adult learning pattern preferences in collegiate classrooms

<table>
<thead>
<tr>
<th>Learning style (researcher provided) classifications</th>
<th>Instructional preferences</th>
<th>Determining importance</th>
<th>Timing in class for most important content</th>
<th>Most helpful technology</th>
<th>Engagement preferences</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Survey</td>
<td>Journal</td>
<td></td>
<td>Group-related</td>
</tr>
<tr>
<td>Visual</td>
<td>74% Discussion</td>
<td>83% Emphasis</td>
<td>72% Activity</td>
<td>18% Beginning</td>
<td>24% PowerPoint</td>
</tr>
<tr>
<td>Kinesthetic</td>
<td>14% Technology</td>
<td>68% Time</td>
<td>12% Discussion</td>
<td>16% Middle</td>
<td>46% Media</td>
</tr>
<tr>
<td>Auditory</td>
<td>12% Application</td>
<td>65% Interest</td>
<td>5% Lecture</td>
<td>15% End</td>
<td>20% Smartboard</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Combinations</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Visual</td>
<td>63%</td>
<td>17% Computers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Instructor-related</td>
<td>60%</td>
<td>Blackboard</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Summary

Effectively educating emerging adults in the collegiate setting is a multi-faceted and challenging task. Matching strategic instruction and learning modalities with the diverse population of emerging adult students undoubtedly aids in enhancing motivation and engagement. The literature reviewed for this dissertation noted that the teacher makes the difference in the learning situation (Polk, 2006). Discussion, whole group activity, and technology are all highly favored by emerging adult students, which aligns with the information processing theory: information needs to be clarified, elaborated upon, classified, and processed in order to be firmly encoded in memory. The more the instructor for the emerging adult understands their students’ learning patterns, the more potential there is for effective use of class time, appropriate teaching methodology, and increased learning. The researcher was able to discern emerging adult learning patterns from the results of this study. Additionally, student engagement and instructional preference had a reciprocal role in producing and being influenced by learning patterns.
CHAPTER V

Conclusions and Recommendations

This study was designed to investigate emerging adult learning patterns in collegiate classrooms through an information processing lens. Using qualitative research methods and grounded theory analysis, the following learning variables were examined: learning style, instructional preferences, timing of content presented in the college class, technology favored by emerging adults, and student engagement.

The methodology presented used in this study was chosen as the best mechanism to describe the phenomena of emerging adult learning preference patterns, from a grounded theory approach; as such it is limited in that only tentative causal patterns can be described. This method, however, does prove to be useful in enhancing the manner in which this population can be viewed in the educational setting. As noted by Auerbach & Silverstein (2003), such methodology views the population studied as “experts” rather than just participants. Examining emerging adults’ “voices” via the survey and reflective journal responses, allows us to better understand their learning experiences personally and corporately. The survey and journaling results provided a relevant analysis of what emerging adult preferences tell about their actual educational needs, both individually and as a developmental group.

The following research questions framed the study: 1) What are instructional preference patterns for emerging adults in current collegiate classrooms? 2) In what ways do emerging adult learning style patterns relate to their instructional preferences? And lastly, 3) Which learning variables (e.g. instructional strategy, learning style
preference, the timing of content presentation, technology, and type of student
engagement) affect emerging adults’ determination of content importance in a collegiate
class?

**What are instructional preference patterns for emerging adults in current collegiate
classrooms?**

All developmental levels are marked by certain norms. Theoretically, the phase
of development coined as emerging adulthood also has norms and patterns of common
behavior. This study sought to understand the norms related to the learning experience of
collegiate emerging adults. Part of understanding emerging adult learning patterns was
1) determining if these students could identify their learning styles, and then 2) discerning
if these self-identified learning style preferences impacted their choices for instructional
methodology.

**What instructional strategies are reported as preferred by emerging adults?**
The emerging adults participating in this study consistently preferred class discussions,
which are group-related, and often combined with the use of visual displays and
technology. The next most preferred strategies involved hands-on activities, watching
media clips, working on projects, reviewing homework, and peer collaboration. Each of
these top preferences involved active engagement by the student. Most of these also
involve and function under the guidance and direction of the instructor. Additionally,
these preferred strategies were represented across all learning styles (e.g., discussion
being auditory, hands-on-activities being kinesthetic, and PowerPoint being visual).
The participating emerging adult preference patterns for modes of instruction also reflected a combination of style preferences, for example media clips, preferred by 63% involved both visual and auditory modality for instructional delivery. Many preferences aligned into multiple categories, with one primary mode of preferred learning style being coupled with another secondary style. Likewise, hands-on activities were most frequently considered kinesthetic, but depending on the type of activity involved, the project may also combined auditory or visual components of learning styles. Learners reported that they attend more readily when instructors use combinations of methodology, which is evident in emerging adult learning patterns. Such patterns serve to enlighten instructors as to methodological preferences of emerging adult students. Offering choices within a course, multiple strategies, and using UDL methodology could appeal to the emerging adult learner (Council for Exceptional Children, 2005). Using preferred methodologies should increase attention, engagement, and motivation, which in turn should enhance learning potential.

**Do reported instructional preferences differ from what emerging adults claim to be most helpful in the collegiate classroom?** The researcher found that items identified as most helpful in a collegiate class, as reported by participating emerging adults, do not directly mirror their instructional preferences. Rather, students’ determination for most helpful course components were often inversed from what they noted as preferred strategies. For instance, participating emerging adults indicated the most helpful component for courses was instructor-related (77%), while those same students indicated a lower preference for instructor-related strategies (lecture 60%,
providing visuals 35%, white/chalkboard use 45%, and reviewing homework 44%).

Similarly, discussion was listed second in the ranking of most helpful (by 33%) but ranked top as a preferred strategy (83%). It appears that emerging adult preferences for instruction may not always be the same as what these students claim as most helpful to their learning as evidenced in survey responses. More research is needed into why this disconnect between preferences and noted helpful components exist.

This research also raised implications about emerging adult students’ sense that technology was a helpful component of the learning experience. The noted order of items considered most helpful might be viewed differently if the category of technology was expanded to include campus resources and additionally the categories of application and group work, which are often accessed or done in a virtual manner. For instance, if categories of technology, campus resources, application, and group work were combined, would account for 36% of the total selections indicated as being most helpful in a collegiate course, and also represent 70% of the respondents’ voices. This combination of technology resources and their use would make the category of technology as important in student responses for determining helpful components as the professor.

In what ways do emerging adult learning style patterns relate to their instructional preferences?

Key in understanding the learning patterns of emerging adults is the concept that this population is able to identify how they learn best, that they understand their personal learning style, and that they can identify what is most helpful in their learning process even when their actions do not reflect such knowledge. The role of demographics and
instructional preferences also should be considered. For instance, more females preferred group activities than males, and more males than females preferred technology-related instruction.

**Do emerging adults consistently identify their learning style?** Emerging adults in this study provided a narrative describing their learning style. Participants identified their learning style by choosing a description (auditory, verbal, or kinesthetic) that most closely described how they learn. Class year and gender were found to contribute to whether students consistently match their learning style self-description and defined modalities. Patterns emerged showing that students in their third and fourth year of college study indicated a stronger understanding of their learning patterns. These upper level undergraduates’ self-descriptive narratives consistently aligned with their chosen learning style classifications. In contrast, only 8% of first-year students were able to consistently match their learning style preference, which possibly reflects their metacognition, and in turn, learning potential.

It was also found that emerging adult females were more able to consistently match their learning style preferences to practice. This may indicate females tend to be more aware of their needs and preferences in the collegiate classroom, especially in later years of study.

**Are there demographic patterns in learning preferences?** The demographic attributes of gender, ethnicity, and major were examined for learning pattern preferences among emerging adults participating in this study. Students indicated they desired visuals in their lessons such as using a lecture outline, observations, white or chalk boards
and especially PowerPoint, media clips and Smartboards. Overall, the majority preferred strategies involving group work such as discussion, brainstorming, collaboration and team-based learning. Activities in the classes examined typically involved physical movement, generally considered kinesthetic, yet 62% of these same participants who preferred group-related work were self-identified visual learners.

**Gender.** More females preferred group-related methodologies while males were more evenly divided in their preferences between group activities, individual projects and visual displays. Males also showed more of a preference for technological methods than females.

**Ethnicity.** In terms of ethnicity, the majority of the participants were self-identified as Caucasian; however, some ethnicity-related pattern differences appeared. Since the sample was very small for non-Caucasians, only tentative findings were reported. Caucasian students demonstrated a preference for group activities, as did African American students. Asian students most favored visual displays and Hispanic students not only preferred group-related activities but also technology.

**Major.** Students identified as social science and natural science majors most readily favored group activity. As stated earlier, visual displays in the courses examined for this study, frequently involved the use of technology. When technology and visual displays were combined, the results changed, resulting in social and natural science majors then preferring both technology and visual displays.

**What patterns for preferred learning styles are associated with preferred instructional strategies?** Emerging adult student participants overwhelmingly self-
identified as being visual learners, but frequently chose instructional strategy preference items that more readily fit kinesthetic learners. Such a disconnect was not uncommon across all learning styles. It seemed the favored areas for instruction were ones that could be adapted by all learners. For example, group activities were favored by all types of learners even though such methodology leans more toward being kinesthetic. A great deal of verbal communication, however, is likely needed for the success of most activities. In addition, many activities require a form of visual display, thus, drawing in visual learners to the kinesthetic group activity.

Patterns for preferred learning styles and preferred instructional strategies reveal that a blending of each may best fit the emerging adult population. They display definite preferences but also show they are capable to flex to adapt to a particular situation.

**Which learning variables (e.g. instructional strategy, learning style preference, the timing of content presentation, technology, and type of student engagement) affect emerging adults’ determination of content importance in a collegiate class?**

Emerging adult students make decisions each class, whether consciously or not, concerning what content presented is key to their learning experience and deserves their attention. To investigate these perceptions, participants in this study were asked to complete reflective journals discussing what they found to be most important within each class period. Analysis of these reflections concluded that each of the following categories are influential in the determination of importance in the college class: instructional strategy, learning style preference, timing of the content, technology used, and lastly, the type of engagement required from the student.
**Instructional strategy.** It was determined that emerging adult students’ discernment of importance was largely dependent upon methodology. Large cross sections of participants indicated that activities and discussion were important while fewer students noted importance when the lecture or media clips were used. The item that most readily gained a student’s attention was also then deemed important.

**Learning style preferences.** Nearly half of all the participants favored auditory content delivery when determining importance. Additionally, the vast majority of participants valued content which was delivered using a combination of instructional methods which appealed to a variety of learning styles. This reflected the desire for a combination of strategies, e.g. shorter class sessions, and lesson delivery in an auditory manner. These students were cue-driven, wanting to be “told” what was important. Upperclassman in the longer class sessions particularly desired more variety in strategies and methodology conducive to all learning styles.

**Timing.** The timing of the content found to be important was frequently placed within the middle of the class session (43% of the time). This pattern held both in classes meeting weekly and twice-weekly. According to information processing theory (Schunk 2012), the serial position of information impacts learning tasks. Items covered at the beginning, and the end of a list were most readily recalled. In this situation, neither the beginning nor the end of class content ranked most highly in students “recall” of importance. Students are easily distracted by events pre and post class session. The time it took for emerging adults to focus was possibly a more significant learning pattern since the middle of the class session was noted to hold the most important content.
Technology. Emerging adult students did not rate the use of technology on the top of their preferred methodology nor did they indicate technology as being most helpful. Overall, when questioned about determining importance, technology was not discussed. There are several possible explanations for this pattern. Technology plays an important role in the lives of emerging adults, thus it may be assumed that technology is “just part” of their existence, not an item to be singled out. As many researchers have stated, emerging adults are living in a digital age and are saturated with technology (Coyne, Padilla-Walker, & Howard, 2013; Prensky, 2010), e.g. emerging adults are so connected to technology that they cannot imagine being without it, and thus take it for granted as a tool. When questioned specifically about technological tools, however, these students found the following to be most useful: PowerPoint, smart board, and media clips. This finding was further supported when students were asked to provide an opinion on preferred instructional methods. PowerPoint was the second and media clips was chosen as the fifth most useful methods. In further support, in more reflective journals, technology was included several times in students’ narratives describing content they considered most important. Out of 387 journal entries, media clips were included 90 times (13%) in descriptions of importance and PowerPoint was included 62 times (9%). It also should be noted that visual examples made up 9% of the means for determining importance in the reflective journals. Often visual examples were displayed using technology such as a Smartboard. Additionally, quizzes were sometimes given via the use of iClickers; however, no student specifically made a clear connection that they associated these means with a technological delivery that assisted them in determining
importance. Overall, many of the strategies not specifically noted as technology but still involving it, were utilized when choosing importance in lesson components.

**Student engagement.** Student engagement was considered in two ways in this study: first, the continuum from individualized to whole group work, and second, the level of participatory activity required. Each of these types of engagement were examined via comments based upon student preference, whether they found that type of engagement helpful, and whether importance was determined while involved in that particular form of engagement.

**Group activities.** Emerging adult students indicated more importance when instruction involved the entire class, with less importance given to special activities or small group activities. Paradoxically, a total of 45% of the students stated they specifically preferred group strategies while only 8% of students reported group work as a helpful component in the class. It appears the special projects and group activities access and sustain students’ attention, but are more likely to be considered time fillers or busy work, and therefore not of great importance in learning content.

**Activity level of engagement.** The majority of students indicated the most importance was reflected in passive modes of methodology. Emerging adult students also reported that the instructor’s involvement helped determine importance. Emerging adults in the study connected importance with what the instructor lectured or cued to them as being important. They also showed dependence upon visual cues (e.g. 63% preferred visual instructional strategies such as outlines of lecture or text and media displays), which require a low level of involvement.
Limitations of the Study

A limitation for this study was the possible bias in the self-report nature of the survey and the limited journal reflections from one type of course. As noted by Krätzig and Arbuthnott (2006), self-report questionnaires may be situational based upon the environment in which they are given. In survey research, students also may report in a manner that is not a direct reflection of how they actually perform (Narde, 2006).

An additional limitation was the action research nature of the study, in which the primary researcher also was the instructor in this setting. While this aspect is a limitation, it also serves to provide consistency in instruction and assurance that multiple modes of instruction equally occurred as a result of careful lesson planning. The findings in this study are also bounded by the relative simplicity of the model of learning styles proposed by Dunn and Dunn (1999). This perspective, while limited was necessary as a foundation for grounded theory development for an emerging adult learning theory paradigm. In addition, using real settings, instead of controlled experimental environments, provided an avenue to contribute to theory as well as enhancing practice (Lodico, Spaulding, & Voegtle, 2006).

The qualitative research design employed in the study does not allow any causal claims. Rather, relationships are explored in a descriptive manner. Many factors such as: who the instructor was, the demographics of the participants and the residential setting may have influenced the participation and experience of the participants. Even though consistent procedures were employed in terms of data collection and varying methodology used, the results may have varied some in another setting. Additionally, the
study used a purposive sample; the participants were largely education majors or minors from one private institution who were reporting in their journals following lessons taught by a single instructor. Since students from a wide variety of courses and disciplines were not sampled, caution needs to be taken in generalizing the results to all emerging adults. Instead the results are applicable to emerging adult students in situations typical to the students participating in this study.

To make stronger generalizations about the emerging adult population, a more systematic sampling of the study population would be needed. Caution should be taken in generalizing to the whole population since the sample lacks cultural diversity because a limited number of minorities participated in the study. Since there were only a few international students participating in this study, it is limited to a Western cultural perspective. Empirical generalizations can be made specific to the unit of population studied with the goal of eventual transference from the small sample to the larger population of emerging adults following more investigation, thereby assisting in creating substantive theory about emerging adult learning patterns (Charmaz, 2006).

**Recommendations for Theory**

**Emerging Adults from a Developmental Perspective**

Traditional markers of adulthood are increasingly unclear (Arnett, 2011). In recent years, there has been an increasingly accepted perspective of a developmental period between adolescence and adulthood. This study appears to uphold the view that ‘emerging adults’ should be considered in a developmental period that is marked by orderly and sequential changes (Knox, 1977) as evidenced in their learning patterns.
When considering emerging adult learning pattern changes, a potential distinct area of developmental change was revealed in differences between learning style patterns as noted by class year. An improved self-awareness concerning learning appeared to exist when comparing of first- and second-year students to third- and fourth-year students. The results of this research tentatively identify a progression of maturity as years in college accumulated, which was observed in self-reflection of the population studied. Emerging adult students in their first or second year of study had a more difficult time consistently identifying their learning style, maintaining consistent attendance, and determining patterns of importance. In their last two years of study, upper level students appeared to become more in tune with themselves, their preferences, and learning patterns. It is possible that a college campus provides opportunity for students’ exploration in the learning context, more solidification in the role as a student, and more stability in personal and academic patterns and routines, many of which are related and vary according to task.

Even though some students seem to have preferences for a particular learning style, they might not always learn best by using that style. The potential disconnect between student preferences and choices for most helpful strategies support the theory of a developmental stage called emerging adult, which is characterized with the following norms: heightened exploration, instability, and multiple life choice options.

**Emerging Adult Learning from an Information Processing Framework**

**The learning process.** This study began from an etic analysis (Lett, 1990) of information processing constructs in emerging adult students’ learning. The researcher
examined student learning patterns for evidence of information processing concepts: attention and engagement, perception and encoding, and finally, retrieval of information learned. It was perceived that students preferred instructional methodology that most readily gained their attention and engagement. They were able to use short term memory to retrieve information they encoded in the duration of the class session.

According to theorists and researchers (Bransford, 1979; Craik & Lockhart, 1972; Gagné, 1985; Schunk, 2012), learning occurs in an information processing framework following a pattern of receiving, processing, storing, and then retrieving information. Emerging adults strongly favored discussion coupled with instruction, which aids in their processing of information. As individuals discuss content, they clarify, elaborate, categorize, and draw conclusions which typically results in a deeper level of processing.

Emerging adults on a college campus are immersed in new learning experiences in which they are receiving tremendous amounts of information in varied formats. There are, however, constant challenges in utilizing the cognitive processes of attention, perception, and committing new information to memory. It appears emerging adults establish patterns for learning based upon their preferences and what they perceive as valuable enough upon which to focus.

**Emerging Adulthood from a Grounded Theory Perspective.**

Once a framework for examining emerging adult learning patterns was established in the current study, it became evident that there were more concepts to be examined, such as the meaning and place of technology in emerging adult instruction.
Using grounded theory qualitative analysis, examination of student survey responses and reflective journaling led to the conclusion that emerging adults value the role of technology in their lives but also take it for granted. Patterns of technology in the learning process lead to a new theoretical perspective of the role technology plays in emerging adult learning.

**Technology as “skin”**. Twenty-first century emerging adults are living in a digital age. It appears their view of technology is akin to the concept of skin; it is always there encompassing the body, holding it together, and assisting in natural functions: protection, regulation of temperature, and as a conduit for sensations (WebMD, 2009). It might be hypothesized emerging adult students associate many of these same skin-like characteristics with technology. Based upon their survey and journal responses, emerging adults assume technology will be present and used in classrooms. Emerging adults assume information necessary for their classes and learning will be provided via technological means such as course management systems, on-line library resources, and even uploaded PowerPoints for their perusal before and after class. It is assumed technology will provide the means for course registration, for all communications concerning the course, and for submitting coursework, essentially keeping their academic and personal world functioning. Because of these assumptions, emerging adults take for granted the role technology plays in their world. Most instructors who have not been raised in the digital age have a hard time grasping the perspective emerging adults have on technology (Prensky, 2010); however, technology should be acknowledged for its dominant impact on emerging adult learning patterns.
Emerging adult learning patterns. Based upon this study, emerging adults’ overwhelmingly self-identified with the visual learning style, but most readily preferred auditory and then visual modes of instruction using discussion, lecture, PowerPoint, outlines and media clips. When kinesthetic learning activities were most favored it should be noted they were often followed by auditory and visual modes of instruction.

What students noted as very helpful components of the course did not match with their preferred instructional strategies. For instance, discussion, which was most preferred, was only ranked by a third of students as being helpful. Instructor related components of the course were listed as most helpful but were not the most highly preferred. When asked how to improve courses, students desired improved instructional strategies, which validated their response that instructors are the most helpful element in a course. Emerging adults are open to many possibilities for learning even though they often prefer the known, most comfortable options. Learning responses show a pattern for appreciating instructor explicitness concerning learning content in educational settings (e.g. preferences for visual learning style, discussion and technology, and determining importance through emphasis). They want to see and hear the essential course content. Such specificity provides clarity and security in the learning situation while other realms they are experiencing in their development are exploratory, unstable, “in-between”, and full of possibilities (Arnett, 2007).

Learning style and instruction patterns. Students who participated in this study valued interactions with the instructor, and cues from the instructor which indicated content importance. Based upon these observations, it appears emerging adult students
do desire some active learning experiences, but they also rely very heavily upon instructor-related interaction. Another dominant pattern was that students desired information to be easily accessible (e.g. lecture outlines, visuals) rather than having to actively construct knowledge via group interaction or projects. This concept is supported by 74% of the study participants preferring visual learning situations. Engagement of emerging adults should include both technology and visuals.

The importance of relationship and individualization must be noted when considering the educational setting for emerging adults. In the final analysis, the importance of the instructor to the emerging adult learning process reveals a continued pattern displaying a need for human connection in a face-paced, changing, digitally-focused 21st century learning environment.

**Implications for Instructional Practice**

**The Instructor of Emerging Adults**

The study revealed that there was a strong interpersonal relational tie to course instructors which impacted preferences for instructional interaction via discussion and group activities. These activities allowed the student opportunity for exploring new ideas, concepts and opportunities in a safe environment. The students perceived that instructors provided stability and focus while they were engaged in the course. Students elaborated on many elements connected to the instructor, which revealed expectations related to their leadership and professional activity in the collegiate setting. This study also revealed that using methods such as those proposed by UDL (e.g. presenting instructional information in a variety of formats, using a variety of instructional methods)
may be most effective for gaining emerging adult students’ attention and maintaining their engagement.

If today’s emerging adult student values the use of multiple tools in the learning process, then instructional practice for these students needs to expand and adapt strategies to meet the needs and providing them with options and choices. The use and blending of a UDL suggested techniques may be most effective.

It appears that emerging adults tend to view the instructor as the bridge to their learning. In this study, students overwhelmingly indicated the instructor was the most helpful component of the course, commenting about the instructor’s personal attributes (e.g. enthusiasm, engaging, knowledgeable) and availability. Professional development for post-secondary educators should include the use of varied strategies (e.g. workshop structure or mini-course refreshers).

Course Structure for Emerging Adults

The results of this study are in agreement with Krätzig and Arbuthnott (2006, p. 245) who noted, “learning style questionnaires can provide educators with information about respondents’ preferences or self-beliefs, and thus, might assist them in structuring learning events in ways that are more popular or familiar to their students.” Structuring collegiate courses with an awareness of student preferences will serve to increase motivation and possibly engagement.

Technology. One unique feature of today’s emerging adults lies in their assumptions concerning technology. Educators need to change their view of technology in education. Technology needs to be viewed as more than a tool interjected into
instruction. Technology needs to become the framework from which learning springs and provides individualized options and choices to meet student needs.

**Reflection.** Participants in the study completed reflective journals which provided rich qualitative data, both enhancing the study of emerging adults as a developmental group. Reflection is a tool which assists in examining what has happened and serves as a foundation from which growth can springboard. Creative and critical feedback on instruction aids in enhancing future instruction, performance, and planning.

**Future Research Suggestions**

**Expanded Sampling**

Grounded theory practice and process are establish when coded categories are saturated or when the theory may be sufficiently detailed. In the case of this study, it might be useful to continue research by using discriminant sampling (Creswell, 2007) from another group of emerging adult college students, at a different institution, to ascertain if category saturation did actually occur, or if the phenomena might differ in another location. Future directions for studying emerging adult learning patterns should encompass a wider set of emerging adults including those from other institutions and regions of the country, thereby increasing the demographics and diversity of learners represented. The results could be generalized to a greater audience by expanding the diversity of participants. Diverse student backgrounds and experiences provide a broad foundation for course improvement responses.
Developmental Differences

Differences in response patterns from first- and second-year students as compared to third- and fourth-year students may indicate a more mature understanding of learning patterns. A larger sample from a varied cross section of emerging adults would assist in seeing if this pattern was unique to these participants or generalizable to most emerging adults. Further investigation could assess the physiological, socioemotional, and cognitive factors which contribute to this deeper self-awareness.

Instructor

Based upon the results of this study, emerging adults highly valued the instructor’s role in the learning process. More information and analysis is needed to determine which instructor characteristics are most meaningful to emerging adult students (e.g. presentation skills, use of technology, personality, interest in students, consistency, or availability). Greater understanding of instructor-related behaviors which engage emerging adult students could also increase attention and inevitably learning potential.

Technology

The role of technology in emerging adult lives is intrinsic; however, students do not recognize it as such. Further study is needed to measure the impact of technology in educational efficacy (i.e. the same lesson taught with and without technology, then assessment of student interest and information retention). More investigation is needed to enable instructors without technological savvy to effectively assist students in the use
of technology in the educational context. This could enhance the instructional process and open doors to new engagement strategies.

Timing

According to information processing theory, serial position enhances memory and learning, yet, in this study the most unlikely position was found to hold the most valued content. More investigation is needed to assess the impact of lesson presentation timing to emerging adults.

Summary

Emerging adults are learners who have unique educational patterns and perceptions. Their developmental state impacts how they experiences learning in collegiate settings. The emerging adult developmental descriptors, as described by Arnett (2000, 2004), included being: in a state of identity exploration, unstable, self-focused; and feeling in-between. These individuals are also navigating a wide range of life opportunities.

As these emerging adult students mature and have more experience in the collegiate setting, they become more aware of their learning style preferences and they develop means for determining importance. Demographics only played a small role in determining learning style preferences; however the length of time in a class session impacted students’ preferences, and the most attention was focused in the middle of the class session. It was observed that many more students assumed they were dependent upon visual methodologies when they are actually impacted quite consistently, and effectively, by a balanced approach which incorporates all three learning styles. The
study also showed emerging adult attention and processing of information were closely connected to the instructor, regardless of the students’ preferred learning style.

Emerging adult responses revealed that students expected technology to be imbedded in the whole learning process. The use of technology provided a comfortable means to gain student’s attention, maintain engagement, and assist in processing course content.

In summary, learning patterns for emerging adults reveal they have preferences but are also adaptable. Additionally, the instructor’s role is paramount. Emerging adults are seeking direction and stability from the instructor both relationally and in instruction. Technology has become part of these students’ core functioning and is expected to be integral in the collegiate learning experience.
References


Davis, B. M. (2005). Bored and ignored or gained and maintained: Role of attention in beginning class. *The Teaching Professor, 19*(6), 2.


Appendix A
College Student Survey

**Reflecting Upon College Courses**

As part of efforts to investigate the learning styles and preferred instructional methodologies of emerging adults, the researcher is collecting information from student participants. This information may be used to provide formative feedback and to aid in dissemination and knowledge development activities. Please read each of the following questions and provide the answer that reflects your status or opinion. Your participation is voluntary; your responses are strictly confidential and will not be released in any way that allows an individual to be identified. Only aggregate data will be presented in any reports. If you have questions, please feel free to contact the Chair of the Institutional Review Board, Dr. Mark Rye (518-580-8308, mrye@skidmore.edu) or the Chair of the sponsoring department of this research, Dr. Susan Lehr (518-580-5142, or slehr@skidmore.edu).

<table>
<thead>
<tr>
<th>Question</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. In college classes, what do you find most helpful? Please mark all boxes that apply with a check</td>
<td>Instructor’s lecturing, Use of White boards/chalkboards, Use of Smartboards, Use of PowerPoint, Use of IClickers, Outlines of the lecture, Text Outlines, Videos/Media Clips, Guest (Expert/Professional) presenters, Group work, In-class Discussions, On-line Discussions, Journaling, Quizzes, Student Reports, Hands-on projects, Labs, Reviewing homework, Games, Team-Based Learning, Projects, Peer collaboration, Debating Issues, Hypothetical problem-solving exercises, Brainstorming, Cognitive Mapping/Content Maps, Question and Answer Times, Case Studies, Observations, Displaying Examples, Other</td>
</tr>
<tr>
<td>2. How would you describe your personal learning style?</td>
<td></td>
</tr>
<tr>
<td>3. What are the most helpful components for a college course?</td>
<td></td>
</tr>
<tr>
<td>4. What have been the most helpful technology components in your college courses?</td>
<td></td>
</tr>
<tr>
<td>5. When in a class, how do you determine the most important information presented?</td>
<td></td>
</tr>
<tr>
<td>6. If you could give a pointer to a college instructor for improving class, what would you say?</td>
<td></td>
</tr>
</tbody>
</table>
7. Complete all that apply:

<table>
<thead>
<tr>
<th>Student Status:</th>
<th>Check one</th>
<th>☐ 1st year</th>
<th>☐ 2nd year</th>
<th>☐ 3rd year</th>
<th>☐ 4th year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender:</td>
<td>☐ Male</td>
<td>☐ Female</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ethnicity:</td>
<td>☐ Caucasian</td>
<td>☐ African American</td>
<td>☐ Hispanic</td>
<td>☐ Asian</td>
<td>☐ Other</td>
</tr>
<tr>
<td>Is English your first language?</td>
<td>☐ Yes</td>
<td>☐ No</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Major:</td>
<td></td>
<td>Minor:</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Describe the type of music you most enjoy ____________________________

How often do you listen to music? ___________ Or, play an instrument? ___________

What do you prefer to read? ___________________________ Where? ___________________

How often do you read for academics? ___________ or pleasure? ___________

What do you most read? ☐ academic digital, ☐ academic print, ☐ pleasure digital, or ☐ pleasure print

Are you involved in extracurricular activities? __________ If yes, describe your activities:
________________________________________________________________________________
________________________________________________________________________________
________________________________________________________________________________

8. To gain a better understanding of yourself as a learner, it helps to reflect upon the way you prefer to learn or process information. Choose one of the following descriptions that best fits your preferences:

☐ I prefer to have information presented in pictures, diagrams, demonstrations, displays, handouts, films, flip-charts, etc. I prefer to watch someone perform a new task before I try it. I work best from lists, written directions and instructions. I like to use highlighters, underlining, colors and symbols. I prefer lecturers who use gestures. I focus on the whole picture.

☐ I prefer to listen to new information. Before I do a new task, I tend to listen to instructions from an expert. I like to study with other people, discussing and summarizing topics. I enjoy conversation and often remember the words to songs. I prefer to listen to the radio than read a newspaper. I sometimes whisper while reading and may hum or sing while working.

☐ I prefer physical experiences such as touching, feeling, holding, doing, and creating. I like to try new things, learning as I go. I like to use case studies and applications to help with understanding concepts. I sometimes role play and need to do things to understand better. I feel the most valuable information is practical. I collect things. When doing a project, I rarely look at the instructions first. I like to take things apart and put things together. I like to chew gum or eat in class and am often fidgeting.

The following information will be used to develop a buffer ID:

First Letter of Your Mother’s First Name: ______
First Letter of Your Mother’s Maiden (prior marriage) Name: ______
Last Two Digits of Social Security Number: ______

Thank you for your participation!
Appendix B
Reflective Journal Sample

Reflective Journal Entry                              Date _________

**Question 1:**

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

**Question 2:** What questions do you have from today’s lesson?

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

**Question 3:** What is the most important thing you learned today?

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________
Appendix C

Sample Lesson Plan

<table>
<thead>
<tr>
<th>Ed 200 – Child Development Lesson Plan 14</th>
</tr>
</thead>
<tbody>
<tr>
<td>Session topic: Cognitive Development in Early Childhood</td>
</tr>
<tr>
<td>Homework: Berk Chapter 9</td>
</tr>
</tbody>
</table>

**Objectives for the session:**
Students will:

- Describe advances in mental representation during early childhood including make-believe play
- Compare theoretical cognitive development beliefs (Piaget, Vygotsky, Information Processing)
- Examine social origins and significance of children’s private speech
- Discuss applications of each cognitive theory to education
- Trace the development of vocabulary, grammar and conversation skills in early childhood
- Cite factors that support language in early childhood

**Materials Needed:** Text, syllabus, handouts, readings, media clip

**Procedure:**
1. **Introduction, overview of today’s agenda:**
   - Describe the objectives for the day
   - Review last point of last class – Stages of writing – show pictures/examples
   - Opening activities & questions below:
     - Did you have an imaginary companion as a child? If so, what was your companion like? Were your parents aware of your companion? What was their attitude toward it?
     - Vocabulary swap – Move around the room, find your partner who has the match

2. **Review concepts from reading - groups of students create cognitive maps for Piaget, Vygotsky, and Information Processing (3 poster boards, display and discuss)**
   - How would classroom practices inspired by these theories complement each other?
   - How would classroom practices with these theories differ? Provide examples

3. **Activities:**
   - Worksheet – Lecture Outline
   - Memory games (use in groups)
   - Film Clips – Piaget clip 10 min., Vygotsky 10.46 min., Memory 5.27 min.

**Application: notes in reflective journals**
1. Describe “private speech”. Give an example. Do you use it, and does it serve as a self-guiding function for you?
2. What was the most important thing you learned today?
3. What questions do you have?
4. **Homework:** Read Berk Ch. 10, Toy analysis and Virtual Child #2 assignments are due next week
Appendix D
Memo Example
Memo on Survey Analysis 3/12/12 (pilot stage)

People are categorized among three types of learning styles: auditory, visual, and kinesthetic. However, not much study has happened about what the student perceives as the most important information. Although this idea relates to the idea of learning types, it deserves a new categorization. Through surveys that were taken by education majors, it can be perceived that there are two types of people and the two types distinctly differ in the way they comprehend as the “most significant information” within the lesson. The two types of people are “external perceivers” and “internal perceivers.”

One group of students is impacted by the outsiders more than themselves. This group could be categorized as “external perceivers.” These people recognize signals that are stressed within a lesson. Signals might include repetition or emphasis but one critical factor is that they do not make their own choices about what information should be most important. The perceived most important information is already indicated within the lecturer’s lesson plan or other external beings. Therefore it seems like it would be easier to mold these students into whatever shape the teacher desires. These students are predictable and probably easy to teach lessons if the instructor recognizes the learning pattern. They are internally natural followers!

The second group of students, the “internal perceivers,” distinguishes the most important information by internalizing the information and establishing what part of the lesson impacted them most vigorously. These students are dull to social cues such as repetition and emphasis but rather focus on what intrigues their brain. These people are more manic type than the first group of students. I would assume that these students are more likely to be passionate about what they learn because they are more conscious. It seems that there is a lot more psychological self-awareness within this group of students. Since they themselves are in charge of perceiving what is most important about their lesson, it is hard for instructors to effectively communicate unless they make it super obvious. The internal perceivers are unpredictable and would most likely be natural leaders.

There are significantly more external perceivers than the internal perceivers within the survey that was taken. Of course, this is only an initial analysis of the survey results.