A Study Of Millennial Students And Their Reactive Behavior Patterns In The Online Environment

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A STUDY OF MILLENNIAL STUDENTS AND THEIR REACTIVE BEHAVIOR PATTERNS IN THE ONLINE ENVIRONMENT

by

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for the degree of Doctor of Philosophy
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ABSTRACT

The goal of this study was to identify patterns or characteristics unique to online millennial students in higher education from two perspectives: the generational traits for an understanding of millennial students as a cohort, and the Long reactive behavior patterns and traits for an understanding of millennials as individuals. Based on the identified patterns and characteristics of these millennial students, the researcher highlighted instructional and curricular implications for online learning. A profile depicting online millennial students based on the demographic data and their overall satisfaction levels with online learning is provided. For a holistic understanding, the study included an inquiry into measures of independence between overall satisfaction with online learning, reactive behavior patterns and traits among participating millennials, and an account of what millennial students are saying about quality, preferences, and aversions in their online learning experience. Overall, the great majority, especially aggressive dependent and compulsive millennial students were satisfied with their online learning experience. Also, more female millennial students were satisfied with their experience compared to male millennial students. The role of the instructor, course design, and learning matters were the themes most frequently mentioned by millennial students when asked about the quality of online learning. Overwhelmingly, convenience, time management, flexibility, and pace were the aspects these millennial students liked most about their online encounter. On the contrary, lack of interaction, instructor’s role, course design, and technology matters were the most frequent themes regarding millennials’ dislikes about their online learning experience. Finally, the study includes recommendations for future research.
This dissertation is dedicated to my parents for their selfless love and encouragement to pursue my goals in life and to my brothers for their love, advice, and continuous support.
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LIST OF ACRONYMS/ABBREVIATIONS

ASTD - American Society for Training & Development
CMS – Course Management System
IM – Instant Messaging
IT – Information Technology
NCES - National Center for Education Statistics
PDA – Personal Digital Assistant
RITE – Research Initiative for Teaching Effectiveness
TRU - Teenage Research Unlimited
UCF - University of Central Florida
WWW – World Wide Web
CHAPTER 1 – INTRODUCTION

Statement of the Problem

As the next wave of one of the largest populations in the history of the United States, the millennial generation, also known as generation Y, net generation, and digital natives, permeates college campuses and the workplace, great need to understand them is imminent. This generation is one of the largest populations since the “baby boomers.” Tapscott (1998), author of “Growing Up Digital: The Rise of the Net Generation,” indicates that millennials represent 30 percent of the population, which is slightly higher than the 29 percent representation of the “baby boomer” generation.

The Center for Generational Studies and marketing agencies started to build a profile describing general characteristics of the millennial generation in order to determine their interests and fascinations. For instance, in a study on the influence that sports celebrities have on adolescents’ behavior, Bush, Martin, and Bush (2004) found that celebrity athletes have a positive influence on adolescents’ disposition to favorable word-of-mouth and brand loyalty, especially female teenagers. In another study by Martin and Turley (2004), the older segment of the millennial generation, enrolled in an undergraduate marketing course, participated in a study on malls and consumption motivation. These researchers found that the most senior segment of generation Y was highly objective, functional, and economically prudent as consumers. They were utilitarian shoppers who were more likely to make purchases deliberately and efficiently as opposed to impulsively. Other authors and agencies describe a strong relationship between the millennial generation and their parents. Tapscott (1998) portrays an unprecedented loving concern and involvement of boomer parents in the
lives of their millennial kids. Furthermore, a Teenage Research Unlimited (TRU) survey found that 65% of the teens who responded enjoyed doing things with their family and 50% of college-bound high school students expressed that their parents’ opinion was most important (Merritt & Neville, 2002).

In education, the third National Education Technology Plan commissioned by the U.S. Department of Education reported on peculiar characteristics of millennials. To the surprise of Susan Patrick, former Director of the Office of Education Technology at the U.S. Department of Education and her staff, rather than the expected 10,000 responses on ideas and plans about online learning at their schools, 200,000 students provided their perspectives. According to the report, these millennial students appreciate their teachers and administrators and want to help them by making their needs known. This report found that 90% of students between 5 and 17 years old used computers; 94% of the teenagers used the Internet for scholastic research; 96% expressed doing well in school as very important in their lives; 88% of them valued college as critical; and 70% reported involvement in community service or volunteer work. Finally, this research found the following key results in need of attention: a) today’s students are “tech savvy” and rely on technology in every aspect of their lives; b) these students are not only using technology, but their approaches to life are also shaped and conducted differently due to technology; c) as these students age, their use of technology becomes more sophisticated; and d) older students are accessing technology at home not necessarily at their schools (Vail, 2005).

Similarly, several higher education academicians and researchers such as Oblinger and Dede are raising awareness about the needs of the millennial generation as they matriculate into colleges and universities in the United States. Oblinger (2004) in her article
entitled “The Next Generation of Educational Engagement” encourages further research on millennials and posits that the students of today process information and learn differently because they have grown up playing computer games. In addition, they have had constant exposure to the Internet and other digital media in their daily lives.

Some of the important changes and characteristics she sees in these millennial students are their tendency to work in groups; their belief that being smart is cool; their fascination with new technologies; and their racial and ethnical diversity. Dede also denotes a similar perspective to Oblinger’s view regarding learning styles of the younger generation. Dede’s (2005) interests are directed toward understanding how emerging media such as virtual environments and augmented realities influence the way neomillennials (the generation that follows millennials) learn.

Higher education institutions around the world have implemented many models of online learning with varying degrees of success and satisfaction among faculty and students. The implementation of distributed learning at the institutional level at the University of Central Florida (UCF) has been very successful and the university is nationally recognized for its faculty development program, and its continuous study of distributed learning efforts since its inception in 1996. Another example of success is Athabasca University, Canada’s Open University. This institution has attributed its recovery from the ailing outcomes (low graduation rates and highest tuition fee) of the late 80s and early 90s to its online learning endeavors. As of 2004, Athabasca University has tripled their enrollment and graduation rates compared to their numbers in 1995. Most importantly, the University has become one of the most highly regarded institutions in their province regarding learner satisfaction levels (Anderson & Elloumi, 2004).
To expand on previous and current investigations, the goal of this study is to identify patterns or characteristics unique to the millennial generation and to outline instructional and curricular implications for online learning from two perspectives: the generational traits for an understanding of millennials as a cohort and the Long reactive behavior patterns and traits for an understanding of millennials as individuals.

Significance of the Study

A common assumption about higher education is that the institution has a complete grasp of its students’ profiles and their learning and service preferences (Oblinger, Barone & Hawkins, 2001, p.3), and those generational differences between millennials and previous generations are generally understood. In the last few years, many have written and documented the essence and evolution of this generation; however, studies covering depth and breadth in understanding the millennial generation in different contexts such as education, workplace, and other settings are still in their infancy. One of the few studies that have investigated this generational cohort in the context of higher education is Paschal’s (2003) dissertation on the expectations of generation Y students enrolled in nursing education. In this qualitative study, Paschal (2003) conducted interviews to better understand what these students’ expectations were regarding nursing educators, learning environment, nursing school experience, and future opportunities a nursing education should offer.

The eldest segment of millennials is already attending and making their presence known in colleges and universities around the nation. Parallel to this generational evolution, online learning has reached maturity with great success and satisfaction especially for students from previous generations for whom the Internet was a new technology. Millennials, however, have grown up with the Internet and therefore, expect a more sophisticated access.
Consequently, researchers and practitioners facilitating online learning should reflect upon the implications for how current models and techniques will have to be adjusted for those students. Employers, too, will need to adjust their practices as these millennials graduate from college and enter the workforce.

Research Questions

Answers to the following research questions will be sought in this study.

- What is the frequency distribution of millennial students taking online courses at the University of Central Florida?
- What is the frequency distribution of millennial students taking online courses at the University of Central Florida based on gender?
- What is the frequency distribution of millennial students taking online courses at the University of Central Florida based on ethnicity?
- What is the frequency distribution of millennial students taking online courses at the University of Central Florida based on Long reactive behavior patterns and traits?
- What is the overall satisfaction with online courses reported by the millennial students?
- Is there a relationship between levels of satisfaction and reactive behavior pattern types and traits?
- Is there a relationship between levels of satisfaction, gender, and reactive behavior pattern types?
- What do millennial students perceive as quality in online learning?
- What do millennial students like most in online learning?
- What do millennial students like least in online learning?
Definition of Terms

In this study the following terms and definitions will be used:

• Generation: according to William Strauss (Lowery, 2001), a generation refers to the societal allocation of time interval between birth and full adulthood which is typically around 20 to 22 years. He further explains that a generation encompasses “a series of birth cohorts who share a common location in history and a common peer persona that reflects their collective identity” (p. 7).

• Millennial generation: a term used to describe individuals born between the years of 1981 and 2002 (Wendover, 2002; Coomes & DeBard, 2004). The term was first used to describe the results of an ABC News survey portraying the youngest generation in the U.S. (Wendover, 2002).

• Generation Y: another term used to describe the millennial generation (Wendover, 2002). The terms millennial, Net generation, generation Y and digital natives will be used interchangeably throughout this study.

• Net generation, Net gen: another term used to describe the millennial generation (Wendover, 2002). The terms millennial, Net generation, generation Y and digital natives will be used interchangeably throughout this study.

• Digital natives: the term was coined by Marc Prensky (2001) to depict the new generation of students. As native speakers, digital natives fluently speak the digital language of computers, video games, and the Internet as opposed to the digital immigrants (individuals from previous generations) who have accents when using technology. The terms millennial, Net generation, generation Y, and digital natives will be used interchangeably throughout this study.
Reactive behavior patterns: refers to behavioral patterns displayed by an individual when reacting to a set of circumstances. There are four distinct personality types (Long, 1985 & 1989):

- Aggressive independent: a behavior pattern of an action-oriented individual with considerable high energy levels, who tends to disregard the importance of gaining approval from authority and tends to act on impulse.
- Aggressive dependent: a behavior pattern of an individual with high energy levels, who requires approval from authority.
- Passive independent: a behavior pattern of low-energy individuals who disregard approval from authority, and who react by withdrawing or isolating themselves.
- Passive dependent: a behavior pattern displayed by individuals with low energy levels, who thrive on affection and approval, and who are slow to mature emotionally because of their inability to express anger or resentment.

Ancillary personality traits: additional traits that color the four major reactive behavior patterns addressed above. They are as follows (Long, 1985):

- Impulsive trait: although this trait is directly associated with the aggressive independent type, impulsivity is also reflected in the other three personality types. Individuals are not able to establish and maintain internal control and compensate with lack of forethought and judgment.
- Phobic trait: this refers to individuals’ tendency to develop well-focused fears of unrealistic proportions. “These fears are quite individual in their content and are often disabling” (Long, 1985).
o Obsessive-compulsive trait: individuals with this trait display a methodically organized behavior. They are often mistaken as possessing inherent self-discipline qualities propitious to high levels of achievement.

o Hysterical trait: individuals with this trait display dramatic and often excessive emotional responses to the point of exhorting fantasy in their thought process to an inconsequential situation.

- Online learning: also known as e-learning, distributed learning, and distance learning, consists of programs to facilitate and enhance learning through the use of computer and communication technologies (EDUCAUSE, 2005). Throughout this research the term online learning will refer to both fully online courses and mixed-mode courses.

- Blended/hybrid learning: “courses that combine face-to-face classroom instruction with online learning and reduced classroom contact hours (reduced seat time)” (Dziuban, Hartman, & Moskal, 2004).

- Fully online courses (W): at the University of Central Florida, online courses designated with the “W” letter are courses offered completely online. Students are not required to come on campus. Instead the entire course is facilitated online with a few exceptions such as orientations and proctored exams (Hartman, 2003; Center for Distributed Learning, 2005).

- Mixed-mode courses (M): at the University of Central Florida, online courses designated as mixed-mode are reduced seat-time courses in which face-to-face and online methods are combined. This course modality is also referred to as blended courses (Hartman, 2003; Center for Distributed Learning, 2005).
Limitations

The proposed research poses the following limitations:

• The study will be conducted within the confines of one university in the state of Florida which has characteristics unique to the institution. Therefore, research findings can only be generalized to the population of this university.

• Findings from this study encompass the broad-spectrum; the researcher recognizes that individuals within a particular generation might not display the same characteristics in the same manner or degree. The dynamics of subcultures within a generational group and the intricacies of human behavior affect individuals differently; therefore, the researcher cautions against over simplification and generalization of results.

Assumptions

For the purpose of this study, the following assumptions will be made:

• The Long-Dziuban checklist accurately measures the reactive behavior patterns reported by students.

• Students accurately and truthfully identify themselves in a particular reactive behavior pattern and traits.

• The findings represent the entire perspective and might not prove completely effective in understanding a specific case of a millennial student displaying a particular reactive behavior pattern or that such findings are equally applicable to millennial individuals sharing similar reactive behavior patterns.

• The researcher is aware of the possibility for students to have used the survey as a venue to release anger for a situation that may not have been perceivably handled or solved to their satisfaction.
CHAPTER 2 – REVIEW OF THE LITERATURE

Millennial Generation

McHugh (2005) depicts the overall view of what many have been observing, studying, and dealing with concerning millennials in the last few years on campuses and in the workplace. He writes:

Teachers in every strata of education are increasingly dealing with a student population that is not only more wired than they are but also grew up in a techno-drenched atmosphere that has trained them to absorb and process information in fundamentally different ways. This generation of students is more likely to be armed with cell phones, laptops, and iPods than with spiral notebooks and #2 pencils. Teachers who once struggled for students’ attention mainly against daydreams, passed notes, class clowns, and cross-aisle flirting now also face a formidable array of gadgets and digitized content. Smart schools – and smart educators – are scrambling to figure out how to use these same tools and information-distribution techniques to reach and excite young minds (p. 33).

Blackmore, a psychologist who specializes in how new technology influences our consciousness, states that “today’s brains are shaped by multiple information streams which are constantly competing for attention” (as cited in McHugh, 2005, p. 33). The author further explains that digital learners absorb and filter the world through a variety of
computing devices such as cell phones, gaming devices, personal digital assistants (PDA), and laptops that they carry with them at all times, and the computers, TV, and game consoles they access at home (McHugh, 2005).

Furthermore, the Henry J. Kaiser Family Foundations gathered some telling statistics about this new generation in March of 2005 (McHugh, 2005). According to this survey, the following percentages of eight- to eighteen-year-old respondents indicated living in a home that had TV – 99%, CD/tape player – 98%, radio – 97%, VCR/DVD player – 97%, computer – 86%, cable/satellite TV – 82%, Internet access – 74% and high speed Internet access – 31%. Also, in the same survey, 81% of the respondents reported watching TV in a typical day, 74% listened to the radio, 68% listened to a CD/tape/MP3, 54% used a computer, 47% went online, and 46% read a book. Lastly, 66% of the eight- to eighteen-year-old respondents reported having used their computer for instant messaging, 64% downloaded music, 50% looked up health related information, 48% listened to the radio online, 38% shopped online, and 32% used their computer to create their personal Web site. Undeniably, this new generation of individuals brings in a unique set of characteristics, challenges, and opportunities to college and university campuses. Fortunately, as described in the following lines, a few pioneers have started the work to understand this generation of promising individuals.

“Digital natives,” “games generation,” “Nintendo generation,” and “N-gen” are some of the labels used to describe and report about the millennial generation. Also, a slight discrepancy exists in framing the period during which millennials were born. According to the Center for Generational Studies (Wendover, 2002), the millennial generation, also referred as the “generation Y”, “generation why?”, “nexters,” and “Internet generation” or
“Net generation”, encompasses individuals born between 1981 and 1994. Other authors, such as Coomes and DeBard (2004), expand the timeframe to those born between 1982 and 2002.

Although several labels are used in reference to this generational cohort, the term “millennial” was selected as the preferred descriptor to identify the youngest segment of the U.S. population when the ABC World News Tonight TV show (12/19/1997) anchored by Peter Jennings polled the audience on the top ten suggested names to identify the youngest generation. “Millennials” emerged as the first choice and “don’t label us” as the second choice (Howe & Strauss, 2000).

Characteristically, Wendover (2002) describes the millennial generation as the most diverse in the history of the United States. Overall, millennials are portrayed as optimistic, confident, hopeful, civic-minded, and goal- and achievement-oriented. They have seen discrimination; however, they do not understand it. Another characteristic of this generation is that one in four comes from a single parent home.

Authors of generational discourse suggest that an examination of major historical events during the millennials’ lifespan and societal and cultural influences upon them provides a better understanding of their generation. Millennials have seen and experienced the advantages of our country’s unprecedented economic growth and technological advances. Moreover, millennial teenagers have the most disposable income next to what the current mature generation, their grandparents, have. Howe and Strauss (2000) explain that millennials are growing up with a fragmenting pop culture and a narrower gender-role gap than the homogenizing messages and wider gender-role gap that their boomer parents experienced.
Wendover (2002) notes the following historical events that have taken place in the lifespan of the millennial as important influences in their lives:

<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>1990</td>
<td>Desert Storm</td>
</tr>
<tr>
<td>1991</td>
<td>Microsoft Windows operating system</td>
</tr>
<tr>
<td>1995</td>
<td>Oklahoma City bombing</td>
</tr>
<tr>
<td>1996</td>
<td>O.J. Simpson trial</td>
</tr>
<tr>
<td>1999</td>
<td>Columbine High School shootings</td>
</tr>
<tr>
<td>1999</td>
<td>President Bill Clinton impeached</td>
</tr>
<tr>
<td>1999</td>
<td>Y2K crisis</td>
</tr>
<tr>
<td>2000</td>
<td>War in the Balkans</td>
</tr>
<tr>
<td>2001</td>
<td>World Trade Center and Pentagon bombings</td>
</tr>
</tbody>
</table>

For millennials, technology is supreme (Wendover, 2002). In addition to the radio, telephone, and television, this generation has had computers, pagers, cell phones, instant messaging, World Wide Web, and wireless communication as some of the most influential media and technologies in their lives. Some of the cultural icons in the lives of the millennials are Barney, Teenage Mutant Ninja Turtles, Virtual Pets, Beanie Babies, Jerry Springer, The Spice Girls, the X Games, Pokemon, Britney Spears, Mark McGuire, Sammy Sosa, Princess Diana, and Bill Gates. Among the popular TV shows watched by millennials are L.A. Law, Thirtysomething, Murphy Brown, Life Goes On, The Simpsons, Home Improvement, Friends, the X-Files, Ally McBeal, Dawson’s Creek, and Felicity. The most popular movies in the lifespan of millennials are Top Gun, Rain Man, Pretty Woman, Silence of the Lambs, Jurassic Park, Pulp Fiction, Toy Story, Independence Day, Titanic, Saving
Private Ryan, and the Matrix. Other telling characteristics are the thematic phrases that the
millennials use: ‘what’s next?’, ‘on my terms’, ‘show up’, ‘earn to spend’, ‘what’s right?’,
and ‘do exactly what’s asked’ (Wendover, 2002).

although distinctive and sometimes contradictory, provide a framework of commonalities
that exist across the sets of millennial characteristics and behaviors. Wendover (2002), for
example, recommends remembering the following behaviors when interacting with
millennials: a) they live in the moment; b) they expect the immediacy of technology; c) they
believe that only clear and consistent expectations can ensure productivity; d) they believe
that money is earned for immediate consumption; e) they treat other people with respect after
they have been treated respectfully; f) they question everything, and g) they are one of the
most demographically diverse populations.

Tapscott (1998) provides ten distinct themes that identify the “N-gen” or millennial
generation (p. 68):

1. Fierce independence: with unparalleled access to information via the web, millennials
gain knowledge to form opinions and defend their positions with an autonomy gained
from role changes whereby millennials actively seek information vs. receiving it.

2. Emotional and intellectual openness: millennials are open, and even intimate, about their
lives and thoughts in online chat rooms and web pages; however, they do so
anonymously via pseudo personas, and forewarn others about the perils of sharing
personal information.

3. Inclusion: millennials’ orientation of virtual communities is global and inclusive—global
in their quest for information, communication, and activities, but also inclusive to sub-
cultures within the larger global community: family, hearing impaired individuals, common interest groups, etc.

4. Free expression and strong views: millennials value access to information and expression of their thoughts as fundamental; work against censorship; and are articulate when expressing their views.

5. Innovation: millennials regard innovation as innate; they were creating electronic magazines, clubs, ideas, and video game codes before companies had learned of the web’s potential to explore.

6. Preoccupation with maturity: “N-gens” have learned that web literacy gains them independence and autonomy from adults because adults regard millennials who use computers as being more mature than millennials who do not. Tapscott (1998) advises adults to reevaluate childhood when lived in a digital world.

7. Investigation: Tapscot defends millennials’ knowledge of understanding computers and technology—not only do they know how to operate computers and technology, but they also want to create their own.

8. Immediacy: “N-gen” expects immediacy, not instant gratification, because of their exposure to computer technology’s real time that simulates events at the same speed as they occur in real life.

9. Sensitivity to corporate interest: millennials value authenticity and feel that “media monopolies” do not provide broad and unbiased perspectives, and exploit them by unwanted marketing messages.
10. Authentication and trust: from parental preparation and by experience, millennials understand the necessity of evaluating and authenticating the legitimacy of sources on the web.

Howe and Strauss (2000) identify seven distinct traits in millennial individuals:

1. Special: millennials collectively were raised to believe that they are vital to the nation’s advancement.

2. Sheltered: millennials have been protected by one of the biggest youth safety movements in the history of the United States because of child-abuse cases in the ‘80s and the Columbine incident in 1999.

3. Confident: millennials are confident because their parents provide trust and optimism about the future.

4. Team-oriented: because of the emphasis in group learning in the last decade, millennials operate in group activities and environments.

5. Achieving: because of the focus of American politics on accountability and higher school standards, millennials are described as the best-educated and best-behaved generation in American history.

6. Pressured: millennials feel pressured to excel and therefore they study hard, avoid personal risks, and take advantage of the opportunities given to them by adults.

7. Conventional: millennials are very supportive and accepting of their parents’ social values.

Like Wendover (2002), Prensky (2004) reports his observations about millennials that employers and educators should heed and identifies their cognitive style changes. Prensky (2004) indicates that on average, “digital natives” (i.e., millennials) would have played video
games close to 10,000 hours; sent and received more than 200,000 e-mails and instant messages; talked, played games and accessed data via cell phones for 10,000 hours; watched TV for more than 20,000 hours; and were exposed to 500,000 TV commercials as opposed to a mere 5,000 hours of reading books. Although Prensky frames his perspective of millennials in the context of digital game based learning, his characterization highlights the essence of millennials. According to Prensky (2001), the “games generation” displays the following cognitive style changes:

- **Twitch speed vs. conventional speed:** because the “games generation” processes information quicker than individuals from previous generations, educators and employers need to manage and balance their expectations for faster outcomes with other key objectives such as quality.

- **Parallel processing vs. linear processing:** the “games generation” can effectively multi-task—doing homework while watching TV and chatting with several friends on the computer.

- **Random access vs. step-by-step:** the less sequential manner in which the “games generation” absorbs and outputs information has spawned their ability to make connections and recognize patterns easily instead of following linear thought patterns.

- **Graphics first vs. text first:** Although many question the levels of textual literacy and depth of information the “games generation” can gain or not, Prensky (2001) states that the increased perception of the younger generation is the opportunity to accelerate learning.

- **Connected vs. stand alone:** the “games generation” can connect with people all over the world synchronously and asynchronously at a minimal cost on a 24-hour basis, a
characteristic that raises implications regarding information access and problem-solving; they work in “virtual teams” without the constraints of a physical location.

- **Active vs. passive:** the “games generation” learn and design by doing, and so, are less tolerant of passive experiences such as lectures and traditional corporate meetings.

- **Play vs. work:** the “games generation” uses complex cognitive processes and logic while interacting with the web or playing video games, and the skills they have developed as a result translates work into play.

- **Payoff vs. patience:** corporations have recognized that millennials’ efforts determine the type and degree of payoff they will receive by implicating business practices that delineate the link between expectations of employees’ performance and rewards with programs such as equity as compensation and offerings of seed capital to foster internal startups.

- **Fantasy vs. reality:** because the “games generation” enjoys fantasy elements in computer technology, Prensky (2001) cautions educators and trainers to combine fantasy and reality—a successful example is the design of workspaces that permits interaction in informal settings that foster play and creativity; gender roles in fantasy games need to be addressed.

- **Technology-as-friend vs. technology-as-foe:** Prensky (2001) recommends allowing millennials to create their own business models, computer applications, relationships or information elements such as web pages.

Although the authors and researchers concur about several of the millennial traits, each perspective provides three distinctive foci in understanding this generation: 1) the significance of millennials as individuals; 2) cognition, information processing and their attitude toward technology; and 3) the millennials’ lifestyle. Table 1 is a compilation of the
six major characteristics discussed in this literature review. Tapscott (1998), and Howe, and Strauss (2000) concentrate on the essence of the millennial as an individual, while Prensky (2001) and Frand (as cited in Bisoux, 2002) concentrate on their cognitive styles, information processing skills, and attitude toward technology. Wendover (2002), and Coomes, and DeBard (2004) focus on the millennials’ lifestyle.
Table 1 - Six major perspectives in the characterization of millennials and their foci

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Millennials in Higher Education

According to the National Center for Education Statistics (NCES) (Coomes & DeBard, 2004), by 2002, approximately 6.9 million millennials were enrolled in colleges and universities around the United States, a representation of 44.2 percent of American college and university students. By 2012, the number of millennial students is estimated to grow to 13.3 million, an increase of 93.5 percent and a representation of 75 percent of enrollment. The NCES further reports that when millennials matriculated, the student population became more racially and ethnically diverse. For example, the percentage of white students decreased from 81.53 percent to 69.38 percent; Asian American students represented a threefold increase; and the percentage of women increased from 15.45 percent of the total student body to 56.12 percent. Furthermore, Coomes & DeBard (2004) indicate that since the first millennial college graduates (in 2003) are permeating entry-level faculty and administrative positions at U. S. colleges and universities, they need to be understood not only as students, but also as individuals in the workforce.

In the book “Serving the Millennial Generation,” DeBard (Coomes & DeBard, 2004) addresses the implications of serving millennials in higher education based on Howe and Strauss’ seven traits. He reiterates Howe and Strauss’ belief that millennials are trying to correct the excesses of previous generations, especially the narcissistic and iconoclastic conditions and attributes during the boomers’ college years, and notes that structure and conventionalism will replace them, preferred conditions for millennials. He also presents a compilation of values that compare the generational differences among baby boomers, generation X, and millennials to analyze the interactions among the different generational cohorts.
One of the secondary effects of being raised to feel special and important is the degree of parental involvement in their millennial children; some have described this as intrusive. In an Orlando Sentinel newspaper article, “Boomer-Age Parents Find It Hard to Let Go of Collegians,” Simmonson (2004) reports incidents of parental involvement with their college enrolled children. Parents have called professors, classmates, and roommates to discuss their child’s problems and have even requested a report card to determine their child’s progress; however, federal laws protecting the privacy of an individual older than 18 years of age prohibit colleges and universities from divulging students’ grades. Similarly, DeBard (Coomes & DeBard, 2004) expresses concerns about educating children who were rewarded with trophies for participation rather than victory.

More positively, DeBard (Coomes & DeBard, 2004) notes that millennials look forward to the transition into adulthood as it equates to being empowered to become civic minded. He states that the key to decode how services and relationships with millennials should be handled is to know that they expect to be treated as “very special individuals” with “high expectations.”

Millennials’ parents have established rules to shelter and protect their children from society’s extremes—Howe and Strauss’ second trait; consequently their children expect rules that are clearly communicated and enforced. DeBard (Coomes & DeBard, 2004) notes that the implications of this characteristic for higher education is that the institution and professors will be expected to clearly communicate the rules in their school policies, syllabi, and assignments.

Simmonson (2004) similarly reports that millennials trust and expect authority figures to guide them, noting that many millennials entering college have never made an important
decision. Other authors and observers, however, respond that “sheltered” millennials lack direction and still others state that teenage millennials have great ambitions, but no clear path to conduct their lives. Duke of Emory University states that parents, who are overprotective, are doing a disservice to their children (as cited in Simmonson, 2004).

The overall positive and optimistic outlook millennials have about life has resulted in a very confident generation. Millennials love good news, being encouraged, and being given rewards for good behavior. The latter is also tied with the civic orientation of millennials as they are more than willing to serve their community for practicality reasons and as long as they are credited for participation. Lastly, millennials trust authority figures as they have done everything possible on their behalf. Millennials have learned to negotiate with parents and authority figures the levels of acceptable behavior, expectations, and rewards. Consequently, millennials have reached levels of confidence with which they can meet the expectations set forth by the adults as well as their own expectations.

DeBard (Coomes & DeBard, 2004) posits that Howe and Strauss (2000) would present the millennials’ “conventional” trait as a response to those who have expressed concern about the lack of self-direction “sheltered” millennials possess. They state that millennials follow convention, social norms, and rules as they have been encouraged and rewarded for doing so: they go along to get along. Millennials find sets of codes and rules as a way to respect cultural differences and as a rite of passage.

Undoubtedly, millennials are a team-oriented generation. They love to congregate and collaborate with their peers; however, they expect the presence of authority figures to provide structure, facilitate resolution of possible conflicts along the way and ensure the achievement of goals. Millennials love to cooperate and be seen as cooperative individuals
especially in the eyes of those who will be judging them. Sociologists attest to this millennial trait associated with team work. They observe that millennials are not only goal-oriented but also very communal, unlike their predecessors, the generation X (Strauss, 2005). Sociologists attribute these tendencies to the highly structured lives these millennials have led. Judith Kidd, Associate Dean of Student Life at Harvard University, says that her students come with daily planners (as cited in Strauss, 2005, p. A10). Many of them do not know what to do during down time. Moreover, millennial students are joining several clubs and organizations with emphasis on public service organizations, culture, and ethnicity. Another trend on college campuses is that females, who represent the majority of the student body, are more likely to join non-athletic clubs. Many of the millennial students are also eager to start up their own club despite the existence of another club in the vicinity with similar goals. One of the reasons for recreating a similar club is to exhort their desire to lead (Strauss, 2005). In the classroom, millennial students prefer working on projects with their classmates. At the workplace, millennials prefer to work collaboratively as they do in the classroom.

Howe and Strauss (2000) have identified achievement as one of the primary characteristic of millennials. According to the authors, millennials yearn for achievement. They expect to be held accountable for their actions and to be rewarded for good behavior. Furthermore, millennials have come to accept objective assessment methods as opposed to subjective methods. To them, the concept of “fairness” must abide by a set of criteria instead of idiosyncratic biases of the dominant societal group, i.e., white and male. Millennials expect to ascend to higher levels based on their own merits. Many of them want to attend colleges and universities; however, they want authority figures to invest in them as well.
They also expect to earn high grades for their compliance with educational standards. Moreover, millennials want their curriculum to be aligned with a reward structure in which expectations are clearly communicated and managed. Lastly, millennials dream of achieving similar goals to the heroes they have come to admire through the media. To them, heroes are those individuals who have been successful at leading and surpassing obstacles (Howe & Strauss, 2000).

Millennials have been pressured to perform throughout their lives. One of the reasons for their desire to have structure in all they do is to be able to perform the necessary tasks that will lead to the expected levels of achievement. Boomer parents have raised millennials to appreciate the dexterity of their parental skills to be able to provide their children with many life opportunities. Consequently, millennials have come to expect parents and authority figures to create and organize the path that will ensure success as long as they are willing to follow such path. Also, to reduce this feeling of pressure, millennials have learned to conform and avoid improvisation.

Based on these traits of the millennial generational cycle by Howe and Strauss (2000), the stance on potential work place conflicts by Zemke, Raines, and Filipczak (2000) and the notion of “clashpoints” between boomers, gen Xers, and millennial workers by Lancaster and Stillman (2002), DeBard (2004) developed twelve descriptors of generational values that could help faculty and administrators implement the most suitable activities and services on their campuses. The twelve descriptors of millennials according to DeBard (2004) are:

- Level of trust: High toward authority
- Loyalty to institutions: Committed
• Most admire: Following a hero of integrity
• Career goals: Build parallel careers
• Rewards: Meaningful work
• Parent-child involvement: Intruding
• Having children: Definite
• Family life: Protected as children
• Education: Structure of accountability
• Evaluation: Feedback whenever I want it
• Political orientation: Crave community
• The big picture: How do we build it? (p. 40)

Similarly, Frand (as cited in Bisoux, 2002, p. 33), Assistant Dean and Director of Computing Services at the Anderson School in the University of California, studied the use of computers in business schools around the U.S. and identified similar millennial characteristics and practices among students to those found by other researchers; he labeled his characteristics as the “information age mindset:”

1. View computers as normal part of life, rather than as “technology.”
2. Believe the Internet to be more important than television.
3. Do not believe what they see (now that images can be manipulated by digital means).
4. Prefer doing an activity rather than knowing the theories behind it.
5. Use a “Nintendo” approach to learning – that is, using trial-and-error, rather than careful research, to achieve a desired result.
6. Multitask, so that no task receives a person’s full attention.
7. Type on a keyboard rather than writing on paper.

8. Stay connected, no matter what.

9. Have “zero tolerance” for delays.

10. Blur the consumer of information with its creator (p. 32).

Furthermore, Oblinger & Oblinger (2005) present a comprehensive viewpoint on how millennial traits impact higher education in their edited work, “Educating the Net Generation.” As parents of millennial children, Oblinger & Oblinger (2005) noticed many of the characteristics depicted above in their own children. Their edited work includes chapters from many perspectives including those of millennial college students, university researchers, administrators, faculty, and higher education visionaries. They observe similar characteristics as the previous researchers and highlight the following characteristics as crucial to the operation of higher education institutions:

- Digitally literate: since the Net generation has grown up with wide access to technology, they can intuitively use a variety of technology devices and the Internet. The authors point out that although this generation can easily and comfortably use these technologies without much instruction, their understanding of the technology might be superficial. Digital literacy also comprises how visual the Net generation is. They can easily transition from the virtual world to the real world and concoct images, text and sound to encode and decode messages. That is, their literacy type goes beyond the textual mode. Net generation students are also more likely to use the web instead of the campus library to conduct their research; however, they are aware of the limitations to access reliable information over the Internet.
• Connected: throughout the lifespan of the Net generation, society has always been connected. Although this generation is highly mobile, they are always connected via their cell phones and laptops. They cannot envision a world in which they cannot get in touch with someone at all times.

• Immediate: for Diana and James Oblinger, the Net generation is fast in the sense that individuals from this generation expect immediate response to their inquiries and actions as well as fast access to necessary information. They are used to the instantaneous response they get while on instant messaging or playing video games. Furthermore, they tend to multitask and move quickly from one activity to another without much forethought on accuracy. That is, the emphasis is on speed rather than accuracy.

• Experiential: this observation has to do with how the Net generation prefers action, the doing rather than being told what to do. This generation seems to learn better through discovery by exploring on their own or with their peers. Diana and James Oblinger assert that this learning style has enabled millennials to better retain the information and use it in powerful ways.

• Social: the Net generation is more inclined to activities involving social interaction. This generation is very inclusive in the sense that they are open to diversity, differences, and sharing even with strangers on the Internet. It is not uncommon to have millennials share personal and emotional information in their personal web pages, blogs, and instant messages. They constantly seek to interact with other people over the Internet whether for personal reasons, work, or class related matters.

In addition, according to Diana and James Oblinger (2005), the following millennial learning preferences have great impact on higher education:
• Teams: in school and at work, the Net generation prefers to work in teams to the degree in which often times, they trust more what their peers have to say regardless of what the authority figure has to say.

• Structure: because of the achievement oriented nature of the Net generation, boundaries, priorities, and procedures need to be spelled out to them. They immensely need to know what the rules and rewards are to be able to achieve the goals. In other words, they prefer structure as opposed to ambiguity.

• Engagement and experience: Net generation’s preference for exploration and discovery has direct implications for their desire to be interactive in their learning experience. If a learning experience is perceived as not interactive, not engaging, and too slow, their attention in the matter is lost. Diana and James Oblinger infer that this generation might need “to stop experiencing and spend [more] time reflecting.”

• Visual and kinesthetic: the Net generation is most comfortable in environments that are rich with visual cues and media rather than in environments that are solely textual. Moreover, some studies have shown that when visual enhancements were made, the Net generation students have improved scores and accepted completing assignments they previously refused to complete due to the lengthy textual instructions. Lastly, the Net generation is very kinesthetic in the sense that they like to do things as opposed to just talking or thinking about things.

• Things that matter: Although civic minded, the Net generation prefers working on “things that matter.” They have the drive to make a difference and be able to resolve any problem whether environmental or community related matters.
Oblinger & Oblinger (2005) also provide insights on the Net generation and their learning preferences and how they impact higher education. They posit that the Net generation phenomenon is more complex than an age bracket. They argue that individuals from previous generation cohorts, who have adopted the same technologies as the Net generation, have displayed similar characteristics, and therefore, educators must address how different generational cohorts perceive and react to the world around them.

Oblinger & Oblinger (2005) indicate that more technology on campus is not necessarily superior to millennials. Rather, providing the necessary infrastructure and facilitating processes that enable specific activities would be more appreciated by the Net generation. They care about what they can do with the technology. This example represents a salient point about how the different generational cohort views technology. For those of us who are from previous generations, blogs, and wikis are new technologies, but not so for the Net generation. Moreover, instant messaging (IM) has become a verb in the vocabulary of the Net generation while for other generations IM is a new technology. To millennials, new technology consists of a new feature in their cell phone or laptop. They do not care how the technology works “under the hood,” they just want to use it.

The Net generation also longs for communities and social networks; however, these communities and networks are not limited to the physical world. They participate in the physical and virtual types, but more likely in hybrid communities and social networks. It is not uncommon for two millennials to be within a few feet of each other and still communicate by instant messaging. Millennials consider online conversation to be as meaningful and expressive as in person. The Net generation uses technologies as a doorway into social networks and virtual communities such as Flickr and Orkut to share photos and to
find people sharing the same interests. Even more, many Net geners use computer games as a social venue to play, teach each other game tactics and tips, or to critique game design issues. This latter Net generation practice has great implications for teaching and learning. Squire and Jenkins believe that “games encourage collaboration among players and thus provide a context for peer-to-peer teaching and for the emergence of learning communities” (as cited in Oblinger & Oblinger, 2005)

Oblinger & Oblinger (2005) also discuss the concept of “first-person learning” that Net geners prefer. Millennials learn by participation. They like to experience and construct their own learning, not passively receive information. They enjoy exploring and assembling information, formulating their own hypotheses and utilizing tools that will enable them to achieve learning. The authors indicate the need to provide online laboratories and remote instruments enabling students to gather data, manipulate, and analyze the data just as professionals do in real life. Also, Oblinger and Oblinger (2005) believe that simulations and visualization tools allow students to explore and reach their own conclusions and are necessary for the Net geners to enjoy “first-person learning.” The intention is not to eliminate traditional tools and resources such as maps, text, video, and audio, but rather to foster an experience in which students make use of such resources in their learning whether in online laboratories, simulations, computer games or role playing.

Interaction is also important to millennials. They demand interactive learning, but faculty are not reciprocating. It is estimated that in the traditional lecture-based classroom, students ask 0.1 questions per hour while the faculty member asks 0.3 questions per hour. In computer-based instruction, it is estimated that the number of questions increase from less than 1 per hour to 180 to 600 per hour (Oblinger & Oblinger, 2005). Correspondingly, the
short attention span of Net geners must be addressed because they need an immediate
response to each interaction. Oblinger & Oblinger (2005) refer to Prensky’s stance on how
digital natives are used to twitch speed interactions and thus, find themselves bored in most
of their educational experiences in colleges and universities. Oblinger & Oblinger also point
out that interaction is not limited to formal educational settings such as the classroom. The
authors believe that interaction in informal settings such as peer-to-peer instruction,
journaling, and reflections taking place in blogs, wikis, and web pages is just as important.

A related aspect to interaction with implications for higher education is the
immediacy the Net generation expects from any interactivity. Their preference becomes
more complex as the Net gen multitasks and prospers with immediate gratification. Whether
they are expecting an immediate response from their friends, family or service people, they
want their response now. According to Oblinger and Oblinger (2005), faculty must clearly
stipulate each party’s expectations from the beginning.

The last implication highlighted by Oblinger and Oblinger (2005) is the need for
authority figures in higher education to realize that the Net generation becomes literate by
multiple media, that is, literacy is not limited to text. Oblinger and Oblinger (2005) report
that the Net generation is more visually literate than previous generations and has most likely
done most of their reading on the Internet, they most likely scanned text instead of reading it.
Moreover, there has been evidence that the Net generation prefers graphics over text. In
some instances, when presented with copious amount of text in the instructions for an
assignment, they refused to complete the assignment or tried to guess the instructions before
reading it. However, when graphics were presented before text in the instructions, their
refusal to do the assignment was reduced.
Oblinger and Oblinger (2005) conclude that just as technology changed the Net generation, higher education is now being forced to change. The advice they provide to higher education institutions is to understand who their students are to create the optimal learning experience in reaching the primary goal of educating its students. To help faculty and administrators in higher education institutions around the United States, Oblinger & Oblinger provide a set of questions they deem as the right questions to ask in understanding Net generation students:

Who are our learners? The authors clarify that institutions need to go beyond knowing about the demographics of their students. Oblinger & Oblinger (2005) encourage institutions to engage in dialogues with their students to better understand their students, their needs and wants including technological infrastructure, campus life, and recreational programs so that the typically massive investments are not based on assumptions.

How are today’s learners different from faculty/administrators? Oblinger and Oblinger (2005) state that each generational cohort has its unique characteristics; however, millennial students come to colleges and universities to get an education, interact with peers, faculty, and staff just as their predecessors did. Therefore, for the best interest of the institution, its faculty, and students, higher education decision makers should foster a campus that is supportive of interaction between faculty and students and provide engaging educational experiences while being cognizant of the differences between each generation.

What learning activities are most engaging for learners? Oblinger and Oblinger (2005) reaffirm that technology does not make learning engaging, the learning activity is the engaging part. Consequently, if the Net generation prefers experiential learning, traditional lectures are not the most favorable instructional experience for the millennial student.
Similarly, if the Net generation craves community and social networks, the learning experience should entail peer-to-peer activities. The authors believe that the Net gen phenomenon has highlighted many areas that need improvement in the educational system.

Are there ways to use Information Technology (IT) to make learning more successful? The authors indicate that active, social, and learner-centered experiences are the key factors in successful learning. However, faculty, staff, and administrators are faced with multiple responsibilities and greater number of students to serve. Oblinger and Oblinger (2005), therefore, suggest finding appropriate ways in which IT could facilitate successful learning while fulfilling the multiple responsibilities and the multiplied number of students enrolled in higher education institutions.

Long Reactive Behavior Patterns

William Long, a physician by training, and whose practice was in adolescent medicine, developed a set of behavior patterns and traits that describe adolescents’ reactions to their environment and experiences. He explains that ambivalence is the key characteristic in adolescents as they face conflicting feelings between wanting to be independent and retaining their dependency on their parents. Long (1985) identified four major reactive behavior patterns to help understand the many ways adolescents display ambivalence; these patterns are: 1) aggressive independent, 2) aggressive dependent, 3) passive independent, and 4) passive dependent. He also identified traits to further explain hues or colorings to these reactive behavior patterns: 1) impulsive, 2) obsessive-compulsive, 3) hysterical, and 4) phobic (Long, 1985).

Long’s work has proved to be useful in helping education researchers and practitioners understand the influence of individuals’ behavior and personality traits in
learning. In his 1988 John Wilson Memorial address, Long acknowledged the relationship between personality types and the process of learning. Long (1989) stated “My efforts will be directed to help you understand that personality does operate in relation to the learning process. Personality provides the variety in reactivity of an individual to a given set of circumstances.” (p. 4).

Although Long’s research emphasis was in adolescents and his work has been widely used in the counsel of adolescents by parents and teachers, the reactive behavior patterns and traits have been used to study individuals of all ages from children in elementary school to adults in higher education. For instance, Cioffi and Kysilka (1997) conducted a study of reactive behavior patterns among gifted students enrolled in advanced placement (AP) courses at a high school. Their study found that 74% of these gifted students were aggressive dependent and 60% showed compulsive ancillary traits. This study also suggests the existence of a relationship between gender and behavioral patterns among these gifted students. A greater number of girls showed compulsive and hysterical traits in comparison to boys. Girls also displayed multiple traits more than boys did. Finally, the study examines whether gifted and advanced placement programs in elementary and high school are carrying forth the traditional educational bias that favors the aggressive dependent behavior type of high achievers while students of other behavior patterns are being neglected because we do not understand them.

Similarly, another study of high school students enrolled in ninth-grade mathematics courses showed that although all four Long reactive behavior types were equally represented in the sample, more aggressive dependent students were enrolled in upper level mathematics courses and more independent types were enrolled in lower level courses. On the contrary,
the researcher found that personality traits were not equally distributed; 46% of the students were identified as compulsives. The study also disclosed that more students with the compulsive trait were enrolled in upper level mathematics courses while students with the phobic, impulsive, and hysteric traits represented the majority in the lower level math courses (Junkins, 2000).

Suzanne Groth (2002) studied adults whose age ranged from 24 to 58 years old. In this study, she looked into the possible relationship between two personality assessment instruments, the Long reactive behavior patterns questionnaire and the Heath typology instrument so that she could later determine the existence of a relationship between personality types and traits according to gender and course of studies. The researcher found a significant relationship between the two instruments. She also found that adult learners made learning decisions based on personality types; however, personal goals were also great motivators. Lastly, the researcher found that women were more likely to continue their education to earn a degree while men reported several other reasons.

Like Cioffi’s findings among gifted high school students, in another study on reactive behavior patterns among college students who were enrolled in online courses (Dziuban, Moskal & Dziuban, 2000), the researchers found that learners with dependent behavioral patterns tend to enroll in online courses. High achievers represented the majority of the students enrolled in college online courses. Such findings led the researchers to contend that not all behavior types are keen to take online courses and, therefore, recommended the development of intervention techniques to address students’ needs in the process of transitioning into the online environment. Also, the researchers provided some instructional strategies depending on the reactive behavior pattern as follows:
• When working with aggressive independent students provide independent activities and assign them to leadership roles.

• When working with aggressive dependent students assign them mentoring roles as they need guidelines and approval from authority and shy away from taking on more than they can handle.

• When working with passive independent types assign them short term goals and provide them with as much flexibility as possible.

• When working with passive dependent types provide clear and complete directions about the assignment and encourage them along the way.

In addition, Rundle (2001) investigated the relationship between college instructors’ personality types with their attitudes toward the use of computers in the classroom and their self-efficacy for using computers for instructional purposes. The study was conducted with instructors in the Humanities, Communication, and Social Sciences division of Edison College. The researcher found that 57% of the participating faculty identified themselves as aggressive dependent and 58% reported being compulsive, followed by 46.4% as hysteric. The study found no relationship between the instructors’ personality types and the Attitude/Self Efficacy (ASE) scores; however, there was a positive relationship between the ASE scores and the hysteric trait. Also, there was a negative relationship between the ASE scores and the compulsive trait. Based on these findings, the researcher concluded that the legitimacy to conduct further studies about how the instructor’s personality influences the adoption or resistance to incorporate computers for instructional purposes can be justified.

According to Long (1989), aggressive or passive are the two basic personality types. These two distinctive types can be seen in nursery babies who display their aggressiveness by
throwing their “blankie” across the room as opposed to the passive babies who lie quietly sleeping or eating. At the time of the John Wilson Memorial address in 1988, Long revealed his belief that personality is innate to the individual. This belief constitutes the appreciation of how valuable of a tool the reactive behavior patterns and other personality instruments are for predicting and understanding behavior.

The two basic personality types are further classified into two subgroups, independent and dependent. In this case, the concept of independence does not refer to an individual’s need to seek autonomy but rather an individual’s need for the approval of authority. The tendency of dependent individuals is to do whatever it takes to please authority figures as opposed to independent individuals who do not do so (Long, 1989).

Generally, aggressive independent people have the tendency to be high energy and action oriented; the epitome of the “actouters”. With all the energy and the dismissal of needing to please authority, aggressive independent people tend to act quickly on an impulse. They are also described as people who tend to be honest. They call it as they see it, almost to the point of being harsh (Long, 1989). As aggressive independent adolescents grow up and learn to control their impulsiveness, they start to concentrate their high energy toward constructive endeavors. According to Long (1985), aggressive independent individuals learn and thrive in structured environments that provide the much needed self-control and discipline these individuals lack.

Aggressive dependent people, also high energy individuals, care a great deal about pleasing authority. These are the people who are often referred to as the “over-achievers.” Usually, these are the students a teacher loves to have. These are the students who become the campus leaders and youth leaders at their church, always going the extra mile. According
to Long (1985), most of the world’s work is completed by the aggressive dependent type. As in any type of personality, aggressive dependents face a great deal of difficulty in going over the “ambivalence hump” as they are contradicted with expressing anger towards an authority figure when they are trying to please authority (Long, 1989).

On the contrary, individuals born passive independent are low energy and do not care to gain the approval of authority. This type of person could care less what other people think about them. If they are pushed, they withdraw even more. These are the so-called “stubborn kids”, who refuse to meet the expectations set up for them by authority figures. Dziuban often uses the analogy of “pushing jell-o under the door” to describe the reactive behavior of passive independent individuals. Long forewarns us to avoid confusing these individuals’ desire to be independent with their intellect. Although “they love to fail” to fulfill their first priority, which is to “act out” resentment toward authority, these are intelligent people (Long, 1989).

In contrast, the passive dependent individuals are low energy and extremely compliant, affectionate, and quiet. These are the stereotypical “goodie-goodies.” These individuals will do anything their parents, teachers, and other authority figures tell them to do. Their emotional maturity develops very slowly as they feel most comfortable depending on their parents, families, and those with whom they develop a relationship. Care must be given to not force them to leave the nest or comfort zone too early as their dependency needs might push them to make less adequate decisions or choices (Long, 1989).

As mentioned earlier, Long (1985) specified four ancillary traits to further understand the different hues of the reactive behavior patterns. According to Long (1989), people with phobic traits tend to focus on exaggerated and unrealistic fears. If such fears reach abnormal
degrees, the behavior of these individuals would be highly affected. People with phobic traits are great with “what-if” situations as they think possible scenarios in a situation way ahead of time. Often times, these individuals resort to the avoidance syndrome as they fear facing the school bully or the mean teacher and display separation anxiety when their loved ones are absent.

Second, people with the impulsive trait are characterized as irresponsible and acting with unexplainably erratic behavior. Although this trait is directly associated with the aggressive independent type, the impulsive trait is also reflected in the other three personality types. In general, individuals with the impulsive trait are not able to establish and maintain internal control and compensate with lack of forethought and judgment.

Third, Long identified the obsessive-compulsive trait, which is displayed by an individuals’ highly methodical, well thought-out, and organized manner of behavior. A positive perspective on obsessive-compulsive behavior is the controlling nature these individuals have to be organized and methodic; however, if the ritualistic trait permeates the livelihood of the individual in a detrimental manner, treatment is recommended. For instance, Long (1989) recommends encouraging obsessive-compulsive people to schedule free time so that they do not burn out.

The fourth trait, the hysterical trait, encompasses the “color and drama” individuals bring into the mix of behavioral patterns. These are the people who live “soap-opera” lives. They can be spotted in a crowd with their colorful make-up, dress, and personality (Long, 1989). Although hysterics are present in both genders, female adolescents display this trait more frequently (Long, 1985). Hysterics tend to be compassionate, fantasy-laden, often times unrealistic and prone to crisis. They seem to get in trouble but enjoy the experience.
Amidst the crisis, hysterics find solace as long as tears and emotions are involved (Long, 1989).

Online Learning, E-Learning, Distance Learning, Distributed Learning, or Blended Learning?

The characteristics and forms of online learning have evolved through the years, which might explain the existence of several terms to refer to this relatively new method of facilitating learning. Although different terms such as distance learning, distributed learning, and e-learning (electronic learning) have been used interchangeably through the evolution of online learning, in the literature, the essence of what online learning constitutes differs depending on the institutional or organizational perspectives and offerings. According to EDUCAUSE (2005), a nonprofit association whose mission is to advance higher education through the use of information technology, online learning consists of programs to facilitate and enhance learning through the use of computer and communication technologies. Ally of Athabasca University (Anderson & Elloumi, 2004) defines online learning with an operational perspective as:

The use of the Internet [to access] learning materials; to interact with the content, instructor, and other learners; and to obtain support during the learning process, in order to acquire knowledge, to construct personal meaning, and to grow from the learning experience. (p.5)

Allen and Seaman (2005) present another perspective of online learning in a recent report about online education in the United States. The authors explain that schools offer online learning in different ways or proportions. Furthermore, individuality in the delivery of online courses may vary at the faculty level as well. The authors define online learning
according to the proportion of content delivered online. They classify online learning in three major categories as follows:

- Web facilitated in which 1 to 29% of the content is delivered online. Web-based technology is used to facilitate delivery of face-to-face courses. These courses could make use of course management systems or web pages to post course items such as syllabus and assignments.

- Blended/hybrid learning in which 30 to 79% of the content is delivered online. A significant amount of the course is delivered online through online discussions in addition to modules, syllabus, and assignments. However, the online portion of the course is “blended” with face-to-face delivery.

- Online learning in which 80% plus of the content is delivered online. That is, most or the entire course is delivered online. Normally, face-to-face meetings are not a requirement (p.4).

Regarding e-learning or electronic learning, a perspective in defining this term revolves around the medium or technology used to facilitate learning. Imel (2002) explains that “generally e-learning refers to instruction and learning experiences that are delivered via electronic technology such as the Internet, audio and videotape, satellite broadcast, interactive TV, and CD-ROM.” In other contexts, e-learning is also defined as “synchronous or asynchronous learning that is conducted over [the] Internet, intranet, extranet or other Internet-based technologies” (Abram, 2005).
Grensing-Pophal also (cited in Kirk, 2002) provides a definition of e-learning centered on how learning is facilitated:

E-learning is individual, customized learning, rather than organizational-based. It enables training professionals to present an abundance of courses and material right at the employee’s desktop. The learner can choose courses and review material at her/his own pace. When the course or instruction is completed, the program frequently presents an assessment tool. (p. 4)

Another perspective in defining e-learning has a corporate or business bent. For instance, Susan Gilbert, and M.G. Jones (2001) define e-learning as “the natural convergence of knowledge management and talent management and a way to bridge the gap between current skills and the new skills required as the business evolves.” Similarly, the Commission on Technology and Adult Learning (2001) provides a definition of e-learning centered on adult learning and preparation of the workforce to promote high quality jobs and productivity. In the Commission’s report entitled “A vision of e-learning for America’s workforce” (2001), e-learning is defined as:

Instructional content or learning experiences delivered or enabled by electronic technology. Functionally, e-learning can include a wide variety of learning strategies and technologies, from CD-ROMs and computer-based instruction to video conferencing, satellite-delivered learning and virtual educational networks… [I]t is not just web-based instruction or distance learning but includes many ways in which individuals exchange information and gain knowledge. (p.7)
Indeed, online learning has permeated the ambit of education and society with such magnitude that Hiltz and Turoff (2005) take a sociological perspective in defining it. They define online learning as a “new social process that is beginning to act as a complete substitute for both distance learning and the traditional face-to-face class.” This infusion of online learning into the mainstream of our educational system and the evolution of distance learning into distributed learning were expected. In 1997, Dede in his article entitled “Distance Learning to Distributed Learning: Making the Transition”, commented on how emerging technologies and media provide a wider-range of pedagogical strategies that enables new instructional paradigms such as distributed learning, which consequently steers us away from having to differentiate between traditional distance learning and traditional classroom education. Similarly, Kinnaman in February 1999 wrote an article entitled “The Death of Distance,” in which he posits how the Internet created “gold rush” like opportunities for the creation of new distance learning models. Kinnaman (1999) said:

New models of distance education will marry just-in-time instruction with each student’s teachable moments, regardless of when they occur.

The final victory of distance education will be a shift in the paradigm of school… The death of distance is upon us, and soon school will be everywhere – all of the places, real and virtual, where teachers and students gather or visit to teach and to learn. Distance education will cease to be a separate component of schooling. It will just be (p. 48).

Turoff (1999) also predicted the blurring of distance learning and traditional face-to-face classes. In his invited plenary session entitled “An End to Student Segregation: No More Separation Between Distance Learning and Regular Courses” at the 1999 Telelearning
meeting in Montreal, Canada, he expressed how students in the classroom were at a disadvantage compared to students in distance learning courses. Turoff said “in my view a student in a face-to-face class that is not augmented by a collaborative learning approach and by asynchronous group communications technology is not getting as good an education as the distance student who has those benefits.”

Perhaps, these prophetic insights can be better understood by looking into the two alternative terms distance learning and distributed learning used to describe online learning. In 1989, the U.S. Department of Education’s Office of Educational Research and Improvement defined distance education as “the application of telecommunications and electronic devices which enable students and learning to receive instruction that originates from some distant location” (Bruder, 1989). Alternatively, Moore and Kearsley (1996) defined distance education as “planned learning that normally occurs in a different place from teaching and as a result requires special techniques of course design, special instructional techniques, special methods of communication by electronic and other technology, as well as special organizational and administrative arrangements.” (p. 2).

Hanson et al. (1997) listed Michael Moore’s definition and that of Borje Holmberg and Otto Peters as central to a unified definition of distance education. Borje Holmberg (cited in Hanson et al., 1997) characterized distance education as

various forms of study at all levels which are not under the continuous, immediate supervision of tutors present with their students in lecture rooms or on the same premises which, nevertheless, benefit from the planning, guidance, and teaching of a supporting organization (p. 2).
Alternately, Otto Peters (cited in Hanson et al., 1997) focused on the technology and
defined distance teaching and education as

a method of imparting knowledge, skills and attitudes which is

rationalized by the application of division of labor and organizational

principles as well as by the extensive use of technical media, especially

for the purpose of reproducing high quality teaching material which

makes it possible to instruct great numbers of students at the same time

wherever they live (p.2).

Other variations in defining distance education have been put forth by other authors;
however, their approaches have centered on the identification of major components and
characteristics in distance education programs. For example, Keegan (1994) has identified
five main characteristics in the different definitions of distance learning by individuals and
organizations in the field of education. These five characteristics are a) the physical
separation of teacher and student, b) the influence of the educational institution providing the
curriculum and learner support services to students, c) the technology used to unite the
teacher and student and provide the course content, d) the facilitation of two-way
communication for dialogue to occur, and e) the limited presence of classmates in the
learning process increasing the likelihood of students being taught individually rather than in
a group. Likewise, the California Distance Learning Project (Pallof & Pratt, 1999),
proposed five crucial elements innate to distance learning: a) the separation of teacher and
learner at least during the majority of each instructional process, b) the use of media to bring
together the teacher and the learner to go over the course content, c) the provision of two-
way communication between the teacher, tutors or educational agency with the learner, d) the
space and time separation between the teacher and the learner, and lastly, e) the control
learners have to shape their learning rather than by the distance teacher (p. 5).

Later, as education and technology evolved with the advent of the Internet, authors
such as Simonson (in Hanson, et al, 1997, p. 3) inferred that traditional distance education
delivered via print and linear media technologies were not applicable in the field any longer.
Simonson actually redefined distance education as “institutional-based, formal education
where the members of the learning group are separated geographically, and where interactive
telecommunications systems are used to connect learners, resources, and instructors.”
Furthermore, distance education professionals have suggested that “distance” might no
longer be as important and consequently distance education should not be segregated from
the rest of the educational system; Hanson, et al (1997) called for a convergence of both.

Conceivably, this educational convergence is what has steered many university and
training leaders to redefine their institutional initiatives from distance learning to distributed
learning as was the case at the University of Central Florida. Perhaps, Oblinger, Barone, and
Hawkins’ reason for favoring the term “distributed learning” might explain the birth of this
new “distance learning” iteration. These leaders stated their preference for the term
“distributed learning” over “distance learning” as they saw “distance” as too restrictive to
how online learning was evolving. Oblinger, Barone, and Hawkins (2001) further explain
that distance learning is a subset of distributed learning since distance learning focuses on
“students who are separated in time and space from their peers and the instructor” (p.1) while
distributed learning can take place on or off campus. They clarified that distributed learning
is not an online alternative to delivering lectures. Rather, they see distributed learning as an
extension providing the prospect of increased chances to interact with classmates and the
faculty member and the possibility to include simulations that facilitate the process of visualization. In fact, they believe that the new technologies will allow the “anytime and anyplace” characteristic of online learning to impact our current educational system, which, in turn, will bring new malleable dimensions to distributed learning. This malleability is vital as learning experiences will be customizable to fit the needs of students with disabilities or alternative learning styles, enhance traditional instructional methods to allow for deeper exploration of the subject matter and so that learning will not be constrained to class time or a place (Oblinger, Barone & Hawkins, 2001).

A complementary perspective on the transformation of education is provided by Chris Dede (1996), who says:

Emerging … forms of distributed learning are leading to a reconceptualization of education’s mission, clients, process and content.

This new instructional paradigm is based on shifts in what learners need to be prepared in the future as well as on new capabilities in the pedagogical repertoire of teachers. The following four new forms of expression are shaping the emergence of distributed learning as a new pedagogical model:

- Knowledge webs complement teachers, texts, libraries, and archives as sources of information.
- Interactions in virtual communities complement face-to-face relationships in classrooms.
- Experiences in synthetic environments extend learning-by-doing in real-world settings.
• Sensory immersion helps learners grasp reality through illusion (p.3).

A common reaction to the emergence and penetration of technological advances in education is that of a threat representative of the demise of the teaching profession. Rather, such technological advances should be viewed as a change in roles including mentoring, facilitation, collaboration, and cognitive counseling. Dede (1996) explains:

Without skilled facilitation, learners … accessing current knowledge webs will flounder in a morass of unstructured data… [Furthermore], moving students from access through assimilation to appropriation requires educational experiences that empower knowledge construction by unsophisticated learners, helping them make sense of massive, incomplete, and inconsistent information sources. Weaving learner-centered, constructivist usage of linked [resources] into the curriculum and culture of traditional educational institutions is the next stage of evolution (p.29).

Dede’s position on the role of the instructor is further supported by DeLong (1997), who stated:

The most skilful instructor is therefore the one who can best teach discernment among [several] competing sources of information … and the development of pedagogical tools and curricular content will move beyond the scope of most individual faculty, who will require the help of a skilled team (p.1).
Other definitions of distributed learning have been proposed by authors such as Alavi and Rahman. For Alavi (2004):

Distributed learning is an instructional model that gives students access to a wide range of resources—teachers, peers, and content such as readings and exercises—independently of place and time. It leverages computing, communication, and multimedia technologies to create learning environments that can be richer and more flexible, scalable, and cost-effective than the standard classroom or lecture hall (p. 121).

Instead, Rahman (2005) emphasizes the technologies used in distributed learning and the paradigm shift from teacher-centered to learner-centered in his definition:

Distributed learning can be conceived as a means of providing learning opportunities beyond the boundaries of the traditional education system, through utilization of an available range of information technologies. Distributed learning sequences comprise e-mail, Internet, WWW, videoconferencing virtual conferencing), groupware, newsgroups, simulations, e-groups, chatrooms, and interactive and instructional software utilities. A distributed learning platform facilitates a learner-centered educational paradigm rather than a tutor-centered system, and promotes interactive learning, where the learner can initiate the learning processes (p. 669).

Perhaps, Farrell’s (2004) recount of Lea and Nicoll’s definition of distributed learning in her review of the book entitled “Distributed Learning - Social and cultural approaches to
practice” provides an outline of the basic elements referenced in any of the characterizations of distributed learning. These basic elements are:

- The breaking down of traditional boundaries between face-to-face and open and distance education.
- The growth of new information technologies as mediational means in distributed learning settings.
- Changes in our conception of the ways in which learning and teaching are distributed across space and time.
- Learning as a shared enterprise distributed between individuals in several different contexts.
- Learning as distributed between diverse contexts and not tied to formal institutional settings.
- The relationship between global and local contexts of learning. (p. 443).

Regardless of the emphasis placed in the different definitions of distance learning and distributed learning, an amalgamation of approaches to education has been taking place. Convincingly, this convergence of distance education with mainstream education and corporate training is further vindicated by the increased interest in the “blended/hybrid learning” phenomenon, which generally comprises the offering of programs combining face-to-face and online methods. In recent times, authors, practitioners, and researchers have been reporting on the adoption of blended/hybrid learning at different universities and corporations. For example, the Chronicle of Higher Education reported on the expectations of a faculty member at Franklin W. Olin College of Engineering who foresees about 80 to 90
percent of their courses will be offered as hybrid or blended options in the next five years (Young, 2002). Also, the American Society for Training & Development (ASTD) (2005) reported that blended learning is the best alternative based on the results of their survey in which 46% of the respondents indicated blended learning as an effective delivery method. Also, ASTD projects that by the year 2006, 29% of all the U.S. training will be delivered in the blended modality, an increase from 16% in 2005. The pinnacle of how blended learning is gaining momentum and the convergence of educational systems is depicted in Hiltz and Turoff’s comment (2005) in which they characterized blended courses as the “greatest social and economic value to society.” A comment of this nature certainly merits looking into some of the blended learning definitions proposed by leaders in the field.

As explained by Martye (2003) and Brennan (2004), the term blended learning or hybrid learning has a different meaning to different people. The definitions include references to a blending of different technologies, pedagogical approaches, and instructional models. For instance, to the IDC, a global market advisory firm, the term blended learning in corporate training means “any possible combination of a wide range of learning delivery media designed to solve specific business problems” (p.58). For Garrett and Vogt (2003), blended learning in the context of business and industry consists of a “combination of multiple learning formats and methods” (p. 95). To Minocha (2005), blended learning constitutes a “framework that orchestrates movement from one learning experience to the next, so that each step builds on the previous one” (p. 20).

In the context of higher education, authors such as Hiltz and Turoff (2005), apart from the technologies used, define blended courses as those in which “there is no need for the instructor or students … to be concerned with which students attend the face-to-face class
and which students participate online” (p.61). At the Rochester Institute of Technology (2005), blended learning is “any course in which a significant percentage of the face-to-face classroom activities are replaced by instructor-guided online learning activities.” Dziuban, Hartman, and Moskal (2004) define “blended learning” as “courses that combine face-to-face classroom instruction with online learning and reduced classroom contact hours (reduced seat time)” (p.2). For the authors, the reduced classroom time is of great importance in their definition as the techniques and environment innate in both the classroom and online instruction can be optimized in the facilitation of learning. For Hartman, Dziuban, and Moskal (2004) blended learning falls somewhere in the middle between the fully online and face-to-face spectrum of instructional models (p. 2). Most importantly, Dziuban, Hartman, and Moskal provide a set of fundamental characteristics in the design of blended learning: (a) a change of focus from lecture based to student-centered instruction in which students become active participants in the learning process; (b) a growth in number and different ways to facilitate interaction between students, student to instructor, student to content and student with outside resources; and (c) the integration of formative and summative assessment method for students and instructors.

Overall, Futch (2005) explains that blended learning is gaining momentum and acceptance in all ambits of teaching and learning; however, a generally acceptable common definition has not yet surfaced. Futch has identified three areas to the definition of blended learning: (1) the level at which blending occurs; that is, at the institutional or program level; (2) blending at the course level; and (3) the amount of time spent in the classroom. An example of the first type of blended learning definition can be found in Farrell’s (as cited in
Futch, 2005) perspective in which he believes that institutions should encourage students to take a “blended” approach of face-to-face and online courses in their program of study.

In her search for examples of the second type of blended learning definitions—blending at the course level—Futch identified the work of Graham, Allen, and Ure (2003) in which they classified blended learning definitions at the course level into three distinctive types: 1) instructional modalities, 2) instructional methods, and 3) blending of face-to-face instruction and computer-mediated instruction. Definitions of blended learning with emphasis on instructional modalities look into the combination of different modes or delivery media; for example, “Blended learning means the combination of a wide range of learning media (instructor lead, web based courseware, simulations, job aids, webinars, documents) into a total training program” (Bersin & Associates, 2003, as cited in Graham, Allen & Ure, 2003, Appendix Table I, Instructional modalities, ¶2). In the case of definitions with emphasis on instructional methods, the focus has been on the combination of different instructional methods and strategies; for instance, Driscoll (2002, as cited in Graham, Allen & Ure, 2003, Appendix Table I, Instructional modalities, ¶2) defines blended learning as the “[combination of] various pedagogical approaches (e.g., constructivism, behaviorism, cognitivism) to produce an optimal learning outcome with or without instructional technology.” However, definitions of this type has been criticized as too broad giving way to include almost any type of instructional environment (Dziuban, Hartman & Moskal, 2004). Futch (2005) pointed out that definitions of the third type have been identified as the most common type of blended learning definitions in which the emphasis is on the blending of face-to-face instruction and computer-mediated instruction. An example of this viewpoint is provided by Dziuban, Hartman & Moskal (2004) in their stance on blended learning. These
authors believe that “blended learning should be viewed as a pedagogical approach that combines the effectiveness and socialization opportunities of the classroom with the technologically enhanced active learning possibilities of the online environment” (p. 3). Graham, Allen, and Ure (2003) clarify that the emphasis of this perspective “is not the blending of learning rather the blending of the learning environments, classroom, and online” (p.7).

The last aspect addressed in the various definitions of blended learning is the amount of time spent in the classroom. Voos (2003) from Babson College defines blended learning as “a combination of face-to-face and online media, with "seat time" significantly reduced”. Other examples of this definition type are used by the University of Central Florida in reference to the mixed-mode courses designated as “M” courses in the schedule and by Allen and Seaman (2005) for whom blended/hybrid learning encompasses courses in which 30 to 79% of the content is delivered online.

To conclude, as Dziuban, Hartman, and Moskal (2004) have stated, the extensive number of labels to describe the different instructional models of online learning including e-learning, asynchronous learning networks, distance learning, distributed learning, network based learning, blended learning, and hybrid learning is an indication of the lack of consensus and adoption of a particular model as the standard. Regardless of the label an institution chooses to designate its online learning, e-learning, distance learning or distributed learning endeavor, Oblinger and Hawkins (2005) recommend discussing the following issues to strategically institutionalize an e-learning program:
• Define what e-learning means to the institution. For some institutions, the term might mean offering fully online courses; for other institutions, the term might mean the adoption of a course management system.

• Determine the type of experiences and expectations students will bring to the institution. For example, some of these students have used technology throughout their lives and are experienced in the online environment; however, they might expect the face-to-face contact while attending college.

• Determine whether technology can ease the implementation of services and support to facilitate a highly interactive teaching and learning experience for faculty and students.

• Determine whether the institution can afford the cost of implementing an e-learning endeavor. Discern among the different alternatives and select the most affordable one.

• Examine whether the institution is placing too much emphasis on the “e” (the technology) instead of the “learning.”

Millennials, Online Learning, and Information Technologies

Oblinger and Oblinger (2005) highlight one of the most common assumptions about millennials’ preference regarding online learning and technology in general. Since this generation spends great amounts of time surfing the web, many assume their preference is to enroll in web-based courses over face-to-face courses. A study conducted at the University of Central Florida has proven contrary. In this study, boomers indicated more satisfaction with fully web-based courses compared to other generations. Actually, satisfaction levels gradually declined with each younger generation; that is, millennials were the least satisfied with online learning. The results of this study also indicate that older students are not as interested in the social aspects of learning as the millennials were. Instead, older students are
more concerned with convenience and flexibility (Dziuban, Hartman & Moskal, 2005).
Similarly, Kvavik (as cited in Oblinger & Oblinger, 2005) reports on the debunking of his
expectations in his 2004 study of freshmen and sophomore college students in 13 institutions
across five states in the United States. Kvavik’s expectations were that Net generation
students would demand greater use of technology in their educational experience; however,
the surveyed millennial students indicated preference for moderate use of technology in their
learning experience.

Currently, literature on millennials and online learning from a generational
perspective is limited. One of the few available studies is that of the generational satisfaction
with blended learning in higher education conducted by Dziuban, Moskal, and Hartman
(2005) which yielded interesting findings. The researchers developed eleven five-point
Likert scale questions that inquired about students’ experience with blended learning. These
questions covered the following aspects: 1) overall satisfaction, 2) ability to integrate
technology into their learning, 3) ability to control their own learning, 4) study efficiency, 5)
ability to meet their educational objectives, 6) willingness to take another blended course, 7)
ease of interaction, 8) amount of interaction with students, 9) quality of interaction with
students, 10) amount of interaction with the instructor, and 11) the quality of interaction with
the instructor. The survey instrument was administered in the year 2000 and 491 students
returned their completed survey. Some salient findings from the returned surveys were that
no matures (anyone born prior to 1946) opted to reply back. Most of the participating
students were from the generation X (42%) and millennial generation (38%). The majority
of the millennials (92%) were enrolled in undergraduate level courses; however, generation
X students were split between upper undergraduate level courses (42%) and graduate level
courses (51%). Lastly, millennial students deemed their experience with blended learning less positively compared to the other generation cohorts.

The analysis of the eleven components in the survey helped isolate two dimensions of what students identified as satisfaction in blended learning. First, overall satisfaction, integration of technology, more learning control, study efficiency, willingness to take another blended course, and meeting educational objectives were described as “learning engagement.” The second dimension of satisfaction was described as “interaction value” based on the ease, quantity, and quality of the interaction with the instructor and other students.

In this study, Dziuban, Moskal, and Hartman (2005) also identified a shift in depicting higher education through the historical use of the metaphor “knowledge is power” to a new metaphor stating that “the ability to use knowledge effectively is power.” The researchers explain that the metaphor “knowledge is power” depicted the nature of how knowledge was “sequestered” in the universities’ libraries, laboratories, and professors. That is, access to knowledge was controlled in the past. Today, millennial students and other generations have much greater access to information via the Internet than their professors did without the Internet.

Moreover, Dziuban, Moskal, and Hartman (2005) deduce the possibility that millennials are less satisfied because the new technologies offered by universities do not meet their expectations regarding the use of technologies for learning. Some of the reflective millennial sentiments shared in the study are (Dziuban, Moskal & Hartman, 2005):

- “I spend more time reading and reviewing without the professor telling me everything there is to know.”
- “I respect myself more as a self-teacher.”
- “Online gives me something to do when I’m bored with the professor.”

The researchers further supported their perspective on the transformation of a historically dominant metaphor into the birth of other metaphors. For instance, the authors refer to Wendover’s (2002) stance on how millennials view irrelevant tasks such as taking general education courses that do not directly apply to usable job skills as an “unresponsive object.” Moreover, if the student is expected to obtain a degree to get a promotion, the metaphor they would use in reference to the university would be “rite of passage.” Obviously, millennials have an unprecedented access to knowledge in the World Wide Web which offers a myriad of web sites, blogs, and wikis maintained by experts. These students are bringing this information and knowledge into the classroom to question any inconsistencies the instructors and classmates are conveying to the class. So the question that comes to mind is “who has the power?” It seems that power lies in those who are able to use knowledge most effectively (Dziuban, Moskal & Hartman, 2005).

Lastly, Dziuban, Moskal, and Hartman (2005) concluded with a recommendation and posited another possible rationale for millennials’ diminished satisfaction with blended learning. First, they forewarn older generations to not confuse the technological sophistication of the millennials with their maturity as it is quite easy to forget that many of these students are still adolescents. The difference is that their lives have been shaped differently by cultural, sociological, environmental, historical, and political perspectives compared to other generations. The researchers also believe that the pressure these students face to succeed in an environment where historically individual accomplishment is
emphasized while their nature is to work in teams has great bearing on their satisfaction levels with blended learning. In this case, the metaphor becomes “knowledge is teamwork.”

In another notable study by the EDUCAUSE Center for Applied Research (ECAR), four questions have contributed to a deeper understanding of millennials, online learning, and technology in general. The four questions addressed the following: 1) the kinds of information technologies that students use and their preferences, 2) the levels of skill with which they are using these technologies, 3) how the use of these technologies contributes to their undergraduate experience, and 4) the value the use of information technology adds in terms of learning gains (Kvavik, Caruso & Morgan, 2004). This study was conducted in 2004 in which 4,374 students from 13 institutions participated. The participating institutions were Colgate University, Drexel University, University of California-San Diego, University of Minnesota–Crookston and Twin Cities, University of Wisconsin–Colleges, Eau Claire, La Crosse, Madison, Milwaukee, Oshkosh, Stout, and Whitewater. Of the participating students, 95% were 25 years old or younger and were either freshmen or seniors. Also, 45% lived on campus.

Among the most significant findings of this study, researchers highlighted that 70.7% of senior students and 57.1% of freshmen reported owning a desktop computer; 38.5% of senior students and 52.7% of freshmen owned a laptop computer. Also, only 11.9% of the students owned a personal digital assistant (PDA). Interestingly, male students were more likely to own a PDA than female students. On the contrary, 82% of the students owned cell phones with female (84.7%) students more likely owning a cell phone than male (77.7%) students. Another interesting finding was that over 80% of the participating students had broadband access through university or commercial sources whereas 18.5% used modems.
Several students also indicated frustration due to overcrowded computer labs at their institution.

When asked about the primary use of computers, students indicated education as their first reason followed by communication; 99.5% used these technologies to write documents and e-mails, 97.2% surfed the Internet for pleasure and 96.4% did their classroom assignments. Very few students used their computers to create and edit their own video and audio or to create their web sites. In addition, students reported using their computers to write documents, email, and instant message, surf the Internet, and listening/downloading music and videos approximately 2 – 5 hours a week. Overall, seniors reported spending more time using their computers compared to freshmen. Also, seniors were likely to use more advanced applications such as spreadsheets, presentations, and graphics software packages. Use of technology for communication and entertainment purposes was significantly related to gender and age. For instance, the youngest segment of male student spends more time playing computer games, surfing the Net, and downloading music while women spent more time communicating.

When students were asked to rate themselves on the use of technologies and their skill levels, all students indicated that they were highly skilled in the use of communications, word processing, and Internet technologies. Also, they rated themselves least skilled in the creation of audio, video, graphics, and web pages. Seniors considered themselves with higher skill levels in the use of PowerPoint and spreadsheets compared to freshmen. The researchers found that while the quantitative data indicated students having suitable technology skill levels, which the researchers define as technology fluency based on the definition the National Research Council adopted in 1999, the qualitative data gathered
through student interviews indicated tendencies of only superficial or basic skill levels in the use of technology.

Since students majoring in business, engineering, and life sciences self-reported having higher computer and software application skills while students majoring in fine arts or engineering rated themselves with high graphics skills, Kvavik, Caruso, and Morgan (2004) concluded that the curriculum of the discipline influences the development of higher level skills in specific technologies. The study corroborated previous research findings on IT skill self-assessment tendencies among students in which students generally overrate their skills. In this study, student interviews revealed that freshmen overrated their skill levels more than seniors did. Also, men had tendencies to overrate their skills more than women.

Regarding the use of technology in the classroom, to the researcher’s surprise, 41.2% of the millennial students indicated preference for the moderate use of technology in the course while 30.8% preferred courses that used extensive levels of technology throughout. The least preferred type of courses was the fully online offerings (2.2%). Overall, students’ attitude toward technology was to view it as a tool, and as such they considered technology as an asset, and an obstacle depending on how well it was used. GPA (grade point average) was not a significant indicator for preferences in the use of technology in the classroom. Improved communication with the instructor was reported as the most beneficial outcome in the use of technology in the course followed by improvement in the management of classroom activities. With the exception of engineering and business students, millennials indicated that technology did not improve their understanding of complex concepts. When students were asked to rate the benefits of using technology in the classroom, they indicated convenience (48.5%) as the most beneficial. Although many indicated how
learning was improved through the use of technologies, only 12.8% indicated improved learning as a benefit.

Regarding the use of course management systems (CMS), more than 83% of the participating students indicated taking a class that made use of it. Most of the students were upbeat about the use of course management systems (76.1%). Females were more optimistic about the use of course management systems than males. When students were asked about the influence of using course management systems in their classes, they reported that the interactive features they perceived to be most useful in achieving their learning were least used by the faculty. These students were fond of sharing materials with their classmates the most (38.5%) followed by getting feedback on their assignments from the instructor (32%) and online readings (24.9%). Among the features that facilitated class management, the students reported as an improvement, the ability to track their grades (45.7%), online quizzes (38.5%), online readings (29.1%) and access to sample online exams (21.2%). Lastly, students reported the need for more consistency in the use of course management systems by the faculty and suggested training faculty on the appropriate use of technology in the classroom.

Kvavik, Caruso, and Morgan (2004) concluded that the learning revolution through the power of digital technology has not yet taken place. They do believe that some inroads have been made. Kvavik, Caruso, and Morgan were rather disappointed in the findings of the study but believed they were a reflection of growing pains. They also indicated that some of the circumstances were the outcome of the lack of training in the use of technology both for faculty and students. The tendency is to assume that Net generation students require less training with technology for educational purposes; however, the results proved this
assumption to be incorrect. By and large, Kvavik, Caruso, and Morgan (2004) indicated that
the “findings are … like an audit – a snapshot in time or an early picture of a process that has
great potential to support learning and is most promising.”
CHAPTER 3 – METHODOLOGY

The primary objective of this research is to portray millennial online learners attending a South Eastern metropolitan university in the United States. First, the research consisted of building a profile of the online millennial students attending the university. The researcher analyzed the demographical data including gender, ethnicity, age, and reactive behavior patterns and traits, to determine the frequency distribution and interaction between these variables. Then, for a deeper understanding of the online millennial students, the researcher analyzed the open-ended responses in the institutional survey regarding perception about the quality of online learning, and the preferences and dislikes of the participating millennial online students. To guide the analysis of who the millennials were from the generational cohort perspective, the researcher used the different characterizations of millennials found in the literature including Howe and Strauss’ (2000) seven millennial traits, Tapscot’s (1998) themes of the N-gen, Prensky’s (2001) cognitive style changes of the “games generation,” and Wendover’s (2002) perspective on millennials’ lifestyle. Also, for an understanding of millennials as individuals, dealing with a set of circumstances in an online learning environment, the researcher applied Long’s (1985) reactive behavior patterns. Taken as a composite, this study encompassed both quantitative and qualitative research design methods for a holistic approach.

The Instrument

The instrument consisted of five-point Likert scale and open response questions. The institutional survey collected data that included demographics such as gender, age, ethnicity, academic standing, work status, location of primary computer used to complete online
courses, and an approximate amount of minutes and miles students commuted from home to the UCF campus. The survey also gathered data about the number of online courses—both fully web-based and mixed-mode courses—students had taken at UCF, and their overall satisfaction with their online courses. Students were asked to rate on a scale of one (Definitely not) to five (Definitely) whether they were better able to integrate technology into their studying and learning, whether they thought web technologies made it easier for them to interact with other students, whether they felt they had more control over their learning, whether they would take another online course, and whether the availability of online courses allowed them to better meet their educational goals. In addition, the instrument gathered data on students’ perception about the amount and quality of interaction with other students in the online course and their instructor by rating their experience on a scale of one to five where one indicated that the amount or quality of interaction had decreased compared to the interaction in face-to-face courses and five indicated that the amount or quality had increased. The last set of survey questions inquired about what the students liked most and least in their online courses, and asked them to provide advice to fellow students who were contemplating to take an online course for the first time. These last questions were open-ended.

Lastly, the institutional survey included the Long/Dziuban checklist in which students were asked to read a series of descriptions classified by reactive behavior pattern, and self-identify with a specific reactive behavior pattern that best portrayed the student. Also, students were asked to read a second set of descriptions classified by reactive behavior trait and were asked to indicate all the traits these students felt applied to them. A copy of the
survey is available in Appendix B and a copy of the Long/Dziuban checklist is available in Appendix C.

Data Collection

The researcher obtained permission to access institutional data from the Research Initiative for Teaching Effectiveness (RITE) and was given data collected in 2003 via a survey administered by RITE at the University of Central Florida as part of the “Distributed Learning Impact Evaluation” program that examines learning, student satisfaction, and faculty satisfaction among other areas. The collected open-ended data of interest in this study were perceptions about the quality of an online course and students’ preferences and aversions in their online learning experiences.

The population consisted of UCF students taking fully online courses designated as “W” and mixed-mode online courses designated as “M” courses. The study targeted participants of age 18 and up. Participation in the study was entirely on a voluntary basis. To ensure anonymity, participants were not asked to provide their names. Students choosing to participate were asked to read a statement agreeing to take part in the study before they were allowed to respond to the survey. The statement also verified the anonymous nature of the survey. In addition, students were informed about the purpose of the study—improvement of the distributed learning initiative—the approximate amount of time to complete the survey, and the availability of the results from the study if the students wished to obtain a copy. Given the limited amount of resources, the participants received no compensation. Students, however, were not penalized for not choosing to participate.
Data Analysis

To initiate the study, the researcher sorted the collected data to identify respondents from the millennial generation, and subsequently analyzed the statistical data to determine the frequency distributions of participating millennial students by age, gender, ethnicity, reactive behavior patterns and traits, and their overall satisfaction with online courses. The researcher then performed the crosstabulation procedure to examine Chi-Square measures of independence between millennials overall satisfaction and other variables. The Chi-Square contingency tables proved useful to determine the existence of statistical significance between the categorical dependent variable—in this case, the millennials’ overall satisfaction with online learning—and the four independent variables of interest in this study, specifically gender, ethnicity, reactive behavior patterns, and traits. First, Chi-Square contingency tables determined whether each of the independent variables had a statistical significant influence on millennials’ overall satisfaction. Subsequently, for another analytical dimension, two contingency tables explored measures of independence between millennials’ overall satisfaction based on their gender and their reactive behavior patterns. The second table in this analytical procedure examined measures of independence between millennials’ overall satisfaction, their gender, and their reactive behavior traits.

Qualitative Analysis

The researcher next examined the qualitative data obtained through the open-ended questions in the survey to better understand this generational culture, using Miles and Huberman’s (1994) data analysis strategies: reflective notes, research journal, codification and a count of the frequency of coded data, patterns and themes identification, and comments on the possible relationships toward a logical understanding of the evidence. The researcher
next organized the students’ responses by reactive behavior patterns to explore themes, commonalities, and differences in the students’ perception of what constitutes quality in online learning, including both preferences and dislikes. During the exploration process, the researcher made reflective comments in the margin and also developed and implemented codes to facilitate the grouping of patterns and themes. Furthermore, the researcher kept a research journal detailing observations and the research process. This research journal was completed periodically throughout the process.

The researcher separated the open-ended data into four groups according to the participants’ reactive behavior pattern types, and vertically organized by survey questions. The analysis examined the open-ended question data by columns to determine any patterns and themes regarding quality in online learning, and the millennial students’ likes and dislikes. During this process, the researcher evaluated the data pertinent to each individual to contextualize students’ responses in a holistic manner according to demographic data, reactive behavior patterns, traits, and answers to other questions regarding their online learning experiences. The latter technique proved useful in highlighting what the individual student perceived about his or her overall online learning experience, a perception that a single response would over simplify or generalize.

Verification

This study followed the rigor established by RITE; validated the survey against previous institutional surveys; and followed Creswell’s (1998) stance on verifying qualitative research findings. Creswell recommends the implementation of at least two verification procedures in any study of a qualitative nature. He provides eight different procedures: 1) prolonged engagement and persistent observation, 2) triangulation of methods, sources, and
theories, 3) peer review and debriefing, 4) negative case analysis, 5) clarifying researcher bias, 6) member checks, 7) rich descriptions, and 8) external audits. Creswell explains that certain procedures can be completed with relatively ease and low cost while other procedures require a great deal of resources in time and cost. Due to limited monetary resources and time constraints, the researcher verified the research findings by providing rich description that clarified any possible researcher bias and solicitation of peer reviews and debriefing in the findings and conclusions sections of this study.
Findings from this study were organized into three areas: 1) a profile depicting millennial students based on their demographical data and their overall satisfaction levels with online learning, 2) an inquiry into measures of independence, and 3) an account of what millennial students are saying about quality, preferences, and aversions in their online learning experience. A total of 1,533 students, who took fully web-based and/or mixed-mode courses, responded to the institutional survey.

A Profile of Millennial Students

As depicted in Figure 1, the majority of the participants, who responded to the survey (n=1,533), were from the generation X segment with a total of 815 students accounting for 53.8% of the total number of respondents. Millennials were the second largest generational segment with a total of 346 students, or 22.8% of the population. Baby boomers represent the third largest generational segment with a total of 328 students, or 21.6% of the participants. Lastly, 27 students from the mature generation responded to the survey, 1.8% of the participating students.
The age of the participating millennials ranges from 18 to 21 (Figure 2). The largest group consists of the 21-year-old students (n=187) representing 54% of the millennial respondents. The second largest was the 20-year-old group (n=111), a 32.1% of the participating millennial students. The 19-year-old (n=38) and 18-year-old (n=10) groups represent a smaller percentage of the participating millennial students in which 11% were 19 years old and 2.9% were 18 years old.
As depicted in Figure 3, female millennials (n=259) represent the largest segment, 74.9% of the participating students as opposed to male millennial students with a total of 87 respondents representing the remaining 25.1%.
Figure 3 - Distribution of millennials based on gender

From the perspective of ethnic background, as Figure 4 shows, the majority (81.3%) of the millennial respondents are Caucasian (n=265). Hispanic students (n=27) represent the second largest segment of millennial participants with a representation of 8.3%. Asian American (n=18) and African American (n=16) groups represent 5.5% and 4.9% of the participating millennial students respectively. Data for the “ethnicity” variable was adjusted to correct for ethnic groups (Native American and other) with single or extremely small representation that did not have a bearing in the significance of the findings.
The distribution of the participating millennial students based on their reactive behavior patterns is shown in Figure 5. Among millennial respondents, 182 identified themselves as aggressive dependents, 53.1% of the participants; 69 respondents identified themselves as passive independent, 20.1% of the participants; 59 students reported being aggressive independent, 17.2% of the respondents; and 33 of the respondents identified themselves as passive dependent, 9.6% of the respondents.
The distribution of participating millennial students based on their reactive behavior traits is shown in Figure 6. Out of the 346 millennial students, 72.3% identified with the compulsive trait (n=250), 50.3% of the respondents identified themselves with the phobic trait (n=174), 36.7% identified having the hysteric trait (n=127), and 27.2% recognized having the impulsive trait (n=94).
Overall satisfaction with online learning was rated using a five-point scale with the following descriptors: very satisfied, satisfied, neutral, unsatisfied, and very unsatisfied. Taken as a whole, 43.6% of millennials (n=150) report being satisfied, followed by 25.6% of the millennials (n=88), who reported being very satisfied with their online learning experience. In the mid point, 15.1% of the millennials (n=52) report neutrality about their satisfaction with online learning. On the opposite end of the scale, 11.3% of millennials (n=39) report being unsatisfied and 4.4% of millennials (n=15) report being very unsatisfied with their online learning experience (Figure 7).

Figure 7 - Millennials overall satisfaction with online courses
Measures of Independence

The measures of independence between millennials’ overall satisfaction and variables of interest, including gender, ethnicity, reactive behavior patterns, and traits, yielded interesting findings. To perform the crosstabulation procedure, the overall satisfaction data were reclassified in which ‘very satisfied’ and ‘satisfied’ were categorized to represent the group of millennial students, who were satisfied with their online learning experience, regardless of their degree of satisfaction. Also, the ‘very unsatisfied’ and ‘unsatisfied’ groups were reclassified to reflect the group of millennial students unsatisfied with their online experience. Data representing the group that indicated neutrality in their satisfaction levels was not reclassified.

Crosstabulation – Overall Satisfaction and Reactive Behavior Patterns

Contingency tables for overall satisfaction and reactive behavior patterns were created to determine patterns between these variables. The procedure did not yield statistical significance for overall satisfaction and reactive behavior patterns, where $p > .05$. As reflected in Table 2, among the millennials, who indicated being unsatisfied with their online learning, 63.3% were aggressive dependent; 20.4% were aggressive independent; 14.3% were passive independent; and 2% were passive dependent. Of the students indicating satisfaction with their online encounter, 52.7% were aggressive dependent; 20.7% were passive independent; 14.4% were aggressive independent; and 12.2% were passive dependent. Among the millennials, who were neutral about their online learning experience, 42% were aggressive dependent, 26% in each group of aggressive independent and passive independent students, and 6% passive dependent millennials. A notable finding in this crosstabulation is that among all reactive behavior patterns, the aggressive dependent
millennials were the most satisfied with a representation of 52.7% as opposed to 20.7% of passive independent, 14.4% of aggressive independent, and 12.2% of passive dependent students indicating satisfaction; however, within the aggressive dependent students, a slightly higher percentage of millennials (63.3%) was unsatisfied. Also, in both independent groups (aggressive independent and passive independent), a greater percentage indicated ambivalence about their online encounter. Lastly, among passive dependent students, a larger percentage was satisfied (12.2%).

Table 2 - Crosstabulation of overall satisfaction and Long reactive behavior patterns

<table>
<thead>
<tr>
<th>Overall Satisfaction</th>
<th>Long Type</th>
<th>(N)</th>
<th>%</th>
<th>(N)</th>
<th>%</th>
<th>(N)</th>
<th>%</th>
<th>(N)</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Long Type</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Aggressive Independent</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Passive Independent</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Aggressive Dependent</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Passive Dependent</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unsatisfied</td>
<td>10</td>
<td>20.4%</td>
<td>14.3%</td>
<td>31</td>
<td>63.3%</td>
<td>1</td>
<td>2%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Satisfied</td>
<td>32</td>
<td>14.4%</td>
<td>20.7%</td>
<td>117</td>
<td>52.7%</td>
<td>27</td>
<td>12.2%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Neutral</td>
<td>13</td>
<td>26%</td>
<td>26%</td>
<td>21</td>
<td>42%</td>
<td>3</td>
<td>6%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Chi-Square (6, N = 321) = 12.42, p = .053

Crosstabulation – Overall Satisfaction and Reactive Behavior Traits

The crosstabulation tables regarding overall satisfaction with online learning and the different Long traits generated some noteworthy findings (Table 3). Although there was no statistical significance among those who identified with the phobic trait, 70% reported satisfaction, while 16.9% reported not being satisfied; 13.1% were neutral with their online learning encounter. With compulsive millennials, a statistical significance (p < .05) was found, in which 73.4% were satisfied with their online learning experience. The remaining percentage of compulsive millennial students was almost equally divided between unsatisfied (13.7%) and neutral (12.9%) perceptions about their online encounters. Among impulsive
millennial students, 61.8% were satisfied, 20.2% were neutral, and 18% were unsatisfied with their online learning experience. In this case, there was no statistical significance ($p > .05$). Lastly, among students with the hysteric trait, 68.6% were satisfied, 18.6% were neutral, and 12.7% were unsatisfied with their online learning. Also, in this case, there was no statistical significance ($p > .05$).

Table 3 - Crosstabulation of overall satisfaction and Long reactive behavior traits

<table>
<thead>
<tr>
<th>Overall Satisfaction</th>
<th>Phobic *</th>
<th>Compulsive **</th>
<th>Impulsive ***</th>
<th>Hysteric ****</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(N)</td>
<td>%</td>
<td>(N)</td>
<td>%</td>
</tr>
<tr>
<td>Unsatisfied</td>
<td>27</td>
<td>16.9%</td>
<td>32</td>
<td>13.7%</td>
</tr>
<tr>
<td>Satisfied</td>
<td>112</td>
<td>70%</td>
<td>171</td>
<td>73.4%</td>
</tr>
<tr>
<td>Neutral</td>
<td>21</td>
<td>13.1%</td>
<td>30</td>
<td>12.9%</td>
</tr>
</tbody>
</table>

* Chi-Square (2, $N = 322$) = 2.10, $p = .349$
** Chi-Square (2, $N = 322$) = 8.31, $p = .016$
*** Chi-Square (2, $N = 322$) = 3.02, $p = .221$
**** Chi-Square (2, $N = 322$) = 1.70, $p = .428$

As depicted in Table 3, the great majority of students in each of the trait groups were satisfied; however, a slight difference was found when looking for the second largest group within each trait, where phobic and compulsive students are unsatisfied as opposed to the impulsive and hysteric students who indicate ambivalence about their online experience.

Crosstabulation – Overall Satisfaction and Ethnicity

The crosstabulation of overall satisfaction and ethnicity depicted in Table 4 reflects that across all ethnic groups, 50% and above are satisfied with their online learning experience. The most satisfied ethnic groups were Caucasians with 71.3% and Asian Americans with 68.8% of the participating millennial students indicating satisfaction. Hispanic and African Americans were the least satisfied ethnic groups with 33.3% and 25% respectively. Among the largest ethnic groups indicating neutrality about their online
learning encounter were African Americans (25%) and Asian Americans (18.8%). No statistical significance \( (p > .05) \) was found in this case.

### Table 4 - Crosstabulation of overall satisfaction and ethnicity

<table>
<thead>
<tr>
<th>Overall Satisfaction</th>
<th>Ethnicity</th>
<th>African American</th>
<th>Asian American</th>
<th>Caucasian</th>
<th>Hispanic</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(N)</td>
<td>%</td>
<td>(N)</td>
<td>%</td>
<td>(N)</td>
</tr>
<tr>
<td>Unsatisfied</td>
<td>4</td>
<td>25%</td>
<td>2</td>
<td>12.5%</td>
<td>36</td>
</tr>
<tr>
<td>Satisfied</td>
<td>8</td>
<td>50%</td>
<td>11</td>
<td>68.8%</td>
<td>189</td>
</tr>
<tr>
<td>Neutral</td>
<td>4</td>
<td>25%</td>
<td>3</td>
<td>18.8%</td>
<td>40</td>
</tr>
</tbody>
</table>

Chi-Square \((6, N = 324) = 10.32, p = .112\)

**Crosstabulation – Overall Satisfaction and Gender**

Regarding overall satisfaction and gender (Table 5), the following findings were notable. Among the millennials students, who reported not being satisfied with their online learning experience, more females (16.4%) than males (13.8%) reported being unsatisfied. Of the millennials reporting satisfaction, more females (70.1%) than male students (63.8%) were satisfied. However, among students reporting ambivalence about their degree of satisfaction, more male students reported being neutral (22.5%) about their online experience than females (13.5%). Overall, the greater majority of female and male millennial students were satisfied with their online learning experience. No statistical significance \( (p > .05) \) was found.
Table 5 - Crosstabulation of overall satisfaction and gender

<table>
<thead>
<tr>
<th>Overall Satisfaction</th>
<th>Females</th>
<th></th>
<th>Males</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(N)</td>
<td>%</td>
<td>(N)</td>
<td>%</td>
</tr>
<tr>
<td>Unsatisfied</td>
<td>40</td>
<td>16.4%</td>
<td>11</td>
<td>13.8%</td>
</tr>
<tr>
<td>Satisfied</td>
<td>171</td>
<td>70.1%</td>
<td>51</td>
<td>63.8%</td>
</tr>
<tr>
<td>Neutral</td>
<td>33</td>
<td>13.5%</td>
<td>18</td>
<td>22.5%</td>
</tr>
</tbody>
</table>

Chi-Square (2, N = 324) = 3.70, p = .157

Crosstabulation – Overall Satisfaction, Long Reactive Behavior Pattern, and Gender

Crosstabulation tables for overall satisfaction, reactive behavior patterns, and gender were created to determine patterns or associations among these variables (Table 6). The procedure yielded statistical significance for overall satisfaction among female students (p < .05); however, there was no statistical significance for male millennial students (p > .05).

Among female aggressive dependent students, 20.8% reported not being satisfied with their online learning encounter; however, in the case of female aggressive independent students, 16.3% indicated being unsatisfied, while 6.8% of female passive independent and 4% of female passive dependent students stated not being satisfied with their online encounter.

Among female passive dependent students, 84% indicated satisfaction with their online learning experience, as were 72.7% of female passive independent students, 70.8% of female aggressive dependent, and 60.5% of female aggressive independent reported satisfaction with their encounter. Lastly, 23.3% of female aggressive independent students reported neutrality about their experience whereas 20.5% of female passive independent, 12% of female passive dependent, and 8.5% of female aggressive dependent students indicated being neutral about their online learning encounter (Table 6).
Among male millennial students, 25% of aggressive independent reported not being satisfied with their online learning experience. In the other reactive behavior types, 18.2% of passive independent, 10.3% of aggressive dependent, and none of the passive dependent male millennial students indicated being unsatisfied with their encounter. All male millennial students who identified with the passive dependent type reported being satisfied with their online learning experience, and 64.1% of aggressive dependent, 63.6% of passive independent, and 50% of aggressive independent male students reported satisfaction. Of the male millennial students, who reported being neutral about their experience, 25.6% were aggressive dependent, 25% were aggressive independent, 18.2% were passive independent, and none of the passive dependent types indicated ambivalence about their online learning experience (Table 6).

Overall, female millennials of the aggressive types were the most unsatisfied. On the other hand, female millennials of the passive types were the most satisfied across all reactive behavior patterns. Female students with the independent reactive behavior pattern were the most neutral about their online learning encounter. Male millennials of the independent types were the most unsatisfied and the dependent males were the most satisfied. Lastly, male millennials of the aggressive types were the most ambivalent about their experience.
Table 6 - Crosstabulation of overall satisfaction, Long reactive behavior types, and gender

<table>
<thead>
<tr>
<th>Overall Satisfaction</th>
<th>Aggressive (N)</th>
<th>%</th>
<th>Independent (N)</th>
<th>%</th>
<th>Passive (N)</th>
<th>%</th>
<th>Aggressive (N)</th>
<th>%</th>
<th>Dependent (N)</th>
<th>%</th>
<th>Passive (N)</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unsatisfied</td>
<td>7</td>
<td>16.3%</td>
<td>3</td>
<td>6.8%</td>
<td>27</td>
<td>20.8%</td>
<td>1</td>
<td>4%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Satisfied</td>
<td>26</td>
<td>60.5%</td>
<td>32</td>
<td>72.7%</td>
<td>92</td>
<td>70.8%</td>
<td>21</td>
<td>84%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Neutral</td>
<td>10</td>
<td>23.3%</td>
<td>9</td>
<td>20.5%</td>
<td>11</td>
<td>8.5%</td>
<td>3</td>
<td>12%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

** Males **

<table>
<thead>
<tr>
<th>Overall Satisfaction</th>
<th>Aggressive (N)</th>
<th>%</th>
<th>Independent (N)</th>
<th>%</th>
<th>Passive (N)</th>
<th>%</th>
<th>Aggressive (N)</th>
<th>%</th>
<th>Dependent (N)</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unsatisfied</td>
<td>3</td>
<td>25%</td>
<td>4</td>
<td>18.2%</td>
<td>4</td>
<td>10.3%</td>
<td>0</td>
<td>0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Satisfied</td>
<td>6</td>
<td>50%</td>
<td>14</td>
<td>63.6%</td>
<td>25</td>
<td>64.1%</td>
<td>6</td>
<td>100%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Neutral</td>
<td>3</td>
<td>25%</td>
<td>4</td>
<td>18.2%</td>
<td>10</td>
<td>25.6%</td>
<td>0</td>
<td>0%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Chi-Square (6, N = 242) = 14.84, p = .022
** Chi-Square (6, N = 79) = 5.90, p = .434

Crosstabulation – Overall Satisfaction, Reactive Behavior Traits, and Gender

Crosstabulation tables for overall satisfaction, reactive behavior traits, and gender were created to determine patterns or associations between these variables (Table 7). The procedure yielded statistical significance for overall satisfaction among female millennial students with the compulsive trait ($p < .05$). There was no statistical significance for any other traits and gender crosstabulation ($p > .05$). Female students with the impulsive trait (17.4%) were the most unsatisfied with their online learning encounter followed by female students with the phobic trait (16.1%). About the same percentage of female students with the compulsive (13.8%), and hysteric (13.4%) traits stated not being satisfied with their online experience. On the contrary, the great majority of female students across all traits
indicate satisfaction as shown in the following breakdowns: 75.9% compulsive, 71.8% phobic, 70.1% hysteric, and 66.7% impulsive—these findings indicate that compulsive female millennials are the most satisfied students. Lastly, more female millennials with the hysteric trait (16.5%) reported neutrality about their experience followed by female students with the impulsive trait (15.9%); a smaller percentage of female millennials with the phobic (12.1%) and compulsive (10.3%) traits also indicate being neutral about their online learning encounter (Table 7).

Among male millennials, those who identified with the impulsive trait (20%) are the most unsatisfied group followed by phobic males (19.4%); a larger percentage of impulsive males (35%) reported being neutral followed by hysteric males (28.6%); whereas, compulsive males (66.1%) were the most satisfied followed by phobic males (63.9%). Other notable statistics included: a) larger percentage of males, regardless of trait, expressed being neutral compared to females; b) a larger percentage of phobic males reported being unsatisfied compared to the percentage of phobic females; c) a larger percentage of impulsive males reported being unsatisfied compared to the percentage of impulsive female students; and d) a larger percentage of compulsive female millennials indicated satisfaction with their experience compared to compulsive male students. However, within their gender, a larger percentage of students with the compulsive trait indicated satisfaction in comparison to the students of other traits (Table 7).
Table 7 - Crosstabulation of overall satisfaction, Long reactive behavior traits, and gender

<table>
<thead>
<tr>
<th>Overall Satisfaction</th>
<th>Phobic * (N)</th>
<th>Phobic * (%)</th>
<th>Compulsive ** (N)</th>
<th>Compulsive ** (%)</th>
<th>Impulsive *** (N)</th>
<th>Impulsive *** (%)</th>
<th>Hysteric **** (N)</th>
<th>Hysteric **** (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unsatisfied</td>
<td>20</td>
<td>16.1%</td>
<td>24</td>
<td>13.8%</td>
<td>12</td>
<td>17.4%</td>
<td>13</td>
<td>13.4%</td>
</tr>
<tr>
<td>Satisfied</td>
<td>89</td>
<td>71.8%</td>
<td>132</td>
<td>75.9%</td>
<td>46</td>
<td>66.7%</td>
<td>68</td>
<td>70.1%</td>
</tr>
<tr>
<td>Neutral</td>
<td>15</td>
<td>12.1%</td>
<td>18</td>
<td>10.3%</td>
<td>11</td>
<td>15.9%</td>
<td>16</td>
<td>16.5%</td>
</tr>
</tbody>
</table>

* Chi-Square (2, N = 242) = .52, p = .773
** Chi-Square (2, N = 242) = 8.73, p = .013
*** Chi-Square (2, N = 242) = .77, p = .681
**** Chi-Square (2, N = 242) = 1.52, p = .467

<table>
<thead>
<tr>
<th>Overall Satisfaction</th>
<th>Phobic * (N)</th>
<th>Phobic * (%)</th>
<th>Compulsive ** (N)</th>
<th>Compulsive ** (%)</th>
<th>Impulsive *** (N)</th>
<th>Impulsive *** (%)</th>
<th>Hysteric **** (N)</th>
<th>Hysteric **** (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unsatisfied</td>
<td>7</td>
<td>19.4%</td>
<td>8</td>
<td>13.6%</td>
<td>4</td>
<td>20%</td>
<td>2</td>
<td>9.5%</td>
</tr>
<tr>
<td>Satisfied</td>
<td>23</td>
<td>63.9%</td>
<td>39</td>
<td>66.1%</td>
<td>9</td>
<td>45%</td>
<td>13</td>
<td>61.9%</td>
</tr>
<tr>
<td>Neutral</td>
<td>6</td>
<td>16.7%</td>
<td>12</td>
<td>20.3%</td>
<td>7</td>
<td>35%</td>
<td>6</td>
<td>28.6%</td>
</tr>
</tbody>
</table>

* Chi-Square (2, N = 80) = 2.53, p = .282
** Chi-Square (2, N = 80) = .67, p = .716
*** Chi-Square (2, N = 80) = 4.08, p = .130
**** Chi-Square (2, N = 80) = .85, p = .653

What Are Millennials Saying?

The following findings from millennials’ responses to the open-ended questions in the survey generated a closer examination into the perceptions of this generational cohort about their online learning experiences in higher education. The primary areas studied in the qualitative part of the survey are: a) millennials’ perceptions regarding quality in online learning, b) millennials’ preferences in their online learning, and c) millennials’ aversions in their online learning experiences. Students’ comments alluded to either positive (satisfactory) or negative (unsatisfactory) experiences. However, in some instances
millennial students were neutral about their experience and/or made suggestions to improve online learning.

Quality in Online Learning

When participating millennial students were asked about their perception of quality in online learning, aggressive students had the most to say as opposed to the passive students. Although students from all four groups of reactive behavior patterns responded to this question, only 7 out of 33 students from the passive dependent group (21.21%) opted to share their perceptions about quality in online learning. A slightly larger percentage of passive independent students replied to the quality in online learning question: 17 out of 69 millennials (24.64%). Approximately the same percentage of the two aggressive student groups responded to the quality in online learning question: 73 out of 182 (40.11%) aggressive dependent students and 24 out of 59 (40.67%) aggressive independent students (Table 8).

Table 8 - Frequency of responses for the quality in online learning question

<table>
<thead>
<tr>
<th>Long Type</th>
<th>(N)</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aggressive Independent</td>
<td>24</td>
<td>40.67%</td>
</tr>
<tr>
<td>Passive Independent</td>
<td>17</td>
<td>24.64%</td>
</tr>
<tr>
<td>Aggressive Dependent</td>
<td>73</td>
<td>40.11%</td>
</tr>
<tr>
<td>Passive Dependent</td>
<td>7</td>
<td>21.21%</td>
</tr>
</tbody>
</table>

The responses by millennial students regarding quality in online learning covered several areas and angles including convenience, flexibility, instructors, feedback, course design, pace, learning, technology, and the face-to-face component of online courses.
However, as depicted in table 9, the most frequently cited comments centered on three themes: 1) instructors, 2) course design, and 3) learning.

Table 9 - Top three aspects millennials associated with quality in online learning

<table>
<thead>
<tr>
<th>Long Type</th>
<th>Instructor</th>
<th>Course Design</th>
<th>Learning</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>%</td>
<td>N</td>
</tr>
<tr>
<td>Aggressive Independent</td>
<td>11</td>
<td>50%</td>
<td>1</td>
</tr>
<tr>
<td>Passive Independent</td>
<td>3</td>
<td>14%</td>
<td>3</td>
</tr>
<tr>
<td>Aggressive Dependent</td>
<td>8</td>
<td>36.36%</td>
<td>10</td>
</tr>
<tr>
<td>Passive Dependent</td>
<td>0</td>
<td>-</td>
<td>2</td>
</tr>
</tbody>
</table>

The most frequent theme regarding quality in online learning involved the role of the instructor (Table 9). Millennial students addressed issues regarding instructors’ availability and willingness to help, instructors’ organizational skills, timely feedback, interest in student’s learning, class management, and instructor’s ability to use technology. Aggressive independent students had the most to say about instructors’ influence in the quality of online learning. The majority of their comments had a negative connotation compared to the statements provided by students from other reactive behavior patterns; for instance, these students made statements such as “instructors could care less about their students,” “teachers don’t respond on time,” and “there was no need for a teacher--I taught myself.” However, a couple of positive remarks were also provided about the instructor and quality in online learning. For example, an aggressive independent student was appreciative of the instructor’s interest and follow up in light of the student’s lack of response and interaction in the course. Other aggressive independent respondents were more neutral in their comments by acknowledging that the quality of online learning depended on the instructor. Examples
of this type of comments included: “depends on instructor organization,” “having a good professor helps” and “it all depends on the instructor.”

Following the aggressive independent students, the group that commented the most on the instructor’s influence in the quality of online learning was the aggressive dependent type. Comments from this group were equally divided between unenthusiastic and neutral statements such as “teachers don’t work with you,” “must teach yourself, and there is little help available,” “I neglected my studies--teacher should assign homework,” “instructor has everything to do with the success of a web class,” and “Web is great for accommodating full time workers, if the teachers are readily available.” Furthermore, an aggressive dependent student suggested adding one required session to meet the instructor face-to-face.

Passive independent students, though fewer in number, also had similar insightful statements regarding instructors and the quality of online learning. Illustrative examples included: “lack of teacher availability to help out,” “professors need to respond to emails in a timely manner,” and “add just one class meeting to meet the instructor.” Lastly, passive dependent students did not mention instructors as a factor in the quality of online learning. Perhaps, this passive dependent inclination could be explained by their predisposition to avoid contradicting an authority figure.

The second theme regarding comments on the quality of online learning centered on course design issues (Table 9) that students from all behavior patterns shared. The group that made the most comments was the aggressive dependent type. The majority of their comments were unfavorable regarding course design. Comment examples included: “course was too confusing,” “lack of instructor indications made it hard to understand and study,” and “I spend more time trying to figure things out than learning.” In much fewer numbers
but similarly, aggressive independent, passive independent, and passive dependent students had unenthusiastic comments; for instance, “materials are outdated,” “…poorly designed course. You get no feedback,” “it was very difficult to … do tedious weekly work & not having study guidelines,” and “because of the format of the class, I couldn’t move through it as quickly as I would’ve liked.” On a positive note related to course design, an aggressive dependent student commented on how web courses allowed him to learn more as the course was organized around schedules.

The third most frequent theme in the students’ statements regarded learning matters (Table 9). Millennial students made many comments regarding learning from different angles including whether they learned or not, took charge and responsibility of their own learning, the difficulty to learn a particular subject matter, and having more control over their learning. For instance, aggressive independent and passive independent students had a positive outlook because they could take control and responsibility for their own learning in the online environment while the aggressive dependent students shared unenthusiastic statements about learning in the online environment. Some of the statements by the aggressive dependent students are: “Hard to keep up with the work, didn’t learn as much,” “Liked the web course but didn’t learn as much,” “Didn’t work as well as I had planned. I am a procrastinator and I wait until the last minute,” and “learning is difficult but a commodity.” A passive dependent student shared a similar experience about procrastination.

In addition to the three most frequently cited statements, millennial students provided more reasons and insights about their perception of quality in online learning that merit attention. Convenience was an aspect mentioned among students from all four groups of reactive behavior patterns. The aggressive dependent students most frequently valued
convenience—the ability to structure their studies around work, vacations, and other commitments in their lives. A few aggressive independent and passive independent students shared similar perspectives, but none of the passive dependents did. Passive independent and aggressive dependent millennial students both valued flexibility, meaning time management, while others simply mentioned flexibility and cross-referenced independence as another quality factor in the online learning experience.

Furthermore, aggressive independent, passive independent, and aggressive dependent students provided a great majority of positive comments about self-paced learning. However, a few comments about pace were atypical and merit attention. For instance, a passive independent student pointed out that the course format impeded her ability to move ahead with her modules even though she already knew the content covered in earlier modules; she had learned to pace her coursework on her own. An aggressive dependent student found it difficult to keep up with the work and felt that she did not learn as much.

Students also addressed the issue of interaction in the quality of online learning. Comments by aggressive independent, passive independent, and aggressive dependent students encompassed issues regarding technology features, feedback, isolation, and the need to have interaction in order to learn. Comments included: “I enjoyed the message boards for verbal communication,” and “I felt isolated…You need to learn from interaction, not just from books.” While a passive independent student described the quality of his online experience as poor due to the lack of feedback from the instructor, another passive independent student stated that quality meant leveling off the opportunities in a learning environment. She indicated further that the online learning course gave her the same opportunities as any other student in the course, who was not blind as she was. Also,
aggressive dependent students expressed how web courses were impersonal and distant; there was no interaction. Similarly, several aggressive dependent students shared that the lack of contact and communication with their instructor and classmates influenced the quality of their experience.

Another frequent theme in students’ responses about quality dealt with the desire to have more offerings of online courses in their programs. This comment was solely articulated by aggressive dependent students, who consistently expressed how much they liked the online modality and wished to have more choices offered by the school.

The students also identified technology as influencing the quality of online learning. Several aggressive dependent students reported grading issues and one of them believed her answers in the online exam were changed upon submission. Another student reported that server issues made his online experience difficult. The passive dependent student, who opted to answer the quality question, reported having problems getting online and having interruptions with her Internet connection while working on her assignments. One of the passive independent students shared her belief that technology could influence the online learning experience both positively and negatively.

An additional theme regarding quality in online learning experiences was the face-to-face component in mixed-mode or blended courses. In three instances, one passive independent and two aggressive dependent millennial students alluded to the irreplaceable nature of the face-to-face experience. Although one of these students, who had taken several online courses, expressed satisfaction with her experiences, she also indicated having an unsatisfactory encounter with a particular instructor, who in her perception ran the class poorly and limited access to help by requiring her to go to campus to get the assistance she
needed. None of the aggressive independent or passive dependent students made a remark about technology.

**Millennials’ Preferences in Online Learning**

In the institutional survey, participating millennial students were asked about what they liked the most in their online learning. Almost every student from the four groups of reactive behavior patterns responded to this question. As shown in Table 10, the response rate was as follows: aggressive independent, 94.92%; passive independent, 98.55%; aggressive dependent, 93.96%; and passive dependent, 96.97%.

<table>
<thead>
<tr>
<th>Long Type</th>
<th>(N)</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aggressive Independent</td>
<td>56</td>
<td>94.92%</td>
</tr>
<tr>
<td>Passive Independent</td>
<td>68</td>
<td>98.55%</td>
</tr>
<tr>
<td>Aggressive Dependent</td>
<td>171</td>
<td>93.96%</td>
</tr>
<tr>
<td>Passive Dependent</td>
<td>32</td>
<td>96.97%</td>
</tr>
</tbody>
</table>

Millennials’ responses regarding their preferences in online learning covered several areas including convenience, flexibility, time management, efficiency, pace, independence, course design, access, structure, learning, technology, reduced class time, and connectedness. However, the most frequently cited comments centered on the following themes: 1) convenience, 2) time management, 3) flexibility, and 4) pace (Table 11).
Table 11 - Frequency of top four aspects millennials liked most in online learning

<table>
<thead>
<tr>
<th>Long Type</th>
<th>Convenience</th>
<th>Time Management</th>
<th>Flexibility</th>
<th>Pace</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>%</td>
<td>N</td>
<td>%</td>
</tr>
<tr>
<td>Aggressive Independent</td>
<td>23</td>
<td>22.1%</td>
<td>5</td>
<td>7.5%</td>
</tr>
<tr>
<td>Passive Independent</td>
<td>23</td>
<td>22.1%</td>
<td>7</td>
<td>10.5%</td>
</tr>
<tr>
<td>Aggressive Dependent</td>
<td>51</td>
<td>49%</td>
<td>52</td>
<td>77.6%</td>
</tr>
<tr>
<td>Passive Dependent</td>
<td>7</td>
<td>6.8%</td>
<td>3</td>
<td>4.4%</td>
</tr>
</tbody>
</table>

Overwhelmingly, millennials cite convenience as their favorite aspect of online learning especially aggressive dependents. Over a third of the aggressive independent and passive independent students indicated convenience as the preferred aspect of online learning. However, a great number of students did not expand on what they meant by convenience; they simply indicated convenience as their most preferred aspect of online learning. Those students, who did expand their responses, cited convenience because they did not have to commute to go to class; they could learn and work on class assignments from home according to their priorities and availability; they could multitask; they could take tests in less stressful environments; they could take more classes; they did not have to go to class or endure lectures; they did not have to deal with parking hassles; and they could learn in the comfort of their homes, even in their pajamas. After convenience, the themes that were most frequently stated as the students’ favorite were time management and flexibility. To a great number of aggressive dependent students, time management was the most valued commodity. A smaller number of students from the other reactive behavior patterns also indicated liking the ability to manage their time. Among the reasons for their preference included: “they could have more free time,” “save time by not having to drive to school,” and
“schedule their course work according to the demands of their jobs and family obligations.”

An aggressive dependent student liked online learning because she learned to manage her time; she felt that her days were more productive as a result. Another aggressive dependent student indicated that there was no wasted class time. Other aggressive dependent students liked having control over their schedule.

While most of the statements regarding flexibility had to do with time and scheduling, many students identified flexibility as pace—they could advance through the course at their own pace or could pace ahead. About the same number of passive independent and aggressive dependent students indicated liking the flexibility of online learning. Also, more aggressive independent and passive dependent students chose flexibility over time management as the aspect they liked most.

The third most frequent theme regarding preferences in online learning was pace. To a good number of aggressive dependent students, pace was what they liked the most. In other words, these students liked the self-pacing and/or the flexibility to pace their learning according to their needs. The second largest group indicating pace as their favorite aspect in online learning was the aggressive independent students followed closely by the passive independent students.

Looking into the top four themes regarding millennials’ preferences by reactive behavior patterns, an interesting theme emerged that aligns with the commonly associated characteristics of each behavior pattern. Students with the attribute of independence liked the convenience online learning has to offer most. These individuals may be reaffirming their need to make decisions and operate at their own leisure; they do not need to gain approval from authority.
The high-achiever nature of aggressive dependent students justified their top selection: time management. These aggressive dependent students valued the ability to manage time to do all the work that they take on. Passive students chose convenience and flexibility as their top preferences, which reaffirm the value of Dziuban, Moskal, and Dziuban’s (2000) strategy in providing flexibility to these students.

In addition to the first four preferred features of online learning, a few millennial students indicated that they enjoyed having access to the course, grades, and feedback at any time as long as they were able to access the Internet. Students from all four reactive behavior patterns shared that they liked the feature of 24/7 access to the online course, however, aggressive dependent millennials mentioned it more so than the other types.

The next most popular aspect millennials liked in their experience were course design matters. These comments covered a wide gamut including the way the instructor organized the course; the ease with which students were able to understand and learn after the course; the subject matters were easily explained; having venues to get assistance from the instructor when students needed the help; being able to have group discussions with their classmates; being able to take exams and practice tests online when the students felt ready; having access to the syllabus and course materials; being able to interact with their instructor and classmates online; and the ease with which an instructor facilitated the transition from the face-to-face class to the online environment. Passive independent and aggressive dependent students were the most vocal about course design matters.

Efficiency was once again mentioned, although less frequently than in the question regarding the quality of online learning. The nature of efficiency revolved around time. A few of these comments made reference to how much the students liked saving time and not
having to waste in-class time. This statement could be an indication that the course was well-designed, in which class time and online activity were carefully planned to avoid unnecessary repetition. Overwhelmingly, aggressive dependent students made most of the comments regarding efficiency, while none of the passive independent students made any statement regarding time efficiency.

Only a few aggressive dependent students positively identified “learning matters” as the most favorable aspect of their online learning experience. Their perspectives on learning included “having lecture notes online so they could use them as learning aids;” “being able to gain more knowledge about technology;” “becoming more responsible about their own learning;” and “being able to learn about a subject more in-depth and in a focused manner.” One aggressive independent student stated that the online environment reinforced what she had learned. This student’s reflection could be an indication of a course well-designed, in which mundane repetition was avoided. A passive dependent student, however, stated that her favorite aspect was being in control of her learning—an unexpected statement from a behavior type, who requires a great deal of encouragement and attention from authority figures.

Some students preferred the structured approach to learning. Both aggressive independent and aggressive dependents reported that they liked clear instructions and due dates for assignments, not a surprising finding given that millennials clearly want to know the expectations and goals in their environment.

Millennials also stated some viewpoints and preferences that were not shared by the majority; however these statements embody the generational characteristics of the millennial cohort. These comments could prove useful in helping both the often neglected or
overshadowed passive independent and passive dependent students. These students indicated liking the reduction of class time and not being tied to a physical location the most; however, there was an indication that being connected was also important and liked in their personal experiences. Undoubtedly, the latter statement reinforces Prensky’s (2001) and Frand’s (as cited in Bisoux, 2002) depiction of who millennials are and their need to stay connected.

Millennials’ Aversions in Online Learning

The survey also asked participating students about what they liked the least in their online learning experience. The response rate was: a) aggressive independent, 88.14%; b) passive independent, 92.75%; c) aggressive dependent – 90.11%; and d) passive dependent – 96.97% (Table 12). Although the response rate was higher for the question on what millennials perceived as quality in online learning, fewer millennials opted to answer this question compared to the counter inquiry on what they liked the most.

Table 12 - Frequency of responses regarding the aversions in online learning question

<table>
<thead>
<tr>
<th>Long Type</th>
<th>(N)</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aggressive Independent</td>
<td>52</td>
<td>88.14%</td>
</tr>
<tr>
<td>Passive Independent</td>
<td>64</td>
<td>92.75%</td>
</tr>
<tr>
<td>Aggressive Dependent</td>
<td>164</td>
<td>90.11%</td>
</tr>
<tr>
<td>Passive Dependent</td>
<td>32</td>
<td>96.97%</td>
</tr>
</tbody>
</table>

Millennials’ responses regarding their dislikes in online learning covered several areas, including the instructor’s role, course design, lack of interaction, technology, lack of face-to-face component, feedback, time management, learning matters, communication, and lack of course offerings. However, the most frequently cited comments centered on the
following themes: 1) lack of interaction, 2) instructor’s conduct and teaching approaches, 3) course design, and 4) technology (Table 13).

<table>
<thead>
<tr>
<th>Long Type</th>
<th>Lack of interaction</th>
<th>Instructor’s conduct/ approaches</th>
<th>Course design</th>
<th>Technology</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>%</td>
<td>N</td>
<td>%</td>
</tr>
<tr>
<td>Aggressive Independent</td>
<td>7</td>
<td>8.4%</td>
<td>14</td>
<td>21.5%</td>
</tr>
<tr>
<td>Passive Independent</td>
<td>15</td>
<td>18.1%</td>
<td>13</td>
<td>20%</td>
</tr>
<tr>
<td>Aggressive Dependent</td>
<td>50</td>
<td>60.2%</td>
<td>30</td>
<td>46.2%</td>
</tr>
<tr>
<td>Passive Dependent</td>
<td>11</td>
<td>13.3%</td>
<td>8</td>
<td>12.3%</td>
</tr>
</tbody>
</table>

Noticeably, millennials disliked difficulty with or lack of interaction with the instructor and their classmates. Some of these students also indicated that the lack of interaction hindered their ability to learn the subject matter. Similar to the comments on interaction in the quality of online learning question, millennials’ comments on interaction and their aversions dealt with feedback, feeling of isolation, and interpersonal communication (both face-to-face and online). Many of them commented on how impersonal their online learning experience was; they valued the human touch. Moreover, several students indicated not liking the lack of face-to-face interaction. These responses seem to indicate that interaction is very important to the aggressive dependent students, but not to the aggressive independent students. This finding might be explained by the high energy and independent nature of aggressive independent individuals as they will do whatever they need or want to do regardless of approval or consent. The aggressive
dependent students, however, would require the approval of authority figures, which he or she could not get when interaction or communication lacks.

The second most frequent theme found in the millennials’ statements about what they liked least, focused on the role and conduct of the instructor. Students from all reactive behavior patterns indicated dissatisfaction regarding the difficulty and lack of communication with their instructor. Repeatedly, students made statements such as “hard to keep in touch with the instructor,” “instructor never responded to emails,” “lack of instructor interaction,” and “impossible to talk to instructor.” More aggressive dependent students were outspoken about this unsatisfactory aspect in their online learning experiences; however, several aggressive and passive independent students also shared the same sentiment. Other statements shared across all reactive behavior patterns regarding the instructor of the course included the instructor’s failure to clearly communicate the expectations of the course, the lack of the instructor’s knowledge about technology, the lack of mentoring and guidance from the instructor, lack of feedback from the instructor, instructor’s lack of organization, and the lack of assistance from the instructor. In addition, a few passive independent and aggressive dependent students lamented that they never met or got to know the instructor. One of the aggressive dependent students further indicated feeling uncomfortable asking questions to an instructor she did not know. Perhaps, this sentiment stems from her dependent nature on getting the approval of authority figures. Another notable pattern among aggressive dependent students was that they did not like having to depend on themselves alone to learn the subject matter. They felt that they needed more involvement from the instructor. Once again, this sentiment might have its root on the aggressive dependent’s need and respect for authority figures. Another explanation for this sentiment
might stem from the millennial characteristic of growing up with great parental involvement and therefore a reinforced dependency on the approval of authority figures by these students.

Millennials reported course design as the third most disliked aspect by participating millennials. A considerable number of students from all reactive behavior patterns stated their dissatisfaction about unclear directions on course objectives, lack of due dates, and the perception that much of their effort in the course was busy work. For instance, some of the following most common statements captured the gist of their perceptions: “too much work and not very detailed,” “unclear instructor objectives,” “a lot of busy work,” and “lack of direction.” The essence of other course design related statements dealt with specific features or instructional practices that included students’ dislike for: taking tests online, too much emphasis on discussion postings and readings, poor organization of the course, mandatory scheduled chats and labs, poor materials, lack of venues to communicate or to ask for help, and the lack of graded assignments or assessment venues throughout the semester to gauge progress. Also, there were a few comments regarding students’ dislike for the layout of the online course and cumbersome navigation throughout the course. These statements are perhaps a reflection of millennials’ evolving preferences in interface design as they interact with different technologies and become more sophisticated and distinctive in their expectations.

The next most frequently cited theme about millennials’ dislikes which were mostly among aggressive dependent students dealt with technology matters. Students’ responses seem to indicate that this particular group of students experienced server and network problems while taking their online courses. These complaints included slow network connections or servers being down. Other technology problems included their computers, the
difficulty a student had to access a computer over the weekend, not being able to send or
download attachments via e-mail, the additional cost of buying a required software package,
and problems with the quiz feature of the course management system. One of the passive
dependent students indicated not liking that some of her classmates lack the necessary
technology skills which hindered the pace of the course.

Other millennials—passive independent, aggressive dependent, and passive
dependent students—disliked the lack or delayed feedback by the instructor. Several other
aggressive dependents complained that since they were prone to procrastination, they missed
deadlines. Furthermore, aggressive and passive independent students did not like the
required attendance for face-to-face classes. A few passive independent students and one
aggressive dependent student complained that online courses were more time-consuming and
three aggressive students missed the role of someone to motivate them with the course work.
To a much lesser degree, millennial students indicated not liking to be a part of extremely
large classes, the lack of connectedness with instructors and classmates, and the lack of
course offerings in their programs.
CHAPTER 5 – CONCLUSIONS AND IMPLICATIONS

General Reflections

A review of the existing research and the data from the present study provide strong evidence that the expectations and learning styles of the college students from the millennial generation and the evolution of new instructional practices shaped by distributed learning are leading the way toward significant transformations of the education system in the United States of America. As an academic, who has experienced the millennial phenomenon, the researcher of this study has come to recognize and appreciate many of the delineated millennial traits among the students on her campus. Although her study is only an instance among the few studies in the past and the many more needed in the future, the researcher believes that her study contributes significantly to the understanding of the educational needs of the current and future millennial college students. The researcher’s hope is that faculty, staff, and the institution at large can benefit from the present study by understanding the millennial perspective in order to address and implement the most suitable administrative and/or instructional solution for the situation at hand.

A deeper understanding of the millennial generation will help us critically evaluate emerging instructional practices and implement the most suitable options. Because of the nature of higher education’s role in the lives of the students, the academy must know the needs of its students regardless of the generational cohort. Only through understanding the educational needs of all students can effective instructional practices be implemented. The fact that the millennial generation is the largest segment of the population in the history of the United States poses a pressing point for the academy in the years to come. In addition,
some of the millennial students are already letting us know that they are not pleased with many of the current curricular and instructional practices.

All students come to higher education with needs and expectations based on their total life experiences. Millennial students’ requests are not unreasonable, but should be seen in light of their unique lived experiences. In many respects, these young students’ requests are based on instructional practices that have been identified as sound teaching and learning principles. For instance, millennials are asking for more interaction with their faculty and classmates. Providing them with such interaction and a sense of connectedness is essential as a source of motivation, involvement, and intellectual commitment for students. Furthermore, collaboration and socialization with their classmates through the sharing of ideas and dialog could improve students’ thinking and deepen their understanding of the subject matter (Chickering and Gamson, 1991). Also, millennials expect prompt feedback. Students of any generational cohort want feedback, especially students who are just starting because they need help assessing what they know and do not know. Further, students need feedback at various stages in their learning endeavor to make necessary corrections. Students are also expected to reflect on what they learned and what they still need to learn based on the feedback they receive (Chickering and Gamson, 1991).

Many of the participating millennial students commented on the importance of time management. Some of these students even recognized the negative consequences of their procrastination in their learning experience. These millennial students are asking for guidance in learning to manage their time for meaningful and effective learning. This millennial desire is not surprising. As found in the review of the literature, millennials were raised in a sheltered environment with great parental involvement guiding them through
every step of their lives and managing their hectic schedules (Simmonson, 2004; Strauss, 2005).

Another millennial request is to provide clear goals and expectations which present great opportunities for the academy. According to Chickering and Gamson (1987), when students are upheld to high expectations, they are likely to perform to such levels; that is, it becomes a self-fulfilling prophecy. Evidence shows that colleges with high expectations enjoy secondary benefits in areas other than academic achievement such as a heightened sense of responsibility. Therefore, as long as high expectations are communicated to millennial students, they should perform accordingly.

Finally, the researcher believes that findings from studies investigating the characteristics and needs of online students in higher education in conjunction with research and emerging practices to evaluate the quality of online courses such as Thompson’s (2005) online course criticism model will allow us to provide the best online learning experience in a steadfast manner. Also, both bodies of research should provide a strong basis for UCF’s scholarship of teaching and learning endeavor, which consists of researching our own teaching methods and effectiveness in order to improve student learning (Faculty Center for Teaching and Learning, n.d).

Curricular and Instructional Implications

The following curricular and instructional implications were derived from the perspective of the researcher’s professional background. This researcher has been trained in the field of instructional design and has facilitated and collaborated in the design and development of online courses with many UCF faculty from multiple disciplines in the last ten years. She currently works with a team of new media developers within Course
Development and Web Services at the University of Central Florida. This team’s mission is to conduct research and development of innovative processes and technologies fitting to the institution’s distributed learning model while supporting the development of small-scale web services applications for UCF. As a member of the generation X cohort, who is constantly in contact with and works with millennials, she finds the phenomenon of millennial students intriguing and strongly believes that understanding this young cohort is crucial to better serve and prepare them for life.

As the researcher studied the open-ended responses of the participating millennials, she acknowledged the implications of some of these statements to improve the quality of online learning from the perspective of the millennial student. None of the students’ requests and their corresponding implications are unusual; rather, they are a reaffirmation of what educators and professionals concerned with teaching and learning have advocated through the years; however, based on students’ comments, failure to implement these good teaching and learning principles have not taken place for one reason or another. That millennials liked the convenience and flexibility of online learning to manage their time to accomplish more illustrates how fast our society operates daily. Hopefully, the millennial preference of convenience is complemented with improved learning in future online learning experiences.

Salient instructional implications in most need of attention include clearer instructions, well-designed online courses, pacing, and course structure, facilitation of communication, and interaction, and assessment. A significant number of millennials commented on their preference to have clear instructions on what the instructor wants them to accomplish, so they do not have to decode the intentions of the instructor or assignment. Probably, this implication has great bearing for millennial students since, as a generational
cohort, they have been brought up to be told what the expectations and goals are in a clear and consistent manner, particularly for passive dependent students. As Dziuban, Moskal, and Dziuban (2000) recommended, passive dependent students will specifically require clear and complete directions about the assignment or learning activity. Furthermore, clear instructions and expectations are crucial in any instructional moment as they provide a framework to evaluate students’ learning and guide the student in the learning process by identifying the skills and knowledge they need to master (Kemp, Morrison, & Ross, 1994).

Another instructional implication is the need to strategically design online courses. To avoid an unnecessary workload for the instructor, s/he should avoid too many assignments that will be perceived as busy work. Although any individual, regardless of the generational cohort, would not respond well to busy work, for millennials the best reward is to do meaningful work (Coomes and DeBard, 2004). The perception of busy work could also be managed by clearly explaining why completing the assignment is important since by nature millennials like to question everything and they also expect to be told clearly what the expectations or goals are. The curricular and instructional implications of strategically designing online courses have great bearing in the design of blended or mixed-mode courses. Kerres and DeWitt (2003) explained that it is important to find the right mix of asynchronous learning and face-to-face strategies, which is a major challenge in blended learning. The goal should be to find the integration of both methods to avoid the design of a course with two distinct components that do not connect. To meet this challenge successfully, the researcher recommends Kerres and DeWitt’s (2003) approach. These authors suggest identifying the instructional goal of the course, how students will demonstrate mastery, the incremental steps to achieve the goal and learning objectives for each step, the course activities and
assignments students must complete, and culminating by determining the proper modality for each activity or assignment (Kerres and DeWitt, 2003).

Also pacing is important to millennials. Among other instructional reasons for controlling the pace in online learning, instructors will have to decide to what degree they want to control the pace with which students should progress through the course, so that students who are high energy and independent can advance as quickly as they want, and those students who depend on approval and encouragement from their instructor can follow a guided pace. The majority of the comments regarding pace were positive as millennials were content with the ability to work on their course at their own pace; however, a few comments dealt with millennials’ frustration because they had to wait for lessons and quizzes to be released at a particular time. These comments may highlight the millennials’ desire for immediacy that Tapscott (1998) and Wendover (2002) identified as a characteristic of the millennials’ generation.

In the survey, many millennials shared their discontent about unorganized instructors and courses. As a generation that was brought up in a structured lifestyle filled with tasks and commitments throughout the week, it is not surprising that they dislike a lack of organization. Some millennials reported that they liked how the instructor structured the course because they knew the expectations and due dates—a reinforcement about unorganized professors and courses. Many techniques and practices are available to avoid the delivery of unorganized learning experiences, for instance, Ausubel’s (1968) advance organizers could be used to facilitate learning in a structured manner. These advance organizers take into consideration learners’ prior knowledge and serves as a “scaffold” as learning progresses. In other words, advance organizers provide a framework and facilitate
learning of new knowledge or skills based on what the students know or do not know. Instructors could incorporate expository advance organizers if the subject matter is completely unfamiliar to the student or comparative advance organizers to introduce new knowledge based on similar and familiar material to the student. Furthermore, Piaget’s depiction of the instructor’s role should be considered. According to Piaget, intellectual development requires “constructive activity,” in which errors and extra time should be allowed; however, such activity does not equate to leaving students at their will, rather, the instructor should create and organize a learning experience that provides examples to stimulate students to think critically (Piaget, 1973, as cited in Gredler, 1997). Similarly, Gagné outlines the functions of the instructor, which are: to inform the learner of the objectives, present stimuli, increase learner’s attention, help learners recall previously learned knowledge and skills, provide conditions that evoke performance, determine sequences of learning, prompting, and guiding learning (Gagné, 1967, as cited in Joyce, Weil, & Calhoun, 2000). This millennial request should not be confused with laziness or lack of interest on the part of the student; rather, this is a reaffirmation of the instructor’s role as depicted by Piaget and Gagné.

Facilitation of communication and interaction are important curricular and instructional matters. As we learned, millennials are team-oriented (Howe and Strauss, 2000) and have the need to be connected at all times (Prensky, 2001; Frand, as cited in Bisoux, 2002). These characterizations might explain many of the statements by the participating millennials, who disliked the lack of interaction and communication with their instructor and other students. A few students also commented that they did not like the feeling of isolation and the lack of feedback from their instructor, nor did the instructors
provide feedback as promptly as the millennial students expected. Perhaps, the perceptions of isolation and delayed feedback could have been prevented by establishing in the syllabi a reasonable time frame for professor feedback. Technological advances constitute the second driving force. That is, the ever evolving sophisticated tools and services will influence the methods and processes by which students, instructors, and the institution will interact in the distributed learning experience. Providing and delineating venues for communication and interaction between the student and the instructor, their peers, and their institution seem very important. The challenge would be to figure out the best combination of tools and the protocols to follow. Communication and interaction also present an important matter and an opportunity to reach out to passive dependent students, who might require more involvement and encouragement compared to the high-achieving aggressive dependent or compulsive students. Furthermore, communication and interaction are especially important in constructivist curricular and instructional approaches. Piaget (1973, as cited in Gredler, 1997) posited that the development of a child’s reasoning is enhanced through collaboration and interchange with peers. Also, Vygotsky (1978, as cited in Gredler, 1997) highlighted the importance of social interaction during learning. Vygotsky further explained that learning is not to be measured by the tasks learners can complete without the aid of the instructor, rather, learning depends on the tasks students can complete in collaboration with a tutor or knowledgeable adult, who should structure the collaborative instructional experience in a way that the instructor would aid the completion of difficult tasks until the learner masters such tasks. To further enhance the learning experience, a complementary institutional network, and a supporting process through which millennial students could find fellow students wanting to engage in similar learning activities, could prove to be a welcomed
service by millennials. For instance, at UCF, a tool called eCommunity was originally
developed and implemented to foster community building among students taking online
courses; however, its use was extended campus-wide for students and instructors wanting to
engage in community building regardless of course modality. Perhaps, the next evolutionary
step in providing “skill exchanges” and “peer matching” learning webs would resemble the
systems and processes used in massively multiplayer online games, in which players seek,
form, and interact in guilds or teams of characters with different skills and powers to
complete the quests in the game.

Assessment also proved to be of importance to the youngest generation of students.
The millennial generation was brought up in an educational structure driven by
accountability; so it should not be startling that some students indicated not liking the
absence of formative assessment that could have provided them with the feedback about their
progress that they want so much. A few students also indicated not liking traditional
assessment methods, specifically quizzes and exams. Perhaps, this is an indication that the
time to implement authentic assessment methods through venues such as electronic portfolios
has come. The researcher of this study concurs with Bransford, Brown, and Cocking’s
(2000) perspective on assessment. According to these authors, the key principles of
appropriately designed assessment are: to provide opportunities for feedback and revision,
and that what is assessed should be harmonious with the learning goals. The authors also
highlighted the two major uses of assessment: formative assessment—which provides
feedback to improve teaching and learning—and summative assessment—which measures
what the learners have ultimately learned. Examples of formative assessment are the
comments or feedback an instructor gives on drafts of papers, discussion postings, and self-
tests. This type of assessment is of great value to the students and the instructor as a way to
determine where the students are in their development, and to monitor and correct teaching
and learning practices. Once again, millennials are asking for what is rightfully theirs.

Future Research

The goal of the present study was to provide a holistic representation of millennials in
higher education specifically in the online environment, with the hope of identifying areas in
need of attention from the perspective of our students. Noticeably, further research is
required. Following are some recommendations by the researcher of this study.

Methodologically, future research should extend to include ethnographic and
phenomenological studies in which interviews and long periods of observation of millennial
students and their instructors can be afforded. Identifying millennial participants, who would
be willing to be interviewed, will provide the opportunity to clarify generalized statements.
Also, future research that includes the perspective of the instructor, who works with
millennial students, will provide a holistic understanding of the learning experience.

In this study, the majority of the millennial students were from the oldest segment
(i.e., 21 years-old). This segment has been exposed to the same experiences of previous
generations the longest; consequently, they are accustomed to current curricular and
instructional practices. They might not have realized the full potential distributed learning
and technological advances have to offer. Therefore, future research should look into how
the expectations of the younger segment of millennials and future generations to come will
evolve. For instance, it would be interesting to study how millennials, who are also referred
to as the “games generation,” will influence curricular and instructional practices in the
future. Many practitioners and researchers have already recognized the influence games will
have in facilitating learning as interest in virtual environments and digital games to facilitate learning is currently widespread.

Furthermore, stages of human development could prove to be a useful perspective in future quests to understand millennial students as we need to investigate how their maturity levels and psychosocial development impact their being, their appreciation of life experiences, and social adaptation. In other words, we do not know how much of the findings in the present study are related to the characteristics of the millennial generation as opposed to attributes of millennials as adolescents in their different stages of human and psychosocial development.

With the development of new means of communication such as mobile devices, blogs, wikis, and instant messaging, it would be interesting to study how the emerging modes of interaction and protocols will influence the expectations of the millennial online student. In addition, the examination of how preferences on interface design might evolve based on the demands of this technologically sophisticated audience could prove to be useful for faculty, designers, and developers of online courses.

Additional research should investigate the differences and similarities between the different generational cohorts with the goal of equipping faculty and staff with the necessary tools and processes to address the needs of the different generations.

Lastly, future research on millennials should look into the characteristics and needs of millennials, who have opted to not attend colleges and universities in pursuit of other paths in their lives and the possible implications for higher education to not have been an influential part in the lives of this segment of millennials.
Concluding Thought

To conclude, the researcher would like to share Oblinger, Barone, and Hawkins’ (2001) statement about distributed learning:

The future of distributed learning - and of higher education – will not be a one-size-fits-all approach. Far from spelling the demise of traditional classroom education, online learning (i.e., learning environments that use the Internet and/or the web) allows for differentiation of institutions, learning styles, and pedagogy. The variations provided by online learning environments will not only rival – but are likely to surpass – the diversity of types of institutions that currently characterizes American higher education (p.2).

These characteristics and circumstances are starting to appear already. Millennials are not fully content with the current state of online learning. The key will be to offer the most suitable learning environment that respects the needs and preferences of all generations by allowing new approaches and/or tools to integrate and enhance traditional methods while eradicating ineffective practices.
APPENDIX A – IRB EXEMPTION LETTER
March 3, 2006

Francisca Yonekura
11068 Pinewood Cove Lane
Orlando, FL 32817

Dear Ms. Yonekura:

The University of Central Florida's Institutional Review Board (IRB) received your protocol IRB #10-3305 entitled "A Study of Millennial Students and their Reactive Behavior Patterns in the Online Environment." The IRB Chair reviewed the study on 2/23/2006 and did not have any concerns with the proposed project. The Chair has indicated that under federal regulations (Category #4), research conducted in established or community accepted educational settings, involving normal educational practices, this research is exempt from further review by our IRB, so an approval is not applicable and a renewal within one year is not required.

Please accept our best wishes for the success of your endeavors. Should you have any questions, please do not hesitate to call me at 407-823-2901.

Cordially,

[Signature]

Barbara Ward, CIM
UCF IRB Coordinator
IRB#00001138, FWA00000351, Exp. 5/12/07

Copies: IRB File
Charles Dziuban, Ph.D.

RWijm
APPENDIX B – INSTITUTIONAL SURVEY
<table>
<thead>
<tr>
<th>Question</th>
<th>Definitely</th>
<th>Probably</th>
<th>Not sure</th>
<th>Probably Not</th>
<th>Definitely Not</th>
</tr>
</thead>
<tbody>
<tr>
<td>As a result of your online courses, do you find you have been better able to integrate technology into your studying and learning?</td>
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<tr>
<td>Do you think the Web technologies made it easier for you to interact with other students?</td>
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<td>Do you feel like you have more control over your learning in online courses as compared with face-to-face sections?</td>
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<td>Do you feel that the Web technologies helped you be more efficient with your study time?</td>
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<td>Will you take another course using the web?</td>
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<tr>
<td>Has the availability of online courses allowed you to better meet your educational objectives?</td>
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<tr>
<td>Comments:</td>
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</table>
In general, how do you feel the Web component of your online courses affects the following, when compared with your face-to-face courses that do not use the web?

<table>
<thead>
<tr>
<th>Item</th>
<th>Increased</th>
<th>Somewhat Increased</th>
<th>No Difference</th>
<th>Somewhat Decreased</th>
<th>Decreased</th>
</tr>
</thead>
<tbody>
<tr>
<td>The amount of your interaction with other students</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The quality of your interaction with other students</td>
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</tr>
<tr>
<td>The amount of your interaction with the instructor</td>
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</tr>
<tr>
<td>The quality of your interaction with the instructor</td>
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<tr>
<td>Comments:</td>
<td></td>
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</table>

As a result of your experience with online courses, do you feel you have changed your approach to learning?

Yes  No  (If yes, please explain):

What do you like most about courses that use the web?

What do you like least about courses that use the web?

What advice would you give to a student considering an online course for the first time?

Do you have any additional comments and suggestions for improvement?
APPENDIX C – THE LONG/DZIUBAN CHECKLIST
### The Long/Dziuban Checklist

**Directions:** Please consider the descriptions in the four boxes below and select the **ONE BOX** that you feel best portrays you. All the behaviors in a particular box may not fit you exactly, but please pick the **ONE BOX** you feel is the best fit.

<table>
<thead>
<tr>
<th>_____ A</th>
<th>_____ B</th>
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</thead>
<tbody>
<tr>
<td>• Highly energized and action-oriented</td>
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<tr>
<td>• Little need for approval; unconcerned with who they please</td>
<td></td>
</tr>
<tr>
<td>• Puts thinking into immediate action</td>
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<tr>
<td>• Very frank, speaks out freely</td>
<td></td>
</tr>
<tr>
<td>• Is truthful about feelings</td>
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</tr>
<tr>
<td>• Has no problem confronting people</td>
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<tr>
<td>• Lower energy level</td>
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<tr>
<td>• Little need for approval – unconcerned with pleasing others</td>
<td></td>
</tr>
<tr>
<td>• Independent and strong-willed</td>
<td></td>
</tr>
<tr>
<td>• Sometimes non-communicative</td>
<td></td>
</tr>
<tr>
<td>• Prefers to work alone</td>
<td></td>
</tr>
<tr>
<td>• May resist pressure from authority</td>
<td></td>
</tr>
<tr>
<td>• Independent thinker</td>
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</tbody>
</table>

### Directions: Please consider the descriptions in the four boxes below and select **AS MANY BOXES** as you feel apply to you. All the behaviors in a particular box may not fit you exactly, but please pick **AS MANY BOXES** as you feel are a good fit for you. In this case, you may pick from 0-4 boxes.

<table>
<thead>
<tr>
<th>_____ C</th>
<th>_____ D</th>
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</thead>
<tbody>
<tr>
<td>• Highly energized and productive</td>
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<tr>
<td>• Strongly motivated by approval</td>
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<tr>
<td>• Sensitive to the wishes of others</td>
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</tr>
<tr>
<td>• Translates energies into constructive tasks</td>
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</tr>
<tr>
<td>• Deeply values close bonds with others</td>
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<tr>
<td>• Some difficulty dealing with direct confrontation</td>
<td></td>
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<tr>
<td>• Highly idealistic, setting lofty goals for themselves</td>
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<tr>
<td>• Fosters harmonious relationships</td>
<td></td>
</tr>
<tr>
<td>• Lower energy level</td>
<td></td>
</tr>
<tr>
<td>• Needs approval – concerned with pleasing others</td>
<td></td>
</tr>
<tr>
<td>• Rarely shows anger or resentment</td>
<td></td>
</tr>
<tr>
<td>• Very sensitive to the feelings of others</td>
<td></td>
</tr>
<tr>
<td>• Very compliant and loyal</td>
<td></td>
</tr>
<tr>
<td>• Forms strong attachments</td>
<td></td>
</tr>
<tr>
<td>• Gives and thrives on affection</td>
<td></td>
</tr>
</tbody>
</table>

**_____ Trait 1**

- Thinks of all possibilities and contingencies before venturing into activities
- “What if” … person
- May see the negative side of things
- Unwilling to take risks

**_____ Trait 2**

- Highly organized and methodical
- Strongly motivated to finish tasks
- Perfectionistic
- Tends to form habits
- Extremely diligent in work habits
- May be mildly ritualistic

**_____ Trait 3**

- Sometimes explosive and quick-tempered
- Sharp tongued
- Very frank
- May act without thinking

**_____ Trait 4**

- Dramatic
- May have wide mood swings
- May overreact in some situations
- Can have emotional outbursts
- Creative thinker (rich imagination)
- Artistically inclined
- Devalues routine work
LIST OF REFERENCES


