CONCERNS ABOUT THE FUTURE FOR

OKLAHOMA CAREER AND TECHNICAL

EDUCATION TEACHERS AND THEIR

NET GENERATION STUDENTS

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CHAPTER I

INTRODUCTION

"Our students have changed radically. "Today's students are no longer the people our educational system was designed to teach" (Prensky, 2001, p. 1). Our society is continually changing and the values, beliefs and attitudes of generations are impacted by these cultural changes (Coomes & DeBard, 2004). With this continually changing environment, educational institutions are challenged and faced with the necessity of changing with the times in order to meet the needs of their students in learning environments. Generational needs may differ in the rapid changes noted in the areas of social/demographic changes, technology advancement and issues of globalization and internationalism. "A generation can be defined as a society-wide peer group, born over a period roughly the same length as the passage from youth to adulthood (in today's America, around twenty or twenty-one years), who collectively possess a common persona" (Howe & Strauss, 2000, p.40).

The Net Generation refers to those born between 1977 and 1997 (Tapscott, 1997). The name of Net Generation reflects the impact that the Internet and technology have had on their development (Lancaster & Stillman, 2002; Coomes & DeBard, 2004; Junco & Mastrodicasa, 2007). The Net Generation uses computers and technology at increasing

rates in comparison to previous generations (Jones, 2002). The Net Generation has a relationship with computers, technology, the Internet and academia as concerns are different by each generation and are related to concerns about the future (Junco & Mastrodicasa, 2007). The concerns about the future for teachers and the Net Generation are important as they impact student learning and the educational system. The needs related to concerns about the future may be different across generations. Meeting those needs by having knowledge and insight as to what those needs are in an ever-changing environment are important (Bradford, Nix, Spiro, 1990). The importance is noted in the new learning paradigm shift of traditional learners from an authoritarian, lecture-based model of education, content-focused learning, to a constructivist learning paradigm (Brown, 2005; Oblinger, 2005). In previous generations, faculty teaching styles were focused on student memorization, repetition, and recall of information in learning and the class was teacher-centered (Brown, 2005). The focus of the Net Generation includes understanding information and knowledge while discovering methods to actively engage themselves in the learning process. In this new model, the teacher is viewed as expert and mentor in transitioning the classroom to a learner-centered model of education (Brown, 2005).

In this study, three sets of information are presented. The initial information presented includes an overview of related literature. The problem explored in this research study includes research questions around which the orienting theoretical/conceptual framework; and the final section outlines the proposed study procedures including limitations and significance. The focus of this study is the concerns about the future for teachers and Net Generation students.

Overview of Related Literature

The literature related to this study is presented in the areas of the Net Generation, social/demographic changes, technology and the impact in education. Howe and Strauss (2000) characterize the Net Generation students as individuals who are fascinated by new technologies. The Net Generation grew up using the World Wide Web, instant messaging and cell phones with a continual connection to the digital world which is different than prior generations (Prensky, 2001) and educational institutions are challenged to meet the need of educating the Net Generation. The challenge is in adapting current teaching styles in order to accommodate the Net Generation learner. Oblinger and Oblinger (2005) state that "Whether the Net Generation is purely a generational phenomenon or whether it is associated with technology use, there are a number of implications" (p. 2).

The generation born between 1946 and 1964 are among those impacting our society in high numbers. According to the U.S. Census Bureau (2006) there are 78 million Baby Boomers born between 1946 and 1964 which includes over one-quarter of the U.S. population (as cited by Hellmich, 2010). This generation is represented by Baby Boomers such as recent presidents, George W. Bush and Bill Clinton, as well as celebrities such as Cher, Danny Glover, Dolly Parton, Donald Trump and Sylvester Stallone.

Social/Demographic Changes. Today's youth are technologically savvy; they have the opportunity to access technical information and machinery that were not afforded to previous generations. "The Net Generation is the most technologically advanced group of students ever" (Junco & Mastrodicasa, 2007, p. 17). These youth are exposed to digital technology in virtually all facets of their daily lives (Bowerman, 1987). This exposure ranges from professional to personal activities. The educational system now has new

3

opportunities to grow and develop in the knowledge of this communication revolution

that is shaping a generation and its world. The impact of change in this area is widespread

with social and demographic impacts (Leung, 2004). Giroux (1995) states that students

and teachers, as well as their empowerment as radical intellectuals, change the concept of

school as a part of a general struggle over essential social change (p. 30).

Social and demographic impacts can be noted in the technical knowledge

transmission of information of the Net Generation versus Baby Boomers (Tapscott,

1997). The Net Generation is more familiar with technology and its use more than

previous generations (Junco & Mastrodicasa, 2007) which include the Baby Boomers

who comprise the bulk of the teachers who are currently in the classroom with the Net

Generation. Howe and Strauss (2006) identify seven traits that the Net Generation has in

common that include the notation that they are special, sheltered, confident, team-

oriented, conventional, pressured, and achieving.

Net Generation (Net-Geners). The Net Generation has several name references including

Millennials, Generation Y, iGeneration, and Echo Boomers and represents over 80

million individuals who were born in and after 1982 (Lancaster & Stillman, 2002;

Coomes & DeBard, 2004; Junco & Mastrodicasa, 2007). There is a difference between

authors opinion of when the Net Generation was born as Tapscott refers to the Net

Generation as those born between 1977 and 1997 (Tapscott, 1997). For the purpose of

this study, Tapscott will be referenced, nonetheless, the referenced information from the

other authors is also included. Qualities that describe the personality of the Net

Generation are optimistic, value civic duty, achievement-oriented, and respectful to

authority which are reasons why this generation is considered to be the next great

generation (Coomes & DeBard, 2004; Lancaster & Stillman, 2002; Howe & Strauss, 2006).

Information technology has expanded over the past decade. The gap continues in technological advancement of the Net Generation versus Baby Boomers who grew up in an age of typewriters. Today, the computer and media literate Net Generation, uses programming as a part of everyday life (Leung, 2004). The Net Generation's computer savvy displays a keen understanding of the electronic society that is continually in development stages (Garrison, 2000). With this communication revolution at hand, there is a transformation taking place in business, education, health care, entertainment, government, and every other institution in society. Therein lies the challenge in bridging the generational experiences of two different generations with significantly differing needs.

The communication revolution of the technically savvy generation can be seen in the Net Generation (Howe & Strauss, 2000; Junco & Mastrodicasa, 2007; Oblinger & Oblinger, 2005). The Net Generation communicates in multiple ways in using technology via digital sources of cell phones, wireless PDAs, laptops, news groups, and message boards and are multitaskers (Brown, 2005; Prensky, 2001). This generation is the first to cope with advanced changes in technology and function at a high level of computer information in daily tasks. The Net Generation has had a huge impact on the educational system (Howe & Strauss, 2000). This impact is in the characteristics and expectations of the Net Generation transitioning to a learner-centered model (Prensky, 2001). "Learning is advanced when the use of Information Technology (IT) is predicated on an

understanding of the diverse needs, expectations and values of all of these students"
(Oblinger, 2005, p. 69).

Technological Advancement. As learning technology continues to expand, so does the student need and concern for knowledge and practical application in the learning environment. "Teacher perceptions of learning technologies are likely to be key factors in the successful integration of learning technologies" for students in the classroom (Cope *&* Ward, 2001, p. 72). Successful integration is more likely to take place when "teachers perceive learning technologies as part of a student-centered/conceptual change teaching approach" (Cope & Ward, 2001, p. 72). As a result of the probability of teachers lacking access to services of researchers and designers, relying on self-expertise in planning instruction for learners is important (Ausburn & Ausburn, 1997, p. 278). It remains incumbent upon faculty and educational institutions to stay abreast of the needs and concerns of their students. Effective classroom leaders need to continually seek knowledge, insight, and information regarding their designated fields of study, including advancements in technology, in order to attract, recognize, motivate, and retain followers who have the right mix of skills and attitudes (Maccoby, 2000, as cited by Tourish & Pinnington, 2002).

Statement of the Problem

By identifying future concerns of Net Generation students as compared with their Baby Boomer teachers, expectations through the lens of each generation for having future needs met may impact future curriculum development and professional development of teachers and effective teaching strategies for students. Without having this new and unique knowledge, student needs may not be met as faculty may continue to use their

own generational future concerns to express needs and overlay those in Net Gen students

with different concerns and needs. "Before curricula can be created to challenge the Net

Generation, though, faculty must know how Net Geners learn and interact with each

other, with technology, and life in general" (Oblinger & Oblinger, 2005, p. 2).

> If we do want more from our schools and if we want to create a world class
>
> education that prepares students to be fine citizens and economic leaders,
>
> schools need to engage students in a richer curriculum, one preparatory for
>
> jobs of the 21st century, and schools need to tailor teaching and learning
>
> strategies to the needs of the Net Generation in order to prepare them to enter
>
> the global economy of the modern age (Junco & Mastrodicasa, 2007, p. 45).

The problem is we do not know what the needs and concerns of the generation are

and not knowing delays the necessary problem solving implementations of assisting and

educating the Net Generation. The Net Generation continues to grow with the

advancement of information technology with includes: aptitudes, attitudes, expectations,

and learning styles. This knowledge of the Net Generation may assist teachers to improve

curriculum by taking practical steps to implement information into curriculum for

practical application.

Purpose of the Study

The purpose of this study is to describe and compare the concerns about the future

of career and technical education (CTE) teachers and their Net Generation students. The

Net Generation is more likely to orient faster into the work place with their advancement

in technical skills and abilities (Tapscott, 1997). This study has compared research found

in measuring concerns about the future for the Net Generation student in technology

centers in learning what the needs and concerns of the Net Generation are, as well as generational differences of CTE teachers and students, in presenting information in order to meet the needs of the learner. While there are some CTE subjects in the 2006-2008 data sets (Ausburn, 2003), there is by no means a comprehensive and systematic look at CTE teachers and students in the existing data set.

Theoretical Framework

This study is framed by the Generational Theory by Howe and Strauss (2000). This theory is essential to this study as it connects students and teachers of two generations and the importance of identifying needs through concerns about the future. Bringing this theoretical framework together to connect the unique needs of each generation as expressed through future concerns can assist in answering the question: How does learning influence the concerns about the future for the Net Generation? Theories of different generations have not been connected together regarding the concerns about the future.

Howe and Strauss' Generational Theory (2000) includes information regarding different generations and the era in which they were born having an impact on development and technology. Tapscott (1998) includes information regarding the needs of the Net Generation and teachers that vary. In this study, Generational Theory has included the impact of two generations of the Net Generation student and Baby Boomer teacher in education.

Research Objectives/Questions

The research questions that have guided this study are:

1. What are the concerns about the future for CTE Net Generation students?

2. What are the concerns about the future of CTE teachers who are teaching the students in Net Generation?

3. In what ways do the concerns about the future of CTE students and teachers match?

4. In what ways do the concerns about the the future of CTE match those of the general population?

The instrumentation the questionnaire used in this study was developed by Dr. Lynna Ausburn and doctoral students in the 2006 doctoral-level course OCED 6353, Educational Futures, Oklahoma State University. The design of the questionnaire was structured to describe and compare issues viewed or perceived as important in 3 populations:

1. Net Gen young adults (ages 18-25) in general population

2. Educators – adults of any age engaged in some aspect of education

3. General adult population – adults over age 25 not engaged in any way in education

Significance of the Study

This study seeks to address how generational perceived concerns and needs of technical students and faculty differ. The contributions and benefits to education attributed from this study is shown in the conclusions and recommendations as to how teachers can enhance curriculum and facilitate more relevant courses delivered in the optimal format for the Net Generation.

This study is structured to provide information about the Net Generation that can assist teachers in improving curricula with practical application tools and strategies that

can be beneficial to students. The different perceptions of the two populations being studied impact learning. Focusing on how technology is used for the delivery of instruction was noted in this study with data collection including importance to: (1) specification, procurement, and integration of new technologies into the curriculum, (2) the need for technology training for students and faculty, (3) the examination of common environments and common approaches (digital library services, computer labs, virtual learning communities), (4) the institutional approach to information technology services and technical support, and (5) technology monitoring and benchmarking (Kvavik & Caruso, 2005; Oblinger & Oblinger, 2005). This has enhanced the learning environment, student rapport, and their overall education. Are teachers leaders? Absolutely. The teacher leads the educational environment of the classroom with their knowledge, insight, intellect, guidance, and a multi-faceted group of skills and strategies that impact students over their lifetime. This study has addressed how generational perceptions, needs and concerns of technical students and faculty may differ in contributing to teacher knowledge in order to make improvements in core curriculum and teaching strategies for Net Generation student learning. "In common with other leaders, teacher leaders seek challenge, change, and growth" (Wilson, 1993, p. 10). The teacher may operate in many roles in guiding the student as educator, guide mentor, reviewer, friend, and overseer. Often said, "When the student is ready to learn, a teacher will appear" includes words to reflect the ample and fascinating learning that can take place when the student is open and willing to learn, listen, and implement information from the teacher. "No single principle of school reform is more valid or durable than the maxim that student learning

depends first, last, and always on the quality of the teachers" (Institute for Educational Leadership, 2001, p. 1).

The benefits for students as a result of this study can provide technology centers with user information that can enhance core curriculum and the ability to communicate effectively with education. Student survey results can also be beneficial to students as teachers examine their technology use and facilitation strategies that impact student learning. Both teachers and students can be positively influenced by technology (Dwyer, 1995; Honey & Henriquez, 1996).

This study can be beneficial to teachers in revealing technology skill level need that is "radically different from their earlier student cohorts" (Kvavik & Caruso, 2005, p. 9). Teachers can utilize this study and survey results to better prepare for effective facilitation in integrating teaching with technology as needed within the classroom (Riel & Becker, 2000). This study can add to literature for teachers in effectively educating students.

Assumptions of the Study

The following assumptions are made in regard to the conduct of this study:

1. Participants provided an accurate description (valid indicators) of the most significant emerging issues in technology within career and technical education.
2. Sample size, selection, and participant groupings were representative of research of technology students.
3. Electronic mail addresses of potential participants were readily accessible and current.

4. Subjects would be available to continuously participate in E-mail surveys.

5. The combined knowledge of group members would produce predictions at least as good as those produced by one member.

6. This study was limited to measuring perceptions of technology students in the regional career technical centers. This research study included six career and technology education regional career centers, the specific findings cannot be generalized to other populations or settings (Patton, 1980).

Limitations of the Study

This qualitative study examined technology skills and preferences of Net Generation students and teaching strategies and usages of teachers of six technology centers (Central Tech, Tri County, Pontotoc County, Gordon Cooper, Francis Tuttle and Meridian Tech Center) selected that represent the State of Oklahoma.

The data collected includes a purposive sample of teachers and students. The validity of participant responses was questionable as they are self reported, however, the same validity questions can be presented with any survey which relies on self reported data (Fraenken & Wallen, 2000).

Definition of Terms

Cooperative learning – requires instructional techniques to provide positive interdependence between faculty and students.

Gen N – is used exclusively by Carlson (2005); for the purpose of this study, Gen N will be used interchangeably when referring to Net Generation.

Generation N – is used by Marston (2007) and will be used interchangeably with Net Generation and Gen N within this study.

Generational location - refers to individuals being born during a similar time period and into specific and particular social, cultural, political, economic, and historical processes (Edmunds & Turner, 2002).

Generational theory - employs key concepts of generational location, generation as actuality, and generation units to explain similarities and differences that are characteristic of individuals born during a similar time period (Edmunds & Turner, 2002; Mannheim, 1952).

Information and Communication Technology – the utilization of computers, including the use of both software and the Internet (Stevenson, 2005).

Net Generation – refers to students who were born between 1977 and 1997 (Tapscott, 1997). Students who use technological engagement and interaction in the form of: e-mail, searching, instant messaging, blogging, downloading music and videos, and playing video games with an international network of friends and acquaintance (Kvavik & Caruso, 2005; Moore, Moore & Fowler, 2005).

Problem based learning – refers to students engaged in problem solving, identifying a problem and the conditions needed for a good solution, pursuing meaning and understanding, and becoming self-directed learners (Torp & Sage, 2002).

Technology – a term used to convey all of the electronic systems, hardware, software and support in higher education that relate to computer support in higher education. The term is also used interchangeably with instructional technology (Jonassen, Peck & Wilson, 1999).

Reporting

As educational institutions and teachers are challenged with the task of meeting the changing needs of their students, there are specific areas that are to be reviewed in order to measure those needs and concerns in order to problem solve the method for effective outcomes. Chapter One has introduced the problem and design of the study. The following sections and topics were presented in the study's review of the literature. Chapter Two was presented the literature review. Chapter Three was presented, in detail, the study's methods. Chapter Four presented the data collected and analysis. The study concludes with Chapter Five, a summary of the study, conclusions, implications and findings.

CHAPTER II

REVIEW OF LITERATURE

This chapter examines the literature associated with concerns about the future for teachers and the Net Generation; Social/Demographic Changes; the Net Generation; and Technology and the Impact in Education. The concerns about the future for teachers and the Net Generation have not been addressed. This review presents a survey of literature related to research from this study.

Social/Demographic Changes

Social and demographic impacts can be noted in the technical knowledge transmission of information of the Net Generation versus Baby Boomers (Tapscott, 1997). Education is characterized by social, demographic and cultural change as transformation takes place in institutions. Change is being felt and experienced as fundamental shifts take place in values, beliefs, ethics and ideologies.

Social change is the transformation of culture and social organization and structure that occurs over time. Society, as well as education, social, political, economic and cultural changes occur constantly (Macionis, 1997). There are a whole range of classic theories and research methods available within sociology for the study of social change (Howe & Strauss, 2000). Four main characteristics of social change occur: 1) It happens

everywhere, but the rate of change varies from place to place. 2) Social change is sometimes intentional but often unplanned. 3) Social change often generates controversy. 4) Some changes matter more than others do (Macionis, 1997).

There are causes of social change including culture, invention, discovery, diffusion, conflict, idealistic factors, and demographic factors. English Anthropologist Edward B. Tylor (1871) first used the term culture in his book, Primitive Culture, as that complex whole which includes knowledge, belief, art, law, morals, custom, and any capabilities and habits acquired by man as a member of society (Cronk, 1999). Tylor was not limiting women from culture as they are a vital part of it. Within the culture of education, social and demographic change occurs constantly impacting the future for teachers and the Net Generation.

Net Generation

Challenges and complaints exist regarding the Net Generation, today's graduates, lack basic critical thinking skills that are essential to succeeding in organizations (Lorenzo & Dziuban, 2006, p. 9). The question is why do these challenges exist? Educators state many of the Net Generation prefers not to read and seemingly relies too heavily on a cut-and-paste approach to assignments (Oblinger & Oblinger, 2005, p. 9). This may be a reflection of some Net Generation students but cannot represent everyone as there remains individualistic traits and characteristics in every generation as well as similarities. Another commonality of includes instant messenging and a Web 2.0 with communication becoming a real issue (Feiertag & Berg, 2008). Self expression is important to the Net Generation and they use various communication forms to convey

their messages (Feiertag & Berg, 2008). Despite these various usages of communication, learning how to communicate with cross-cultural generations is vital.

When the student succeeds this success reflects the teacher as well. Therefore, it is imperative that lessons be delivered with clarity and understanding that is at a level of understanding that the student can comprehend. Communication differentiations between generations can be challenging as word meanings have been altered over time. For example, within one generation, saying "that's bad" literally meant it was something negative and possibly unwelcomed while in another generation the wording meant something good, a welcomed addition and positive reflection. Thus, stating the same thing with different meanings. Feiertag and Berg (2008) communicate this well in Training Generation N: how educators should approach the Net Generation in communicating information about the 1) Hypertext mindset where students perceive life through technology; 2) What matters most in noting the value of information and communicating so understanding can be reached; 3) Generation N and business regarding the Net Generation within business environments, their characteristics and translation of information; 4) Generation N and learning communicating within the realm of education where administrators, faculty and students viewpoints differ and the necessity to get a better understanding of student needs and concerns are vital in order to meet them. Hence, confirms one of the questions of this study which asks what are these concerns?

Other important areas for the Net Generation and teachers that Feiertag and Berg (2008) conclude are: 5) Lack of communication skills as there are differences in communication styles, along with experiences, have had an impact on how information is conveyed and interpreted for the teacher and student. Educating students will have to

include delivering the message with clarity for clear understanding. Information technology is an important tool used to gather and communicate information that can be enhanced with the inclusion of other resources such as face-to-face interactions and activities that utilize critical thinking to ensure that students are learning. 6) Shifting our perspective in meeting student learning needs and concerns by including lecture as well as other educational tools such as interactive classroom activities that engage students regarding core curriculum. This shift includes making certain that modern technology is a part of the learning process so that students are engaged while setting goals that are attainable for students. While within the teaching process, taking the time to correspond with students regarding what they do and do not know is important in order to teach appropriately. For example, mid-term and final exams can provide insight regarding student learning. In addition, including quizzes, activities and technical resources within the classroom, can enhance learning as well. This does not mean making technology the end all within education just a part of it. It is important for the Net Generation to not rely solely on computers (Oblinger & Oblinger, 2005, as cited by Ras & Rech, 2009) as they can critically think for themselves and achieve their goals with proper application.

Traditionally, lecturing was the dominant teaching method in educating students (Tapscott, 1998). Students were to 'listen and learn'. Questioning the authority figure was not common, nor welcomed. On the opposite end of the spectrum, the Net Generation asks questions, want clarification and feedback throughout the learning process. Along with understanding, they want to know that they are being understood. With the Net Generation, there is a shift that has occurred regarding learning styles as these learners want to be engaged and be a part of the learning process by contributing their insight, wit,

experience and information (Oblinger & Oblinger, 2005). These characteristics move from a pedagogical model where teachers are the main focus to an andragogy model where students are crucial within the learning process with consistent involvement (Oblinger, 2003; Tapscott, 1998).

As the transformation occurs in seeing students as a part of the learning model versus mere participants, faculty are challenged to ensure student success in working with students in understanding the learning process (Tapscott, 1998). With the perception of students changing to an adult model in preparing them to be information literate and critical thinkers, students are to be contributers within discussions and actively participate in classroom activities (Oblinger & Oblinger, 2005, as cited by Ras & Rech, 2009). Furthermore, curriculum development must take place "helping students gain knowledge for knowledge's sake to engaging students in the construction of knowledge for the sake of addressing the challenges faced by a complex, global society" (p. 9). This development process must be continual as students learn, grow and develop on a continual basis.

In order to educate and accommodate the Net Generation, teachers are to understand the expectations of today's students. For example, Net Generation expectation is for immediacy (Tapscott, 1997) which is a shift from days of old where immediacy was a luxury and it was the norm to wait until the time came for the answer. For educators, in working successfully within this shift in education, it is important to assist students in understanding what expectations are set for them and explain how to meet those expectations. It is also important to set goals for students in order for them to achieve them. However, faculty support is still crucial in order for students to achieve those goals. For students experiencing difficulties, those viewed as 'behind the learning

curve', this assistance is necessary in order to avoid failure in educational goal

achievement (Friesen, 2006).

Technology and the Impact in Education

The Net Generation is impacted by technology in various areas of their lives

including academic usage. From the inception of technology to present day, Net

Generation student's usage of computers and web-based learning technology has been at

the very core of teaching and learning (Demb, Erickson & Hawkins-Wilding, 2004).

Franklin (1990) argues that technology is not only an artifact but also a system of social

practices that impacts multiple areas within everyday life. For teachers, the challenge is

to educate students through various resources and tools. For students, the challenge is to

listen, participate in the learning process, use critical thinking skills and be open for

change within themselves and adjust to the change necessary for their teachers. Feenberg

(1991) stated "…Technology is not simply a means but has become an environment and a

way of life: this is its substantive impact" (p. 8).

There are benefits to working cooperatively within the learning environment.

Lajorie (2003) notes that learning and technology integrated into classrooms can expand

knowledge, curriculum and student education and includes strategy awareness and skills.

Also, this learning can be beneficial to students in the business world within

organizational structures. As a result of this study, students revealed that they are

concerned about on-job training and being equipped to work efficiently and effectively

within the workplace environment. With necessary technical and practical skills in order

to complete their job tasks successfully, having good communication skills can be a great

benefit to the Net Generation.

Changes in technology have propelled into education and been used by institutions and Net Generation students (Tapscott, 1997). This includes classroom learning and activities being interactive and engaging with student participation throughout the learning process. Educators are challenged to meet the student learning needs in providing multiple ways of learning and institutions are challenged with the cost of this technological advancement in equipment, hardware and software (Bjarnason, 2003). As resulted in this study, teachers and students are concerned about education funding. How to meet those financial needs are noted in recommendations of this study.

Within education, the Net Generation seeks guidance for focus and goal achievement within their learning. Barnes, Marateo & Ferris (2007) notes that Net Geners want to learn but learn differently. These learners want to know how to learn and learn through multiple channels that includes online, in-person and activities. Tapscott (1997) notes that the Net Generation view of technology is as a catalyst for active engagement. What does this mean for the teacher? This means that the teacher becomes a multi-manager of various, diverse learning tools, resources and strategies in educating students. Also, this means that measurements must be in place to analyze and assess what is effective within student learning and what is not working. For those tools and strategies that are working, the next step is to implement them in standard teaching and core curriculum. Those areas that continue to be challenged areas should continually be reviewed and assessed in gathering student input and reviewing other institutions in noting what has been successful for them that may be continued within another educational institution.

The Net Generation and technology are a winning combination as it is a welcomed addition to their world. Technology is widespread in the world of the Net Generation as used in everyday activities such as texting, blogging and within the educational realm (Tapscott, 1998). Net Generation define technology with customization, or the ability to adapt technology to meet individual needs (Roberts, Foehr & Rideout, 2005). As this customization is a continual process of change, it is essential for educators to be aware and alert as to what and how Net Generation students are communicating.

Ras & Rech (2009) communicate this well regarding the Net Generation in stating that: Today, the Web 2.0 wave has resulted in many Internet-based tools focused on sharing knowledge such as: (Wikipedia), news (Digg.com, truemors.com), bookmarks (Del.icio.us, spurl, diigo), movies (YouTube), howtos (youteach, howcast), sourcecode (sourceforge), experiences (every blog and forum), etc. The Net Generation students expect similar tools for their work, hobbies, and entertainment in order to support different (learning) activities. Several major activities as well as Web 2.0 technologies and systems that can be used for those activities are presented in Table 1. All of these technologies are usable in capstone projects, at least for software engineering. Their support for different Net Generation characteristics is also depicted from Ras & Rech (2009) in Table 1, where the character "○" represent low, "◉" medium, and "●" high support. Schools can change in using characteristics of the Net Generation.

In the following, the main characteristics of the Net Generation are identified originally developed and conceptualized by Ras & Rech (2009):

C1—Digitally literate: having grown up with widespread access to technology, the Net Generation is able to intuitively use a variety of information technology devices as well as the Internet (Oblinger & Oblinger, 2005, as cited by Ras and Rech, 2009).

C2—Connected: "as long as they've been alive, the world has been a connected place, and more than any preceding generation they have seized on the potential of networked media" (Crittenden, 2002, as cited by Ras and Rech, 2009).

C3—Immediate: the Net Generation is fast and concentrates more on speed than on accuracy. They multitask and are able to move quickly from one activity to another. The response times are short (e.g., answering to an instance message). They are more used to switch contexts compared to the previous generations (Ras & Rech, 2009).

C4—Experimental: most Net Generation learners prefer learning by doing rather by being told what to do. They best learn experientially and prefer the "let's build it approach" (Rickard & Oblinger, 2003, as cited by Ras and Rech, 2009).

C5—Communicative: the Net Generation is very communicative because they like interaction and collaboration. They like to build social networks and work in teams. The Net Generation uses technology extensively to network and socialize (Oblinger & Oblinger, 2005, as cited by Ras and Rech, 2009).

C6 — Personalized: the Net Generation students demand personalized services on the one hand and like to personalize their environment by means of a right set of options on the other hand (e.g., according to interests, personal targets, or preferences such as the presentation of contents, the desired way of navigating through the learning contents, or

the learning style) – a one-size-fit all education will not address their individual

preferences and needs (Ras & Rech, 2009).

Ras & Rech (2009) further note that "Wikis highly support the Net Generation

students in the collaborative authoring of software engineering artifacts, which supports

their communicative character (C5)". To the contrary, personalized information sharing

or information distribution is not allowed with blogs (C6). The rating in Table 1 was

derived from Ras et al., (2009) by analyzing interviews with five teaching assistants who

were knowledgeable about Web 2.0 technologies and the procedures used in capstone

projects.

Table 1.Web 2.0 technologies for the Net Generation from (Ras & Rech, 2009)

Activities (Technology)	Usage scenario	C1	C2	C3	C4	C5	C6
Collaborative authoring (Wikipedia, Wikis)	Wikis are used to edit content on a web server. Everyone (e.g., all project members) can create, extend, modify, or remove the content (e.g., requirements, solutions, technologies, decisions, …)	◉	○	○	◉	●	○
Information sharing/distribution (blogs)	Blogs are used to share information and experiences. One author (e.g., the project manager) creates a blog entry and shares the information (e.g., customer feedback, deadlines, presentations, problems, …) with	◉	◉	○	○	○	

Activities (Technology)	Usage scenario	C1	C2	C3	C4	C5	C6
	anyone interested (e.g., registered via RSS)						
Social bookmarking (Del.icio.us, Digg)	Bookmarks are shared by people (e.g., project members) in order to exchange and comment content on other pages (e.g., interesting or conflicting requirements in the Wiki or tutorials on the Internet)	○					◓
Personal information delivery (Netvibes)	Adaptive portals that aggregate information from freely selected sources (e.g., via RSS), or similar to a dashboard. Multiple sources (e.g., different projects) can be presented, mixed, and filtered	○	◓			◓	●
Synchronous communication (chats, Skype, cell phones)	Instant synchronous communication channels are used to exchange information in distributed environments (e.g., at distributed locations, when students are at home, with a customer, etc.)	●	●	●	○	●	
Asynchronous communication (emails, micro-blogging)	Asynchronous communication channels are used to exchange and store information for later reuse or to preserve it for other people (e.g., communication with the client that might be needed in	●	◓	○		●	

Activities (Technology)	Usage scenario	C1	C2	C3	C4	C5	C6
	later maintenance phases (e.g., decisions of the client))						
Information annotation (tagging, commenting, Diigo)	Tagging or commenting can be used to annotate and classify content in a Wiki or an external site on the Internet. Someone (e.g., the project manager) can classify pages (e.g., the importance of requirements) using tags or comment fixed pages (e.g., negotiated requirements or decisions from the client)	◐					●

Net Generation students are multitaskers and learn in multiple ways including asynchronous communication and knowledge where sharing takes place as Wikis are continually learning and developing advanced skills and information to be applied in their daily lives (Ras & Rech, 2009). Furthermore, this includes software and project documentation, as well as sharing observations, and experiences that the Net Generation encounters through interactions with technical sources (Ras & Rech, 2009). As teacher and student responses from this study reveal that technology is a high area of concern, Ras & Rech (2009) convey this well as there are multiple usages of technology that are used in various ways including personal, social and academic communication. Staying abreast of what technical tools are being used, how to use them and when to use them

remains a challenge for the teacher and the student for effective and efficient usage in multiple environments.

Interacting and engaging with various information technology systems for the Net Generation is a daily occurrence (Ras & Rech, 2009). Tapscott (1998) notes that Net Generation access is granted without interruption which means that there is constant learning happening. Information is being shared across the globe and the information interpretation can range as widely as the locations themselves (Ras & Rech, 2009). Bringing valuable information together within the learning environment can be a great tool with appropriate usage.

The Net Generation are seen as technically savvy, fast-paced learners who enjoy interacting with technological systems (Tapscott, 1998). This is no exception within the educational system as the Net Generation strives to achieve interaction from various sources such as online communication such as the Internet, facebook, blogging and other media communications (Ras & Rech, 2009). Although the Net Generation enjoys online and technical communications, they still enjoy personal and face-to-face communications as based on a study by Roberts, Foehr & Rideout (2005) who notes that: They like face-to-face social interaction with their peers. Thus, noting relationships are important to the Net Generation as with the desire to be a part of the learning process versus just watching it (Tapscott, 1998). Learning by activity and hands-on application is important to the Net Generation. This includes peer-to-peer learning where working with others on activities and assignments are included (Oblinger & Oblinger, 2005). Thus, includes social and academic interactions with teachers and other students.

In the midst of being technically savvy, another area of importance for Net Generation students includes having high expectations about their educational goals (Rickard & Oblinger, 2003). The Net Generation do not limit themselves in their ability to achieve technical and academic success. They can be seen as thinkers, movers and shakers of this millennium. In fact, the Net Generation are the next generation of educators, workers, parents, officials and so much more who will be leaders that incorporate what is taught to them. Therefore, it is crucial that they learn as much as possible in order to be great leaders who instill high expectations, goal setting and practical application tools that can lead and guide the generations after them.

Net Generation savvy expands within the education through technology and they have a desire to be successful in task completion through various resources. Marston (2007) notes that completing the assigned task is more important than being at the job. This notes that finishing what is started is crucial to the learner and not giving up is vital. The Net Generation places value on what they do and the manner in which tasks are accomplished. They still desire guidance and support throughout the process (Tapscott, 1998).

Organizational accomplishments in completing tasks and responsibilities by Net Generation are achieved with a can-do attitude. This includes having goals defined in a step-by-step manner (Thielfoldt & Scheef, 2005). As goals are defined, feedback is important in understanding the process correctly and for future success of implementation.

Net Generation perceive themselves as continual learners in diverse environments which includes the academic and business world. Raines (2002) notes that this perception of Gen N is as a collective customer in every facet of society. Thus, having expectations of receiving desired outcomes of the product with good service. As Net Generation expectations are for good service and products, they are willing to produce with the same level of excellence that they desire to receive.

The classroom environment and educational systems are no exception to the rule for excellence in the world of the Net Generation. Hence, the transformation of change within the classroom from dominant lecture style to interactive learning has become of importance to the students (Tapscott, 1998; Oblinger & Oblinger, 2005). Organizational environments are impacted by Gen N who are willing to be independent in getting the job done, yet, still seek support, guidance and feedback. They want interaction, involvement and independence. Gen N want to learn and be a part of the learning process and not have fact regurgitated to them (Oblinger & Oblinger, 2005). They want to be talked to not at, as they value communication, relationships and mutual respect.

Literature reveals the Net Generation is more upbeat and conservative than former generations (Howe & Strauss, 2000; Tapscott, 1998). Research includes market and demographic research. Additional descriptions of the Net Generation includes being the center of attention in their families, has clear goals, is comfortable with teamwork, is respectful of parents and grandparents, is optimistic, takes technology for granted, and is practical (Alch, 2000; Howe & Strauss, 2000; Murray, 1997). Events associated with the Net Generation includes Columbine, Kosovo, Clinton impeachment, reality TV, crack cocaine, AIDS, World Wide Web, and video games (Paul, 2001). The Net Generation

finds power on the Internet "because it depends upon a distributed, or shared, delivery system rather than a hierarchical one" (Tapscott, 1998, p. 79).

Research revealed in a 1998 survey of the Net Generation having the Internet as a way of life, interest in politics was on the decline, volunteerism increased, beer drinking decreased, academic disengagement was on the rise, and support for abortion and casual sex decreased (Sax, Astin, Korn, & Mahoney, 1998). Objectives noted as essential by participants of the study included areas of importance: becoming an authority in their field (60 percent and 67 percent), obtaining recognition from colleagues (50 percent and 56 percent), having administrative responsibility for work of others (37 percent and 38 percent), being very well off financially (71 percent and 74 percent), and being successful in own business (38 percent and 39 percent) (Sax, Astin, Korn, & Mahoney, 1998, p. 29).

The study further revealed that the Net Generation were active users of the Internet with 54 percent participating in Internet chat rooms, 83 percent used the Internet for research or homework in the past year, and 66 percent communicated via email (Sax, Astin, Korn, & Mahoney, 1998). This research revealed that the self perception of the Net Generation included thoughts of high skills and abilities. Tapscott (1998) findings revealed the Net Generation as assertive, self-reliant, and curious. Advertising analysts assert that the Net Generation is media savvy and prefer to have true knowledge and information about products rather than image only (Howe & Strauss, 2000). Stereotypes in news and education media have often portrayed this generation as lacking values (Howe & Strauss, 2000). However, there is disagreement regarding this portrayal as the juvenile crime rate, teen pregnancy and teen drug usage have declined (Seibold, 1999) which is considered positive for this generation.

Technology is important for the Net Generation and is about communication and collaboration with a techno-centric focus (Feiertag & Berg, 2008). Tapscott (1998) states the Net Generation feels empowered by technology and employs interactivity on the Internet in expressing themselves.

Further research revealed that between 1997 and 2000 there was a 14 percent increase in computer owners and a 24 percent increase in Internet access (Newburger, 2001). By 2000, 64 percent of family households had a computer and by 2002, 83 percent of family households reported owning a computer including a 30 percent increase in a two year time span (Newburger, 2001). The Net Generation uses technology for various reasons and in multitasking skills. Technology advocates view computers as intellectual partners that support learning, knowledge and explorations (Jonassen, Peck & Wilson, 1999).

Initiatives regarding technology have taken place as revealed by the U.S. Department of Education who funded the Technology Innovation Challenge Grant Program in 1994 focused on the implementation of integrating technology (U.S. Department of Education, 2001). Research has revealed that multimedia, video formats 'virtual observation' and real-time observations can be an asset in effectively using technology (Lampert & Ball, 1998). Technology impacts the engagement and facilitation of cognitive processing (Jonassen, Peck & Wilson, 1999).

The Net Generation can be a challenge in questioning and probing in striving to learn and develop further, yet, with understanding of processes and procedures, they can produce winning results. Tapscott (1998) notes that the Net Generation continue to ask questions as they view the value contained in information. The misconception is that Gen

N is being disrespectful in questioning authority as times past reflect a time when questioning was not welcomed. For the Net Generation, questioning is a way of learning and understanding in order to function effectively as noted in the multiple ways that technology is used in order to learn, interact and grow in their knowledge and information on a daily basis (Ras & Rech, 2009). The learning environment is no exception to this rule as the Net Generation want to learn and know that what they are learning is beneficial in their academic, personal and in the business world.

CHAPTER III

RESEARCH DESIGN AND METHODOLOGY

This study used a descriptive quantitative research design to examine the concerns of Net Generation career and technical (CTE) students and teachers about the future of their educational sector. The purpose of this study was to describe and compare a set of specific concerns about the future of CTE teachers and Net Generation students. This study compared perceived concerns about the future for Net Generation students in Oklahoma technology centers in learning what the needs of the Net Generation are. As well as generational differences of teachers and students, comparison was also made between the concerns of CTE and those of the general population. This information would be useful in meeting the needs of CTE students and teachers. While there are some career and technical education (CTE) participants in the general population study by Ausburn, Ellis, and Washington (in process) that used the same instrument used in this study, there was no comprehensive and systematic look at CTE teachers and students in the existing data set. This study was intended to address this need.

The research questions that guided this study are:

1. What are the concerns about the future for CTE Net Generation students?

2. What are the concerns about the future of the CTE teachers who are teaching the students in Net Generation?

3. In what ways do the concerns about the future of CTE students and teachers match?

4. In what ways do the concerns about the future of CTE match those of the general population?

The problem for the study is that it is currently unknown what concerns underpin the needs of CTE, and this lack of knowledge delays educating the CTE Net Generation. By identifying concerns about the future of Net Genration students as compared with their Baby Boomer teachers, expectations through the lens of each generation for having future needs met may impact future curriculum development and professional development of teachers and effective teaching strategies for students. Without having this new and unique knowledge, student needs may not be met as faculty may continue to use their own generational future concerns to express needs and overlay those onto Net Gen students with different concerns and needs. "Before curricula can be created to challenge the Net Generation, though, faculty must know how Net Geners learn and interact with each other, with technology, and life in general" (Oblinger & Oblinger, 2005, p. 2).

This study is structured to provide information about the concerns of the Net Generation that can assist teachers in improving curricula with practical application tools and strategies that can be beneficial to students. The different perceptions of the CTE student and teacher populations can impact learning. Similarly, different perceptions of

the CTE educational sector and more general group from education and the general

population can undermine focusing on the educational needs that may be unique to CTE.

Research Model:

A quantitative comparative descriptive survey research design was implemented

for the study. A quantitative approach was the most effective and efficient method of

accomplishing the goals of this study as the sample selected was a sizable purposive

sample, representative of a mix of the State of Oklahoma in the CTE sector. Creswell

(2002) stated the quantitative design uses surveys, inventories, and questionnaires as a

means of intellectual scientific inquiry as researchers use quantitative designs to study

and draw influences about a population by studying the sample of the population. This

research included the use of a questionnaire as a method for organizing information

gathered from participants. The questionnaire was provided in the online format.

Population and Sample

Six technology centers (Central Tech, Tri County, Pontotoc County, Gordon

Cooper, Francis Tuttle and Meridian Tech Center) were selected that represent the State

of Oklahoma demographically and geographically. This sample includes rural, urban and

suburban schools. This was a purposive sample where teachers and students were

provided a website to access the survey. Fraenkel and Wallen (2006) defined population

as "the group to which the researcher would like the results of a study to be generalizable;

it includes all individuals with certain specified characteristics" (p. G-6); and sample as

"the group on which information is obtained" (p. G-7). The population for this study was

students and teachers in CTE technology centers in Oklahoma. The sample was

purposively drawn from the following six technology centers:

- Central Tech (Drumright, Oklahoma)

- Tri County (Bartlesville, Oklahoma)

- Pontotoc County (Ada, Oklahoma)

- Gordon Cooper (Shawnee, Oklahoma)

- Francis Tuttle (Oklahoma City, Oklahoma)

- Meridian Tech Center (Stillwater, Oklahoma)

These six technology centers represent the demographic and geographic diversity of CTE centers in Oklahoma. They included both urban and rural schools and a variety of CTE program areas. A descriptive profile of the obtained sample (n=90) is presented in Chapter IV.

Instrumentation

The questionnaire used in this study was developed by Dr. Lynna Ausburn and doctoral students in the 2006 Oklahoma State University doctoral-level course OCED 6353, Educational Futures. The questionnaire was originally designed to describe and compare issues viewed or perceived as important in 3 populations:

1. Net Gen young adults (ages 18-25) in general population

2. Educators – adults of any age engaged in some aspect of education

3. General adult population – adults over age 25 not engaged in any way in education

Construction and Validation of the Questionnaire

For this study, the questionnaire was slightly modified to eliminate information related to education sectors other than CTE and to the general population outside of education. In development of the original questionnaire, 13 issues related to the future of

education and society were identified for the questionnaire based on current literature. The 2006 OCED 6353 Educational Futures class generated a list and then refined it through discussion of the literature. They eliminated duplication of issues and themes, and checked for coverage of the major issues/themes identified in the literature sources.

The refined themes/issues list was given to small focus groups of Net Generation students, teachers, and general population adults to check for adequacy of coverage of perceived important issues and clarity of statement of the covered issues. Based on this input, no new issues were recommended, but further refinement of the wording of two issues was made for clarity.

According to Ausburn, Ellis, and Washburn (in press), these procedures addressed the content validity and "understandability" of the questionnaire. They conducted a statistical analysis on a large sample (N = 447) of subjects from all sectors of education and the general public. This analysis examined the rating/ranking data for the 13 items collected with this questionnaire between 2006 and 2008 to examine the internal consistency and underlying factor structure of the 13 items. Ausburn, et al. (in press) reported a Cronbach's coefficient alpha for the 13 items of .83; this demonstrates acceptable internal consistency according to criteria established by Nunnally (1978). The factor structure of the items reported by Ausburn, et al was a four-factor solution. The four factors were Performing General Education Requirements, Servicing Learning Needs, Maintaining Fiscal Accountability and Competitiveness, and Meeting Ethical Responsibilities. The factor loading accepted for placing an item into a factor was .30.

Comparison of this more general data set with the data from the present study relating specifically to the CTE student and teacher populations was valuable in comparing the CTE perceptions to those of more general populations.

Items on the Questionnaire

Three sets of data were collected on the questionnaire:

A.   Demographic variables – to allow for comparisons of perceptions across various sub-groups, specifically CTE students and teachers.

B.   Rating and ranking of the 13 futures issues/themes from the original questionnaire used by Ausburn et al. (in press) – to allow quantitative analysis of the CTE subjects' perceptions of what issues are of greatest concern.

C.   Open-ended questions about the future – for qualitative thematic analysis to complement, extend, and clarify the quantitative data. The qualitative data addressed issues that were beyond the purpose of this study and are not reported here. They will be used in future research.

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Procedures

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The research questionnaire was provided to the participants online, via a website to access the survey. The questionnaires were provided online to teachers and students at six Oklahoma technology centers. A contact person at each school was identified who gained access to participants and identified those willing to participate. A purposive selection was used with the willing participants noted. These participants included both students (n=29) and teachers (n=61) in the six regional technology centers. Approval to conduct the study in each school was obtained prior to seeking IRB approval for the study to

ensure that the study could be conducted. The volunteer participants were provided with the IRB-approved letter/consent form (Appendix A) and the questionnaire input form (Appendix B). They were asked to consider the 13 items on the questionnaire and to rate each of them with a rating of: 1) being not important; 2) being somewhat important; 3) being moderately important; 4) being important; and a rating of 5) being very important. Participants were then asked to select their top six items and place them in rank order, with the first choice listed as rank one and the sixth choice as rank 6. All data were uploaded into an Excel file and then into a SPSS file for analysis.

Data Analysis

Data were analyzed with descriptive statistics and ranking points analysis. Comparisons were made between responses provided by students with those provided by teachers. The process of compilation, comparison and itemizing data lead to conclusions and recommendations in the final chapter of the study.

The mean rating score was calculated for each of the 13 questionnaire items. The sigma rank point score ($\sum$RankPoint) was calculated for each item with the results received from participants who were asked to pick the six most critical areas of influence from the list of 13 in education and place them in rank order, with 1 = most critical. No tied ranks were permitted. To calculate ΣRank Point scores for the 13 items, points were assigned for each rank, with ranking and points reversed as follows:

Rank 6 = 1 point

Rank 5 = 2 points

Rank 4 = 3 points

Rank 3 = 4 points

Rank 2 = 5 points

Rank 1 = 6 points

Items not selected in the top six received 0 points.

For each of the 13 items, the earned ranking points were summed for all subjects to get the sigma rank point score ($\sum$RankPoint).

Final data analysis was completed for the 13 items through mean ratings, $\sum$ Rank Point scores ($\sum$RankPoint), and rank ordering and tier analysis based on $\sum$ Rank Point score clusters and gaps. These types of statistics have been determined appropriate for use in quantitative descriptive analysis (McCampbell & Stewart, 1992). This scoring and analysis model was patterned after the one used by Ausburn (2002, 2003) in studies of perceptions of educational issues held by panels of teachers. The procedure was also used by Brown (2007) and Ward (2010) in dissertation studies that used rating and ranking data.

CHAPTER IV

FINDINGS

The purpose of this study was to identify concerns about the future for career and technical education (CTE) teachers and Net Generation students; to make comparisons from those identifiers for students and teachers; and to compare the perceptions of CTE teachers and students to those of the more general population reported by Ausburn et al (in press). Thus, this chapter presents the sample data, data analysis process and the findings from the data analysis from the CTE student and teacher surveys. The goal of the research was to gain an understanding regarding concerns about the future for CTE teachers and the Net Generation. The first section of this chapter presents a description of the sample. An analysis of the findings follows and then a summary is included in this chapter. Specific research questions addressed in this study were:

1. What are the concerns about the future for CTE Net Generation students?

2. What are the concerns about the future of the CTE teachers who are teaching the students in Net Generation?

3. In what ways do the concerns about the future of the students and teachers match?

4. In what ways do the concerns about the future of CTE match those of the general population?

Description of Sample

A total of 90 CTE respondents (N=90) participated in the survey, including 61 teachers (nt=61) and 29 students (ns=29). The sample included participants from six technology centers (Central Tech, Tri County, Pontotoc County, Gordon Cooper, Francis Tuttle and Meridian Tech Center) in the State of Oklahoma. The overall composition of the sample consisted of approximately twice as many teachers as students. The education of the majority of students was enrolled in career tech, while some attended college. The educational attainment for the majority of teachers included having a Bachelor's degree. The majority of the participants' race was Caucasian. The complete demographic profile of the sample is presented in Tables 2-6. Table 2 presentes the gender distribution in the sample, which shows there were more females who participated in this study.

Table 2

Gender Frequency Distribution of Student and Teacher Groups

Gender	Student	Teacher	Total	
		Group		
Male	5	26	31	(34%)
Female	24	36	60	(66%)
Total	29	61	90	

The age distribution of the participant is shown in Table 3. The mean age for students is 25, and the mean age for teachers is 44.

Table 3

Age Distribution of Students and Teachers

Age Range	Group			
	Student	Teacher	Total	
18 to 19	2	0	2	(2%)
20 to 29	13	1	14	(15%)
30 to 39	6	11	17	(19%)
40 to 49	5	16	21	(23%)
50 to 59	3	25	27	(30%)
60 to 69	0	8	8	(8%)
No Response	0	0	0	(0%)
Total	29	61	90	

The highest educational profile attainment profile for participants is shown in Table 4. The most frequently attained levels for students was enrolled in Career Tech and attended some college. The most frequently attained levels for teachers was completed Bachelors degree and completed a graduate degree.

Table 4

Education Level Frequency Distribution of Student and Teacher Groups

Education	Group			
	Student	Teacher	Total	
High School	0	0	0	(0%)
Enrolled Career Tech	11	0	11	(12%)
Complete Career Tech	4	1	5	(5%)
Attended College	10	4	14	(15%)
Completed Associates Degree	3	3	6	(6%)
Completed Bachelors Degree	1	30	31	(34%)
Completed Graduate	0	23	23	(25%)
Total	29	61	90	

Table 5 shows the ethnicity profile the sample, indicating that 80% were Caucasian.

Table 5

Ethnicity Distribution of Students and Teachers

Ethnicity	Group			
	Student	Teacher	Total	
Caucasian	18	54	73	(80%)
African American	3	3	6	(6%)
Native American	2	4	6	(6%)
Asian	2	0	2	(2%)
Hispanic	3	0	3	(3%)
Multiracial	1	0	1	(1%)
Other	0	0	0	(0%)
Total	29	61	90	

Education Future Concerns Addressed in the Study

This study obtained the perceived importance of CTE students and teachers on the
following 13 items:

1. Keeping up with current technology

2. Providing access to education anyplace, anytime (such as through online courses)

3. Promoting technology literacy and skills

4. Making technology available to everyone

5. Being service oriented

6. Meeting individual learner needs

7. Serving a culturally diverse population

8. Providing for on-job training, continuing education, and life-long learning

9. Gaining adequate funding

10. Demonstrating positive return-on-investment for money

11. Competing with new non-traditional types of educational providers (such as

    online universities, alternative schools, home schooling, charter schools, etc.)

12. Meeting new federal, state, and local legislative mandates

13. Promoting understanding of ethical considerations related to technology, social,

    and global issues

The study participants rated the 13 items on a 5-point Likert-type scale:

    1 - no influence

    2 - minor influence

    3 - moderate influence

    4 - major influence

    5 - extreme influence

The participants then selected from the list of 13 items the six items they felt to be most important planced their choices in rank order, with 1 = highest rank or most important item. Sigma rank point scores ($\sum$RankPoints) were then calculated for each of the 13 items using the procedures presented in Chapter 3.

Using the ∑RankPoint scores and the mean rating score, the 13 items were tabled in rank order, with rank = 1 being the item considered to be most important.

In this study, as well as Brown's, "The ∑RankPoint scores provided the clearest indicator of rankings" (Brown, 2007, p. 63). The primary criterion for rank-ordering the 13 items was considered to be the ∑RankPoints because they represent the forced-choice perceived relative importance of choices by participants. A secondary indicator was the mean importance rating score.

After rank ordering tables were completed, a tier analysis was performed on each table using procedures reported by Brown (2007). In the tier analysis, clusters of items were identified by examining major break points in the ∑RankPoint and mean importance rating scores. A dotted line was used in the tables to delineate the tier breaks.

Education Future Concerns of the Entire CTE Sample

To provide an overview of the entire CTE sample (students and teachers combined) and a basis for several comparisons, the rank-ordering of the 13 research items was calculated and a tier analysis was conducted. The results are shown in Table 6.

Table 6

Mean Importance Ratings, ∑RankPoint Scores, Rank Ordering, and Tier Analysis of 13 items by CTE Sample (N=90)

Item	Mean	∑RankPoints	Final Rank
TIER 1			
Keeping up with current technology	4.40	265	1

TIER 2

Gaining adequate funding	4.57	187	2

TIER 3

Providing for on-job training, continuing education, and life-long learning	4.42	167	3
Meeting individual learner needs	4.22	165	4

TIER 4

Making technology available to everyone	4.22	151	5
Providing access to education anyplace, anytime (such as through online courses)	4.18	151	6
Promoting technology literacy and skills	4.25	150	7

TIER 5

Serving a culturally diverse population	4.06	118	8

TIER 6

Competing with new non-traditional types of educational providers (such as online universities, alternative schools, home schooling, charter schools, etc.)	4.14	95	9
Being service oriented	4.13	93	10
Promoting understanding of ethical	4.03	87	11

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considerations related to technology,
social, and global issues

TIER 7

Demonstrating positive return-on-investment for money spent	4.14	64	12

TIER 8

Meeting new federal, state, and local legislative mandates	3.91	54	13

Table 6 shows eight tiers in the order of highest to lowest ∑RankPoints. The first

tier includes keeping up with current technology with ∑RankPoints of 265. The second

tier is gaining adequate funding with ∑RankPoints of 187. The third tier includes

providing for on-job training, continuing education, and life-long learning with

∑RankPoints of 167; and meeting individual learner needs with ∑RankPoints of 165. The

fourth tier includes making technology available to everyone with ∑RankPoints of 151;

providing access to education anyplace, anytime (such as through online courses) with

∑RankPoints of 151; and promoting technology literacy and skills with ∑RankPoints of

150. The fifth tier includes serving a culturally diverse population with ∑RankPoints of

118. The sixth tier includes competing with new non-traditional types of educational

providers with ∑RankPoints of 95; being service oriented with ∑RankPoints of 93; and

promoting understanding of ethical considerations related to technology, social, and

global issues with ∑RankPoints of 87. The seventh tier includes demonstrating positive

return-on-investment for money spent with ∑RankPoints of 64. Tier eight includes

meeting new federal, state, and local legislative mandates with ∑RankPoints of 54. The data show that keeping up with technology and gaining funding are the major areas of concern for CTE teachers and students in education, while providing on-job training, continuing education, and life-long learning and meeting individual learner needs are also considered comparatively very important. Based on mean importance ratings, all 13 items were perceived as influential on the future of CTE.

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Education Future Concerns for CTE Students

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Table 7 shows the rankings and rating for CTE students with the highest concerns in the areas of keeping up with current technology; making technology available to everyone; providing for on-job training, continuing education, and life-long learning; serving a culturally diverse population; promoting technology literacy and skills; and gaining adequate funding.

Table 7

Rankings and ratings for CTE Students (N=29)

INFLUENCE	Minimum Rating	Maximum Rating	Mean Rating	∑ Rank Points	Overall Rank
Keeping up with current technology	1	5	4.24	79	1
Making technology available to everyone	1	5	4.31	67	2
Providing for on-job training, continuing education, and life-long learning	1	5	4.41	66	3
Serving a culturally diverse population	1	5	4.24	49	4
Promoting technology literacy and skills	1	5	4.17	49	5
Gaining adequate funding	1	5	4.44	48	6
Meeting individual learner needs	1	5	4.06	41	7
Being service oriented	1	5	4.03	30	8

Promoting understanding of ethical considerations related to technology, social, and global issues	1	5	3.96	30	9
Competing with new non-traditional types of educational providers (such as online universities, alternative schools, home schooling, charter schools, etc.)	1	5	4.06	29	10
Providing access to education anyplace, anytime (such as through online courses)	1	5	4.27	28	11
Demonstrating positive return-on-investment for money spent	1	5	4.06	19	12
Meeting new federal, state, and local legislative mandates	1	5	3.68	16	13

Table 8

Mean Ratings, ∑RankPoint Scores, Rank Ordering, 13 Items by CTE Teachers (N=61)

INFLUENCE	Minimum Rating	Maximum Rating	Mean Rating	∑ Rank Points	Overall Rank
Keeping up with current technology	1	5	273	186	1
Gaining adequate funding	1	5	283	139	2
Meeting individual learner needs	1	5	262	124	3
Providing access to education anyplace, anytime (such as through online courses)	1	5	253	123	4
Providing for on-job training, continuing education, and life-long learning	1	5	270	101	5
Promoting technology literacy and skills	1	5	262	101	6
Making technology available to everyone	1	5	255	79	7

Serving a culturally diverse population	1	5	243	69	8
Competing with new non-traditional types of educational providers (such as online universities, alternative schools, home schooling, charter schools, etc.)	1	5	255	66	9
Being service oriented	1	5	255	63	10
Promoting understanding of ethical considerations related to technology, social, and global issues	1	5	248	57	11
Demonstrating positive return-on-investment for money spent	1	5	255	45	12
Meeting new federal, state, and local legislative mandates	1	5	245	38	13

Rank-order and tier identification was completed for items, the results revealed that the highest ratings of concerns about the future for teachers who are teaching the students in Net Generation includes keeping up with current technology; gaining adequate funding; meeting individual learner needs; and providing access to education anyplace, anytime (such as through online courses) as shown in Table 8.

Education Future Concerns for CTE Teachers

Table 9 shows the rankings and rating for CTE teachers with the highest concerns in the areas of keeping up with current technology; gaining adequate funding; and meeting individual learner needs. Other top areas of concern are in providing access to education anyplace, anytime (such as through online courses); providing for on-job training, continuing education, and life-long learning; promoting technology literacy and skills; and making technology available to everyone.

Table 9

Rankings and rating for CTE Teachers (N=61)

INFLUENCE	Minimum Rating	Maximum Rating	Mean Rating	∑ Rank Points	Overall Rank
Keeping up with current technology	1	5	4.47	186	1
Gaining adequate funding	1	5	4.63	139	2
Meeting individual learner needs	1	5	4.29	124	3
Providing access to education anyplace, anytime (such as through online courses)	1	5	4.14	123	4
Providing for on-job training, continuing education, and life-long learning	1	5	4.42	101	5
Promoting technology literacy and skills	1	5	4.29	101	6
Making technology available to everyone	1	5	4.18	79	7
Serving a culturally diverse population	1	5	3.98	69	8
Competing with new non-traditional types of educational providers (such as online universities, alternative schools, home schooling, charter schools, etc.)	1	5	4.18	66	9
Being service oriented	1	5	4.18	63	10
Promoting understanding of ethical considerations related to technology, social, and global issues	1	5	4.06	57	11
Demonstrating positive return-on-investment for money spent	1	5	4.18	45	12
Meeting new federal, state, and local legislative mandates	1	5	4.01	38	13

Education Future Concerns for CTE Students and Teachers

The rankings and similarities in the areas of technology and funding for CTE teachers and students. Teachers and students had similarities in the areas of keeping up with current technology and gaining adequate funding. Differences for teachers were in meeting individual learner needs and providing access to education anyplace, anytime (such as through online courses); students differences were in making technology available to everyone; and providing for on-job training, continuing education, and life-long learning.

Education Future Concerns for the CTE Sample and the

General Population

To address how this study's CTE sample representing Oklahoma's CTE population compared with the general population, the educational futures concerns reported by the CTE students and teachers combined (N=90) were compared with the large study reported by Ausburn et al. (in press). The Ausburn et al. study used the same 13 items used in the present study to identify the educational futures concerns of a large sample (N=447) representing the general population in Oklahoma. That sample contained representation of younger and older adults from both inside all sectors of education and from the broader population outside of education.

The ranking ordering of the 13 futures-oriented concerns reported by Ausburn et al. (in press) are shown in Table 10. Rank order was determined by ∑RankPoint scores. In the Ausburn et al. study, it was determined that this rank-ordering was very similar across all demographic groups.

Table 10

Mean Ratings, ∑RankPoint Scores and Rank Ordering of 13 Items by all Education

Sectors and General Population (N=447)

INFLUENCE	Minimum Rating	Maximum Rating	Mean Rating	*SD*	∑ Rank Points	Overall Rank
Keeping up with current technology	1	5	4.40	.706	1412	1
Meeting individual learner needs	1	5	4.12	.926	1099	2
Gaining adequate funding	1	5	4.36	.815	1074	3
Promoting technology literacy & skills	1	5	4.22	.782	993	4
Making technology available to everyone	1	5	4.15	.882	875	5
Providing access to education anytime, anywhere	1	5	3.83	.922	750	6
Providing for on-job-training, continuing education, & life-long learning	1	5	4.09	.910	683	7
Serving a culturally diverse population	1	5	4.03	.962	664	8
Promoting understanding of ethical considerations related to technology, social, & global issues	1	5	3.79	.983	446	9

Being service oriented	1	5	3.64	.984	377	10
Meeting new federal, state, & local mandates	1	5	3.72	1.00	360	11
Demonstrating positive return-in-investment for money spent	1	5	3.68	.985	333	12
Competing with new non-traditional types of education providers (online universities, alternative schools, home schooling, charter schools, etc.)	1	5	3.48	.976	232	13

Ausburn, Ellis and Washburn (in press)

To compare the rankings of the education futures concerns of the CTE sample used in this study with those of the general population, the data reported above in Table 10 by Ausburn et al. (in press) were compared with the rankings for the CTE sample shown on pages 48-50.

Data from this study shows that CTE rankings compare to the general population rankings in the areas of: technology, meeting individual learner needs and gaining adequate funding. The order of ranking for the general population, as well as CTE teachers and students, include having the same highest ranking of technology. The general population differs with CTE teachers and students including the second highest ranking being meeting individual learner needs; and third highest ranking of gaining adequate funding. CTE teachers and students second highest ranking includes gaining

adequate funding and third highest ranking includes providing for on-job training, continuing education, and life-long learning.

Match between Concerns for CTE Teachers and Students

The results revealed that the highest ratings of concerns about the future for both teachers and the students in Net Generation was keeping up with current technology. CTE students' second highest ranking was making technology available for everyone; and third highest ranking was providing for on-job training, continuing education, and life-long learning. CTE teachers' second highest ranking was gaining adequate funding; and third highest ranking was meeting individual learner needs as shown in Table 6.

The results revealed that the highest ratings of concerns about the future for general population (various people of diverse ages, ethnicities, and educational attainment) was keeping up with current technology, which is an exact match between concerns for both CTE teachers and students. Other prioritized areas of concern about the future for general population in comparison to CTE teachers and students include promoting technology literacy and skills; and gaining adequate funding as shown in Table 10.

Summary of Findings

The study revealed highest concern for CTE teachers and the Net Generation students in Oklahoma were keeping up with technology; providing for on-job training, continuing education, and life-long learning; promoting technology literacy and skills; and gaining adequate funding. Demographically, Oklahoma is ranked forty ninth among the fifty states in education funding, yet, is twenty seventh in the number of students

enrolled in public schools (National Center for Education Statistics, 2010).

CHAPTER V

CONCLUSIONS

In this final chapter of this dissertation, the researcher will restate the research questions, present the conclusions followed by an interpretation of the findings. The chapter will then summarize information and conclude with recommendations. This study was designed to identify concerns about the future by teachers and Net Generation students and make comparisons. SPSS was the computer program used for statistical analysis. The population was comprised of Oklahoma CTE teachers and students.

In this investigation, the aim was to determine:

1. What are the concerns about the future for CTE Net Generation students?

2. What are the concerns about the future of the CTE teachers who are teaching the students in Net Generation?

3. In what ways do the concerns about the future of the CTE students and teachers match?

4. In what ways do the concerns about the future of CTE match those of the general population?

Summary of Findings

In this comprehensive study, nearly one hundred CTE teachers and students were examined from six CTE centers in Oklahoma. The participants of the study were examined according to their gender, age, educational attainment, ethnic or racial group and rated thirteen questions in choosing six most critical influences of the future of public education in America in the 21st century. The literature review indicated that teachers and students want different things and have different needs and concerns. To the contrary, the results of this study indicated teachers and students have the same needs and concerns. Testing the technical skills of teachers and students were not a part of this study. However, this may be a good area for future study in revealing important information regarding technical skills and abilities of CTE students. One of the most significant findings of the study was the agreement by CTE teachers and students that keeping up with technology and gaining adequate funding was most important. In Oklahoma, these areas appear critical, based upon both the National Center for Education Statistics Report (2010) and the independent confirmation by CTE students and teacher concerns. This study confirms that there is awareness and agreement of the fact that education funding is on the forefront of concern. Oklahoma is ranked forty ninth among the fifty states in education funding, yet, is twenty seventh in the number of students enrolled in public schools (National Center for Education Statistics, 2010). Previous findings also revealed that the general population have the same concerns as Oklahoma CTE teachers and students as keeping up with technology received the highest ranking (Ausburn, Ellis and Washburn, in press).

The third tier items of providing for on-job training, continuing education, and life-long learning, and meeting individual learner needs received a mean score in that order. The results of this study indicate that the Net Generation wants to be perceived as successful in their own right and partner with teachers in achieving goals. These findings indicate that having skills and abilities to perform well on the job is an important factor for both teachers and students. In order to perform well, they are aware of the fact that they must be knowledgeable and advanced in the usage of technology. In order to achieve this goal, they must work together. There is a differentiation between partnership and empowerment as partners command more 'say' and want to contribute to their own success on the job and in every area of their lives (Carlson, 2005). To further reiterate this and in support of the findings of this study, additional research from Tapscott (1998) state the Net Generation is: independent, emotionally and intellectually open (sharing ideas), have free expression and strong views, are preoccupied with maturity, immediacy, and are trustworthy (p. 211) these traits continue on-job, in academia, as well as in professional and social environments.

The fourth tier items of making technology available to everyone; providing access to education, anyplace, anytime (such as through online courses); and promoting technology literacy. Teachers and students perceived that working together to achieve effective outcomes; professionalism along with good customer service; trust for the educational system; problem solving and critical thinking; and educational opportunities as important. In order to do this, developmental relationships (McCauley & Douglas, 1998) must occur between the teacher and student as the teacher plays many roles as: feedback provider (of information for performance improvement); sounding board (for

ideas and strategies); point of comparison (for evaluating one's own skills against an expert's); feedback interpreter (of feedback from others); dialogue partner (to discuss different perspectives); assignment broker (for access to challenging assignments); accountant (to hold student accountable); role model (for strengths and challenges); counselor (for difficulties and being a support system); cheerleader (to boost self-esteem and awareness); reinforcer (to give rewards for what is done right or incorrect); and cohort (to provide a sense of not being alone in the process). All of which will effective teacher and student outcomes as partially substantiated as a valid concern in this research finding.

Net Generation has a perception of wanting to work in different ways with varied forms of communication (Oblinger & Hagner, 2005). Traditional learning methods are unlikely to keep Net Generation students attention for long. There is a perception that the Net Generation need self-directed learning opportunities, interactive environments, multiple forms of feedback, and assignment choices that use different resources to create personally meaningful learning experiences (Glenn, 2000). The Net Generation want more hands-on, inquiry-based approaches to learning (Hay, 2000). This is a shift in learning styles that encompasses seeking and retrieving information from the Internet which is in contrast to previous generations of students who acquired information from an authoritarian style of teaching (Tapscott, 1998).

In Tier 5, the item of serving a culturally diverse population was did not receive a high ranking by teachers, students and the general population. For students, cultural diversity was ranked fourth while teachers and the general population ranked this area eighth. The population surveyed could play a part in the findings with eighty percent of

participants being Caucasian as shown on Table 5. Question for thought for the reader: Could the internet be perceived as the equalizer in connecting people with so much access to diversity where different representations of diversity do not seem necessary? An answer to this question may be yes. The reasoning is because the internet connects and presents information from various and culturally diverse sources which can assist in causing someone to believe or perceive that they are culturally connected when in reality they have accessed information and have not connected at all in terms of relationship and rapport. Another important component to consider is the accessibility to the internet in order for cultural connections of information availability. Socio-economic access to technology is another crucial factor. For example, if socio-economic status does not afford someone access to the internet, they are unlikely to retrieve necessary information regarding cultural diversity and are left out of the pool of information available that others find readily available. To this point, regarding diversity, it includes ethnicity, thought-patterns, behaviors and relationships. This is a viable concern as cultural diversity in education has improved, nonetheless, can still increase in reflecting the many cultures present in this "melting pot" that we call the United States of America.

In Tier 6, items of competing with new non-traditional types of educational providers (such as online universities, alternative schools, home schooling, charter schools, etc.); being service oriented and promoting understanding of ethical considerations related to technology, social, and global issues having mean importance scores in that order. Research from this study does not show that competing with new non-traditional types of education is an area of concern. Although this appears to be an

area of interest in today's political climate, the same concerns were not indicated in this area by teachers, students and the general population.

In Tier 7, item of demonstrating positive return-on-investment for money spent revealing surprising findings with teachers, students and the general population all ranking this area as twelve which is the second to last ranking of topics in this study. This questions if educational investments are still viewed as important? Research findings of this study indicate that keeping up with technology, gaining adequate funding, on-job training, technology literacy and skills having much higher rankings than this area being a main focus of teachers, students and the general population. With such a low ranking in the area of educational investments, it may be important but is definitely not a high priority at this time. This is possibly, due to the economic status of society today where individuals and groups are striving and seeking various means to survive and pay debts versus focusing on the future, the present is the more important. To this point, the level of investments of commitment, determination, time, performance and funding in achieving educational goals can be mindboggling. Teachers and students want to ensure that they have made a good investment in their education and can reap dividends. The results of educational investments are realized in graduating, having gainful employment, being able to pay off financial debts and live a comfortable life with economic and social progress. Education is a fundamental factor in development with a valuable investment in human capital. The stimulation towards a human investment revolution (Bowman, 1966; Schultz, 1961) is in effect. Education enriches understanding of self, others and environments. With this knowledge, improvements can be made in the quality of lives.

In Tier 8, item of meeting new federal, state, and local legislative mandates which received the lowest ranking by teachers and students while the general population ranked this area higher as eleventh. Meeting guidelines, rules, regulations and mandates of the government may be ranked so low as a byproduct of feeling that government is not meeting citizen needs, therefore, they are not as apt to prioritize being in compliance to meeting their mandates. Meeting governmental requirements were not in the top rankings and may be a result of not being structured to provide fiscal relief for schools.

In agreement with literature from research in Chapter 2, although being technically savvy is helpful and many times, necessary, in today's society, it is not enough to communicate effectively and efficiently within multiple environments (Ras & Rech, 2009). Educators are tasked with the challenge of teaching students through and with traditional and non-traditional teaching methods including lecture, technology and practical, hands-on applications that compliment core curriculum. Based on this study, these findings contribute additional evidence that educators must acknowledge that multitasking is a way of life for the Net Generation (Ras & Rech, 2009). Also, educators are challenged to teach students the importance of slowing down, focusing, using critical thinking and applying material so they can communicate more clearly. The Net Generation is challenged and encouraged to use critical thinking skills in order to thrive and survive within organizations (Lorenzo & Dziuban, 2006) and everyday life.

Concerns about the Future for Net Generation CTE Students

Net Generation students have critical concerns about the future in the areas of keeping up with current technology; making technology available to everyone; and providing for on-job training, continuing education, and life-long learning. What does

this mean for CTE students? The answer rests within our educational system as teachers are tasked with the responsibility and challenge of making certain that students understand core curriculum, can interpret what has been communicated, and can take practical application steps in achieving their academic goals. For teachers, this expands throughout generations as students can extend their knowledge and learning to others. CTE students will need the knowledge and skills to use technology to access learning to stay current in their technical professions.

Concerns about the Future of CTE Teachers who are
Teaching Net Generation Students

The major concerns about the future of the CTE teachers who are teaching the Net Generation students are keeping up with current technology; gaining adequate funding; and meeting individual learner needs and concerns. The need for connectivity and communication are crucial in educating Net Generation students. Net Generation students want to be a part of the learning process and contribute. This is different from prior teaching methods that focused on lecturing and students memorizing material. Technology usage can advance learning in understanding diverse needs, expectations and values within education (Oblinger, 2005, p. 69). The message to teachers in working strategically with the Net Generation includes utilizing various teaching and communication styles in meeting the various learning styles of students. Oblinger and Oblinger (2005) note that Net Generation learners want to be engaged and be a part of the learning process by contributing their insight, wit, experience and information. This classroom teaching enhancement can reach a larger number of students in communicating effectively with them in using methods such as project based learning.

Concerns about the Future of Students and Teachers Match

The concerns about the future of CTE students and teachers that match are in the areas of keeping up with current technology and gaining adequate funding. These findings enhance our understanding of student orientation towards learning and teacher classroom practices designed to accommodate divergent learning styles. In meeting educational needs of tech-savvy students, educators are increasingly embracing multimedia within the classroom and incorporating discussion-based learning with a decrease in utilizing learning based on a traditional lecture. Thus, allowing for student expression, questions, clarification and understanding. Classroom practices have advanced the use of teamwork and reliance on experiential learning for students. Teachers are encouraged to use a combination of lecture format and and active interaction with students. Prior research has shown that there is a difference in teacher and student concerns, however, this study does not show the same findings. Today, collaboration is vital for teachers and students in order to embellish upon the Net Generations desire to collaborate in learning and work in teams.

Conclusions

The conclusions are summarized by factors listed as the most influential in determining the future of public education in America in the 21st century in surveying CTE teachers and students as well as the general population.

Keeping up with current technology

There was consistent agreement of CTE teachers and students, as well as the general population, in rating keeping up with current technology as most influential. This high ranking is supported by research that argues that technology is not only an artifact

but also a system of social practices that impacts multiple areas within everyday life (Franklin, 1990). Furthermore, Feenberg (1991) stated "…Technology is not simply a means but has become an environment and a way of life: this is its substantive impact" (p. 8).

Providing for on-job training, continuing education, and life-long learning

This high rating area was ranked number five by CTE teachers and ranked number three by CTE students. Tapscott (1998) notes that the Net Generation desire to be a part of the learning process versus just watching it. This includes hands-on learning through practical application which transcends into various areas including education and on-job training as on-job training encompasses learning while completing tasks and responsibilities. For the general population, this ranking was number seven which is still an area of importance. With the current state of the economy, it is understandable that on-job training, continuing education, and life-long learning are essential as gainful employment is an area of concern and deemed vital for everyday living and in sustaining livelihood.

Promoting technology literacy and skills

Consistency of agreement among CTE teachers and students, as well as the general population, in rating promoting technology literacy and skills as influential was shown as a result of this study. For CTE teachers, this ranking was sixth among top influences while CTE student ranking was fifth and the general population ranking was fourth. Uniqueness is seen in the general population ranking being higher than CTE teachers and students in promoting technology literacy and skills. As technology literacy and skills are included in academic, personal, professional and social areas, it is understandable that

promoting its literacy is important. Technology receiving such a high ranking may be directly related to the current economic conditions where the general population understands that without technology skills they will be less marketable in the workplace and thus, less secure in employment.

Gaining adequate funding

There was consistent agreement of CTE teachers and students, as well as the general population, in rating gaining adequate funding as influential. CTE teachers and the general population ranking was higher than CTE students in rankings of second and third versus student ranking of sixth which questions if students are more focused on other areas of technological advancement and learning in gaining knowledge and insight for gainful employment versus educational opportunities. Additionally, this question arises: How do students see their education in terms of future access and opportunities? With education funding being an area of concern and lower ranking for CTE students than CTE teachers and the general population, it appears that students see their education in terms of future access and opportunities as limited. Projections show that there is a decrease in education funding slated for the upcoming school years so this concern appears to be warranted by students.

Surprisingly, factors that were not rated as high priority includes: promoting understanding of ethical considerations related to technology, social, and global issues; competing with new non-traditional types of educational providers (such as online universities, alternative schools, home schooling, charter schools, etc.); and meeting new federal, state, and local legislative mandates. With a decreased focus in these areas, the

implication includes higher level concerns in focusing more on self development, preservation, personal and professional achievement for immediate success.

Promoting understanding of ethical considerations related too technology, social, and global issues

The low ranking of ethical considerations by teachers, students and the general population was mindboggling. Teachers ranked this area eleventh, student ranking was ninth and the general population ninth. All of these populations are more alike in their perceptions that originally thought of prior to this study. Could this mean that the ease of internet usage has assisted in creating a slothful checks and balances system when it comes to ensuring ethics are in compliance? An understandable answer could be yes as the internet has afforded limitless availability of information and making certain that accuracy of content and rechecking work can be a diminished priority.

To ensure that ethical considerations are a priority, it will take a willful effort of practical application in making certain sources are valid and reliable. Also, it is essential to check and re-check work to ensure that all references to sources are cited properly and accurately while work submitted is the intended draft for review. Findings with research from Ausburn, Ellis and Washburn (in press) revealed similar results to this study. What does this say about technical ethics? For teachers and students, validation and reliability of sources are to be a high priority. With technology being on the forefront of teachers, students and the general population ranking, it is likely to continue to advance and afford researchers with more knowledge, information, sources and content. In doing so, there should also be mechanisms in place to ensure that the various sources are accurate and utilized appropriately.

Recommendations

This study identified key areas of concern of CTE teachers and their Net Generation students in career and technology centers as well as the general population. Future research should be conducted to provide additional clarity and understanding regarding the internet being an equalizer of information access, understanding of ethical consideration declining, cultural diversity not being a main area of concern in today's society and technical skills assessment being necessary and essential for teachers, students and the general population. The additional research can reveal the attitudes and reasonings for low rankings. The following recommendations are based on this study and for future research regarding topics of internet being an equalizer of information access, understanding of ethical consideration declining, cultural diversity not being a main area of concern in today's society and technical skills assessment. In furthering research, technology usage will be a main proponent. Additional research in these areas would utilize technology as the main proponent of retrieving information.

Proactive Use of Technology

As research shows that Net Generation students are tech-savvy with technical skills more advanced than previous generations, teachers are challenged to meet the technology needs of students. Digital media, streaming videos and audio, as well as video podcasts should be incorporated into instructional practice in such a way that multiple learning styles of students in the 21st century are met. Staying current and effective in improving student learning is vital for teachers and institutions. Developing new technology strategies are also necessary within institutions as research shows that Net Generation students are continually developing new skills and preferences for technology. These

non-traditional developments should be geared towards meeting student needs and concerns. Student expectations in learning include having technology capability and reliability, as well as connectivity, that is cutting-edge and as effective as their personal systems. This study shows that CTE teachers and students are primarily concerned with keeping up with current technology. For teachers, this means being able to provide teaching through multiple technical avenues in order for students to learn material and apply it. With new and emerging technologies, and the changing characteristics of 21st century students, researchers are calling for a new generation of technology research that can guide educators in making informed decisions regarding technology and the future (Mills & Roblyer, 2003; Roblyer & Edwards, 2000; Voithofer, 2005). For students, technology usage is a norm; its availability to them affords them the opportunity to connect anytime and anyplace for various purposes; and the Net Generation use technology in their learning experience. It is recommended that educational institutions continue to be proactive regarding technology usage in the classroom in multiple areas of core curriculum for student learning.

Faculty Development in Technology Usage

This study indicated that meeting individual learner needs is an area of importance for teachers. Results from this study show technology usage and various teaching practices are preferred by Net Generation students. Also, as research previously notes, effective classroom leaders need to continually seek knowledge, insight, and information regarding their designated fields of study, including advancements in technology, in order to attract, recognize, motivate, and retain followers who have the right mix of skills and attitudes (Maccoby, 2000, as cited by Tourish & Pinnington, 2002)

and; Focusing on how technology is used for the delivery of instruction was noted in this study with data collection including importance to: (1) specification, procurement, and integration of new technologies into the curriculum, (2) the need for technology training for students and faculty, (3) the examination of common environments and common approaches (digital library services, computer labs, virtual learning communities), (4) the institutional approach to information technology services and technical support, and (5) technology monitoring and benchmarking (Kvavik & Caruso, 2005; Oblinger & Oblinger, 2005). Also, "Before curricula can be created to challenge the Net Generation, though, faculty must know how Net Geners learn and interact with each other, with technology, and life in general" (Oblinger & Oblinger, 2005, p. 2). In keeping faculty abreast of current technological advancements for classroom facilitation in educating students, it is recommended that training and faculty development be implemented that includes technology usage for enhanced student learning in meeting learner needs.

Activism regarding Education Funding

Funding is an important part of education as it is necessary in order for it to be operational and provide educational opportunities for students. It is recommended that educators play an active role in the decision-making process and procedures regarding funding for schools. As this study shows, Oklahoma is the second to last state within the fifty United States to receive adequate funding. In this study, teachers and students noted this as an area of primary concern in having a critical impact on education. Based on the findings of this study which can be used as a evidence of needs and concerns, educational institutions must begin to strategically communicate with state and federal government officials regarding policy making decisions in support of education funding for CTE

student technology access. Activism for educational funding is a mandate and important responsibility of all generations to ensure that there is a continuation of 1) educational opportunities for students; 2) school programs are available in multiple areas; 3) teachers being employed in order to educate students; and 4) educating students in preparing them for the workforce.

These recommendations in furthering this study could potentially contribute to advancements in education for teachers and students as this study revealed concerns, predictions and needs, it is the beginning road map for future research. This is important as there is currently no comprehensive and systematic view of CTE teachers and students in existing data. Further research will assist in gaining knowledge and insight regarding how technology affects teacher facilitation and student learning. To reiterate, if we do want more from our schools and if we want to create a world class education that prepares students to be fine citizens and economic leaders, schools need to engage students in a richer curriculum, one preparatory for jobs of the 21st century, and schools need to tailor teaching and learning strategies to the needs of the Net Generation in order to prepare them to enter the global economy of the modern age (Junco & Mastrodicasa, 2007, p. 45) which will require additional research to assist in furthering understanding and utilizing effective tools and strategies for teaching and student learning.

In conclusion, this researcher believes technology use is not only necessary but also useful in educating students through various methods in facilitating core curriculum. However, technology is not the only method or means of educating students but should be used as a tool that should be reviewed, analyzed, measured and enhanced, as necessary, in making certain that its usage is applicable and accurate. With the widerange

of usage available with technology, it can be an enhancement to students with its multifaceted capabilities and scope of reach that expands globally and within the realm of higher education.

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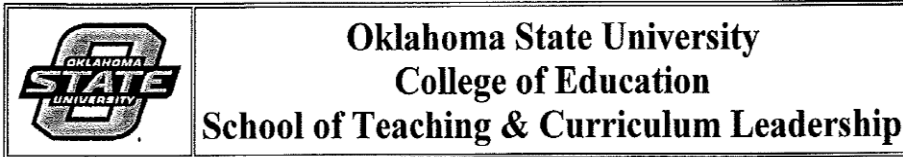
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APPENDICES

APPENDIX A

PARTICIPATION LETTER/CONSENT FORM

COMPARISON OF CONCERNS ABOUT THE FUTURE
FOR
TEACHERS AND THE NET GENERATION

Hello, our names are Rockel Etienne (OSU Graduate Student) and Belinda McCharen (Associate Professor) at Oklahoma State University. We are conducting a research project, and we would like to invite you to participate in a research study. You were selected, as a possible participant because your education institutions agreed to take part in this research and your participation is completely voluntary. In order to participate in this research, you need to be a teacher or student in one of the selected educational institutions (Central Tech, Tri County, Pontotoc County, Gordon Cooper, Francis Tuttle and Meridian Tech Center) and you are 18 years of age and older. Please read this form carefully and ask any questions you may have before agreeing to be in the study.

Your decision of whether or not participate will not affect your current or future relations with Oklahoma State University or your education institutions. Risks associated with this study are no greater than those experienced in normal daily activities. The benefit of participation of your education institution and participants is to receive a summary of the results should you and/or your education institution desire a copy.

All data will be kept in a locked password CD controlled by the researchers. Employers will NOT have access to any individual responses. In the completed report, we will not include any information that will make it possible to identify any of your individual subjects.

The participation will involve filling out a questionnaire. The frequency of the questionnaire is one time and duration of participation timeframe will take approximately thirty minutes.

You may contact the researchers with any with any questions:

Belinda McCharen, Email: Belinda.mccharen@okstate.edu, Phone: (405) 744-9502 at any time if you have any questions and need additional information. Rockel Etienne, Email: rockeletienne@yahoo.com.

Sincerely,

Researchers: Belinda McCharen, Ed.D. & Rockel Etienne

Comparison of Concerns about the Future for Teachers and the Net Generation
SURVEY

Project Title: Comparison of Concerns about the Future for Teachers and the Net Generation Survey

Investigators: Belinda McCharen, Ed.D.
Rockel Etienne

Purpose:
The purpose of this study is to describe and compare the concerns about the future of teachers and Net Generation students.

Procedures:

Survey questionnaire participants will be asked to indicate their opinion on each question based on a 1-5 point scale. The surveys will be collected through the internet and will not be identifiable by the individual responding. The survey is expected to take 20 minutes or less.

Risks of Participation:

There are no known risks associated with this project which are greater than those ordinarily encountered in daily life.

Benefits:

The benefit of this research is the identification of favorable conditions in school to build and use new knowledge and innovative practices.

Confidentiality:

The records of this study will be kept private. Any written results will discuss group findings and will not include information that will identify you. Research records will be stored securely and only researchers and individuals responsible for research oversight will have access to the records. It is possible that the consent process and data collection will be observed by research oversight staff responsible for safeguarding the rights and wellbeing of people who participate in research. The duration of the storage will be for one year and location of data storage will be at Oklahoma State University, Room: 255; Building: Willard.

Compensation:

Your willingness to participate in the survey questionnaire is voluntary so there is no compensation to the participant.

Contacts:

If you have questions about the survey and your responsibilities as a volunteer please contact:
Dr. Belinda McCharen, Francis Tuttle Endowed Chair for Occupational Education, 255 Willard Hall, Stillwater, OK 74078, 405-744-9502 or Belinda.mccharen@okstate.edu
Rockel Etienne, OSU Graduate Student
If you have questions about your rights as a research volunteer, you may contact Dr. Shelia Kennison, IRB Chair, 219 Cordell North, Stillwater, OK 74078, 405-744-1676 or irb@okstate.edu.

Participant Rights:

Participation in this survey is voluntary and participants may discontinue the research activity at any time without reprisal or penalty. There are no risks to an individual participant for deciding to discontinue participation.

Agree to Participate	Decline to Participate

APPENDIX B

QUESTIONNAIRE

**Oklahoma State University
College of Education
School of Teaching & Curriculum Leadership**

COMPARISON OF CONCERNS ABOUT THE FUTURE
FOR
TEACHERS AND THE NET GENERATION

You are currently a:

Student	Teacher

Your gender is (Check one)

Male	Female	

Your current age is

Which of these indicates your educational attainment?

Did not complete High School	Attended college but did not complete a degree
Completed High School	Completed 2-year Associates Degree
Currently enrolled in a CareerTech program	Completed 4-year Bachelors Degree
Completed CareerTech (VoTech) program	Completed Graduate Degree (Masters or higher)

What is your ethnic or racial group?

Caucasian/White	African American
Native American	Asian
Hispanic or Latino	Multiracial
Other (specify):	

Influences on the future of public education in America

Rate each factor listed below according to how important or influential you believe it will be in determining the future of public education (primary through higher education) in America in the 21st century.

		No Influence	Minor Influence	Moderate Influence	Major Influence	Extreme Influence
A)	Keeping up with current technology					
B)	Providing access to education anyplace, anytime (such as through online courses)					
C)	Promoting technology literacy and skills					
D)	Making technology available to everyone					
E)	Being service oriented					
F)	Meeting individual learner needs					
G)	Serving a culturally diverse population					
H)	Providing for on-job training, continuing education, and life-long learning					
I)	Gaining adequate funding					
J)	Demonstrating positive return-on-investment for money spent					
K)	Competing with new non-traditional types of educational providers (such as online universities, alternative schools, home schooling, charter schools, etc.)					
L)	Meeting new federal, state, and local legislative mandates					
M)	Promoting understanding of ethical considerations related to technology, social, and global issues					

Choosing your top influences

From the list of possible influences on education shown above,
choose the 6 you believe are most critical

for public education in America to have a successful future.

Most Critical (of your chosen 6)	Please type the blue letter Identifier into the text boxes below				Least Critical (of your chosen 6)

The one thing that concerns me most about the future of people and society is:
(Type in your answer)

The one thing that concerns me most about the future of education is:
(Type in your answer)

If I could recommend one thing to education that would help make it successful in the future, it would be:
(Type in your answer)

Submit   Reset

Rockel Etienne
rockel.etienne@okstate.edu
© 13 May 2009

APPENDIX C

IRB APPROVAL LETTER

Oklahoma State University Institutional Review Board

Date: Tuesday, May 12, 2009

IRB Application No   ED0979

Proposal Title: Comparison of Concerns about the Future for Teachers and the Net Generation

Reviewed and   Exempt
Processed as:

Status Recommended by Reviewer(s): Approved   Protocol Expires: 5/11/2010

Principal
Investigator(s):

Rockel Etienne   Belinda McCharen
122 North 2nd St. #A409   255 Willard
Phoenix, AZ 85004   Stillwater, OK 74078

The IRB application referenced above has been approved. It is the judgment of the reviewers that the rights and welfare of individuals who may be asked to participate in this study will be respected, and that the research will be conducted in a manner consistent with the IRB requirements as outlined in section 45 CFR 46.

X The final versions of any printed recruitment, consent and assent documents bearing the IRB approval stamp are attached to this letter. These are the versions that must be used during the study.

As Principal Investigator, it is your responsibility to do the following:

1. Conduct this study exactly as it has been approved. Any modifications to the research protocol must be submitted with the appropriate signatures for IRB approval.
2. Submit a request for continuation if the study extends beyond the approval period of one calendar year. This continuation must receive IRB review and approval before the research can continue.
3. Report any adverse events to the IRB Chair promptly. Adverse events are those which are unanticipated and impact the subjects during the course of this research; and
4. Notify the IRB office in writing when your research project is complete.

Please note that approved protocols are subject to monitoring by the IRB and that the IRB office has the authority to inspect research records associated with this protocol at any time. If you have questions about the IRB procedures or need any assistance from the Board, please contact Beth McTernan in 219 Cordell North (phone: 405-744-5700, beth.mcternan@okstate.edu).

Sincerely,

Shelia Kennison, Chair
Institutional Review Board

Project Title: Comparison of Concerns about the Future for Teachers and the Net Generation Survey

Investigators: Belinda McCharen, Ed.D.
Rockel Etienne

Purpose:

The purpose of this study is to describe and compare the concerns about the future of teachers and Net Generation students. The Net Generation is more likely to orient faster into the work place with their advancement in technical skills and abilities. This study will compare research results received in measuring concerns about the future for the Net Generation student in technology centers in learning what the needs of the Net Generation are, as well as generational differences of teachers and students, in presenting information in order to meet the needs of the learner. While there are some career and technical education (CTE) subjects in the 2006-2008 data sets, there is by no means a comprehensive and systematic look at CTE teachers and students in the existing data set.

Procedures:

Survey questionnaire participants will be asked to indicate their opinion on each question based on a 1-5 point scale. The surveys will be collected through the internet and will not be identifiable by the individual responding. The survey is expected to take 20 minutes or less.

Risks of Participation:

There are no known risks associated with this project which are greater than those ordinarily encountered in daily life.

Benefits:

The benefit of this research is the identification of favorable conditions in school to build and use new knowledge and innovative practices.

Confidentiality:

The records of this study will be kept private. Any written results will discuss group findings and will not include information that will identify you. Research records will be stored securely and only researchers and individuals responsible for research oversight will have access to the records. It is possible that the consent process and data collection will be observed by research oversight staff responsible for safeguarding the rights and wellbeing of people who participate in

research. The duration of the storage will be for one year and location of data storage will be at Oklahoma State University, Room: 255; Building: Willard.

Compensation:

Your willingness to participate in the survey questionnaire is voluntary so there is no compensation to the participant.

Contacts:

If you have questions about the survey and your responsibilities as a volunteer please contact:

Dr. Belinda McCharen, Francis Tuttle Endowed Chair for Occupational Education, 255 Willard Hall, Stillwater, OK 74078, 405-744-9502 or Belinda.mccharen@okstate.edu

Rockel Etienne, OSU Graduate Student

If you have questions about your rights as a research volunteer, you may contact Dr. Shelia Kennison, IRB Chair, 219 Cordell North, Stillwater, OK 74078, 405-744-1676 or irb@okstate.edu.

Participant Rights:

Participation in this survey is voluntary and participants may discontinue the research activity at any time without reprisal or penalty. There are no risks to an individual participant for deciding to discontinue participation.

| Agree to Participate | Agree to Participate |

VITA

Rockel Etienne

Candidate for the Degree of

Doctor of Education

Thesis: CONCERNS ABOUT THE FUTURE FOR OKLAHOMA CAREER AND
          TECHNOLOGY EDUCATION TEACHERS AND THEIR NET
          GENERATION

Major Field: Occupational and Adult Education

Biographical:

    Education:

    Completed the requirements for the Doctor of Education in Occupational and
    Adult Education at Oklahoma State University, Stillwater, Oklahoma in May
    2011. Completed the requirements for the Master of Human Relations at
    University of Oklahoma, Norman, Oklahoma in 1998. Completed the
    requirements for the Bachelor of Science in Business at Oklahoma City
    University in Oklahoma City, Oklahoma in 1997.

    Experience:

    Currently employed as a faculty member for University of Phoenix in Phoenix,
    Arizona, courses in the areas of: human resources, philosophy, critical thinking,
    leadership, cultural diversity and management; employed as assistant dean of
    faculty at western international university in Phoenix, Arizona; employed as
    assistant director of academic affairs in Phoenix, Arizona; employed as campus
    college chair in New Orleans, Louisiana; employed as faculty member for
    University of Phoenix in New Orleans, Baton Rouge and Lafayette, Louisiana;
    employed as faculty member for University of Phoenix in Tulsa, Oklahoma;
    employed as human rights representative for Oklahoma Human Rights
    Commission in Tulsa, Oklahoma.

Name: Rockel Etienne   Date of Degree: May 2011

Institution: Oklahoma State University   Location: Stillwater, Oklahoma

Title of Study: CONCERNS ABOUT THE FUTURE FOR OKLAHOMA CAREER
                AND TECHNOLOGY EDUCATION TEACHERS AND THEIR NET
                GENERATION STUDENTS

Pages in Study: 74   Candidate for the Degree of Doctor of Education

Major Field: Occupational and Adult Education

Scope and Method of Study:

A quantitative comparative descriptive survey research design was implemented for the study using a purposive sample of students and teachers in technology center schools in Oklahoma.

Findings and Conclusions:

The literature review indicated that teachers and students want different things and have different needs and concerns. The results of this study indicated that teachers and students have the same needs and concerns. One of the most significant findings of the study was the agreement by CTE teachers and students that keeping up with technology and gaining adequate funding was most important.

The conclusions are summarized by factors listed as the most influential in determining the future of public education in America in the 21st century. The areas of: Keeping up with current technology; Providing for on-job training, continuing education, and life-long learning; Promoting technology literacy and skills; Gaining adequate funding; promoting understanding of ethical considerations related to technology, social, and global issues were identified and ranked in order of perceived importance.

ADVISER'S APPROVAL: Dr. Belinda McCharen