

A PHENOMENOLOGICAL STUDY OF ONLINE LEARNING FOR DEAF STUDENTS IN
POSTSECONDARY EDUCATION: A DEAF PERSPECTIVE

By

Patricia Michelle Wooten

Liberty University

A Dissertation Presented in Partial Fulfillment

Of the Requirements for the Degree

Doctor of Education

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ABSTRACT

This qualitative phenomenological study investigated the effects of online learning for deaf college students as opposed to the mainstream classroom setting. This study specifically analyzed the writing and reading skills of deaf students in general and the development of English literacy of prelingually deaf students and those from non-English speaking countries. The use of online teaching tools had significantly improved postsecondary education for deaf students in the United States, particularly in these three categories. A phenomenological study was conducted to express the perspectives of deaf college students regarding the topic. Participants of this research were sixteen deaf online college students who use American Sign Language (ASL) as their native tongue and currently attend an online class in one of the three Conviron Colleges in Northeast Florida. Results of this qualitative phenomenological study were obtained directly from the deaf student participants. Their direct statements highlighted several areas in which they felt their interactions with computer and internet technology could be improved. Namely, there was a consensus among the deaf student participants. They related there was a “technology gap” to overcome before they could optimally pursue learning online. Also, participants noted that teachers in service to the deaf students attempting to access online learning software were themselves lacking in the know-how necessary to achieve optimal learning. This study can provide prospective students and educators within the higher education sector a better understanding of the experiences of deaf students in a distance-learning program. Moreover, the findings of the current study provide an opportunity for potential distant learning students to understand the implications of online learning before their actual participation.

Keywords: Deafness, Online Learning, Phenomenology, Higher Education

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CHAPTER ONE: INTRODUCTION

This study explores the experiences of deaf students who had chosen to study through online education. Online Education, also referred to as distance learning, e-learning, distance education, online learning, or computer-mediated learning, refers to “the application of telecommunications and electronic devices that enable learners to receive instruction that originates from some distant location” (Ellis, 2008, p. 22). Many researchers have argued that online education provides instruction to students for whom traditional classroom instruction is inaccessible due to difficulties such as living long geographical distances from colleges and universities, time commitment to families, lack of transportation, professional obligations, disabilities, or other issues (Janes, 2006; Schiffman, Vignare, & Geigh, 2007; Zembylas, 2008). Through online education, students can access instruction from home via computer or video conferencing, the Internet, DVD, intranet/extranet, satellite broadcast, interactive television, or a combination of these and other electronic methods.

According to Allen and Seaman (2006), for a course to be defined as online education, at least 80% of its content must be delivered electronically. Burns (2006) argued that online education is growing because of the flexibility of its modes of instruction. Flexibility is often cited as an advantage of online education, along with other factors, such as increased student interaction, less intimidation by peers due, and fewer difficulties related to social or socio-economic status (Aviv, 2004; Rabe-Hemp, Woollen, & Humiston, 2009).

The last two decades of the twentieth century marked significant growth in higher education institutions in the United States, particularly in online education, as facilitated by increased use of Information and Communication Technology (ICT). This is especially apparent in the widespread use of the Internet for delivering academic course content and library resources

(Wilson, 2001). However, the use of ICT has not been limited to academia. A growing number of online learning programs have enabled training organizations, industries, government facilities, libraries, and international organizations to maximize educational resources, enrich instructors' pedagogical methodology, enhance revenue, benefit learners, and maintain a competitive edge (Barron, 2002; Halsne & Gatta, 2008; Hoppe & Breitner, 2003; Schiffman et al., 2007). The Internet has facilitated online education reaching "maturity as a learning method" and any further developments are sure to evolve "alongside the technology that made it possible" (Conde, Muñoz, & García, 2008, p. 61). In other words, online education is only limited by the limitations of technology used to deliver it.

It is apparent that new technologies have challenged the idea that students should only learn in a traditional classroom setting (Toffler, 1991), which is particularly viewed as true for hard-of-hearing students. Deaf college students in the United States are a continuously growing population. It should be noted that in the Deaf community, the term "Deaf" (with a capital D) indicates a cultural group of individuals with shared experiences and the term "deaf" (with a lower case d) indicates impaired auditory function or hearing loss.

Hard-of-hearing students enroll in colleges in increasing numbers. This is partly due to the Americans with Disabilities Act (ADA) that was passed in 1990 and signed into law by President George H.W. Bush. The legislation of this act entitles all persons with disabilities to equal access to the facilities, goods, services and accommodations of all private and public entities and establishments in the United States (Hyde, 2004).

The current study explores the lived experiences of hard-of-hearing online college students, attending three Conviron Colleges located in Northeast Florida, by investigating how these students and their instructors are affected by the online learning environment. The study

focuses on the impact of online teaching tools, on the overall writing and reading skills of deaf students, the development of English literacy of prelingually deaf students, and deaf students from non-English speaking countries.

Background and Context

The continuing advancements of ICT have had an enormous impact on educational institutions throughout the developed and developing world (International Telecommunication Union [ITU], 2009). From the mid-twentieth century onward, the repositioning and expansion of technological advancements have catered to the growing demand for technology-based solutions (Samaras, Freese, Kosnick, & Beck, 2008). As previously established, one significant development was the growth of online education. Online education teachers have access to rapidly evolving electronic capabilities that do not require students to be physically present in traditional classrooms to experience learning.

Overview of Online Instruction

The development of ICT has increased the expansion of education delivery methods in online education. In some disciplines, online education can provide a more appropriate curriculum, lower the cost of operations for both students and schools, and diversify the reach of educators to a global audience. These are all far beyond what could be achieved in a traditional classroom (Allen & Seaman, 2007; Hebert, 2007; Unal, 2005). Educators have also adopted the use of ICT to facilitate remote educational opportunities for populations that had been underserved in the past due to cultural differences (particularly in ethnicity and language), physical distance, or a disability. Thus, online education can provide access for students who cannot attend traditional schools. A traditional school, in this sense, refers to institutions that follow the conventional format of education in which the instructor and student interact face-to-face. Online education has a different format in which instructors can transfer knowledge over a

distance to the learners via computer or video conferencing, the Internet, DVD, intranet/extranet, satellite broadcast, interactive television, or a combination of these and other electronic methods.

Over the past 10 years, there has been “explosive growth in the delivery of online courses and a growing competition among colleges and universities to expand into this market” (Ruhe & Zumbo, 2009, p.4). University administrators of the late twentieth and early twenty-first centuries have realized the opportunities afforded by incorporating online learning programs into existing educational structures, and the imperative nature of developing new programs and responding to marketing opportunities is significant (Evans, Haughey, & Murphy, 2008). As a result, many universities have made “substantial financial investments in learning technologies and students expect that ‘learning technology’ will be a key component of their education” (Academic Committee for the Creative Use of Learning Technologies, 2000, p. 5).

Colleges and universities in many nations have also begun to offer online education with the intent of adding value to existing course and program offerings. For example, university administrators in Australia, China, the United States, and the United Kingdom have increasingly recognized the need for accessible learning that does not require commuting (Allen & Seaman, 2007; Hebert, 2007). These include several institutions in China, such as Zhejiang University in Hangzhou, Tsinghua University in Beijing, and Huazhong Normal University in Wuhan. In Europe, universities offering online education include the University of Oxford in England, Fern Universität Hagen in Germany, and University of Barcelona in Spain. In the United States, many major institutions offer online education, including Indiana University, Michigan State University, Texas A&M University, Penn State University, University of Maryland, University of Missouri, University of Nebraska, and University of Florida.

Clearly, a growing number of traditional academic institutions across the globe have

begun delivering online courses to make academic programs accessible to certain populations and to meet student expectations (Academic Committee for the Creative Use of Learning Technologies, 2000). The Sloan Consortium (Allen & Seaman, 2006) found that nearly 3.2 million students in the United States were taking at least one online higher education course during fall 2005, a substantial increase from 2.3 million in 2004. According to this same Sloan Consortium study, 62% “of academic leaders rated the learning outcomes in online education as the same or superior to those in face-to-face education, compared with 57% in 2003” (Allen & Seaman, 2006, p. 2). As a result, higher education institutions are increasing their online education offerings. For example, in 2005, Indiana University South Bend began a five-year strategic plan in which their chancellor designated funding to support the development of a unified program of online learning at the university. By 2010, the financial returns to the institution have generated income to contribute to investments in technology upgrades and funding to add faculty positions in response to the increased demand for online learning courses.

Other institutions involved in higher education have also shown their strong support of online education in the form of sponsorships, which enable them to upgrade their technological platform, and therefore, strengthen their research capacities. For example, the United Nations Educational, Scientific, and Cultural Organization (UNESCO) is promoting and sponsoring the concept of satellite-based universities in science and technology in different regions of the world: The Arab states, Eastern Europe, Central Asia, Latin America, and Africa. These kinds of endorsements and developments seem to indicate that online education will be an everlasting option in higher education. The hope is that the universities will then be better able to provide quality-learning services that lead to an increased number of students taking part in the online education programs (Braun, 2008; Popov, 2009).

Statistical trends of the last decade suggested that online education was expected to be a feature of 75% of the institutions within North America by the year 2010, a percentage that is only expected to grow and significantly affect educational practices (Tucker, 2001). However, opponents to this school of thought suggest that online education will be fully tapped within a decade (Unal, 2005). Ma (2003) contended that communication/information networks are influencing the very essence of the educational process, and nowhere is this more apparent than in the proliferation of online education courses delivered primarily, or entirely, using Computer-Mediated Communication (CMC) technologies. CMC technologies are unique in providing unprecedented access to information and allowing learners to participate in the educational process anywhere, anytime (Ma, 2003, p. 1).

Learners' expectations and perceptions of online education typically have a direct impact on outcomes (Meyer, 2002). Howland and Moore (2002) suggested that the primary attributes related to learners' ability to succeed in an online program are self-management and self-reliance. In the online learning context, self-management involves properly allocating time and financial resources, while self-reliance denotes the ability and inner drive that propels a learner towards discovery of knowledge based on the foundational content given (Howland & Moore, 2002). The degree to which learners possess these qualities is visible through their innovations and discovery of better ways of accomplishing tasks before they are taught. Students with goal-oriented approaches to online learning achieve higher academic performance than those with different focuses (Terrell, 2005).

Of course, one of the challenges in online education is that students who do not possess these qualities may find online education to be difficult (Terrell, 2005). Furthermore, online learning students may find it difficult to contribute to class discussions in an online course and,

further, may discover that online classes require significant changes in their mode of learning and retention of knowledge (O'Malley & McGraw, 1999). Students have also expressed concerns about isolation, limited access to library resources, technology problems, and inflexible instructors (Pribesh, Dickinson, & Bucher, 2006), all of which can create negative experiences for students.

At the same time, the emergence of online education programs has provided students with the opportunity to earn college degrees without stepping inside physical classrooms. Venturing into the online learning environment can create optimistic expectations for students if they perceive there will be flexibility in interacting with tutors and instructors (Howland & Moore, 2002). Clearly, students' perceptions and awareness of the demands of online education are important.

This paper will refer to all of the study participants as "Deaf" as a form of respect for each student who is part of the Deaf community and culture. The term "deaf" will only be utilized when referring to auditory ability and does not reflect the Deaf community or cultural views. Padden and Humphries (1988) define hard of hearing people as those "who walk a thin line between being deaf people who can be like hearing, and deaf people who are too much like hearing people"(p. 50). In general, the term "Deaf" is also used as a collective term for individuals with hearing impairment or loss regardless of the degree.

There are recent improvements made for deaf students' access to information in traditional postsecondary settings through the use or variation of technologies. The Internet, instant messaging, cellular phones, text messaging, and videophones are some of the technological advancements that make communication fast and effortless. With the continuouslyevolving advances within the educational technology realm, the limitations of

online instruction appear minimal. Challenges remain in the utilization and adaption of new technologies for use in postsecondary educational settings (Clymer, 2006). In an online postsecondary environment, students as of yet do not benefit from full access to information (Clymer, 2006). While postsecondary deaf students observe and participate in online discussions, chat rooms, and emails, there is a lack of interpretation of the Deaf community's lived experiences and perceptions of online learning.

Two essential problems in the education of deaf individuals explain their cognitive deficiencies and delays (Clymer, 2006); one is the difficulty of communication, considering the divided attention, and the other is the impact of hearing loss on communication with hearing students, who perform a prominent function in the cognitive development of their deaf peers. In this case, merely administering tests to deaf students in order to identify the degree of their hearing loss that affects their learning and cognition does not suffice. It is also important to analyze how the hearing students are going to teach the deaf individuals and examine the quality of the communication utilized (Clymer, 2006)

That being said, a hearing student who can communicate with a deaf person plays the role of a fundamental element in deaf education. This is where sign language comes into play, as it bridges the communication gap between deaf students and their hearing peers. The deaf experience delays in language functions that lead to cognitive, emotional, and disturbances. This includes not only the communicative function, but also the function of organization of thoughts. Both assume an essential role in the cognitive development of deaf individuals (Clymer, 2006).

When discussing the causes of deafness, it is important to distinguish between prelingual and postlingual deafness (de Graaf & Bijl, 2002). Causes of prelingual deafness include intra-uterine rubella, toxoplasmosis, cytomegalovirus, diabetes, syphilis, irradiation, hypoxia, the use

of autotoxin drugs, and maternal alcoholism. For postlingual deafness, the most common causes are anoxia-hypoxia, traumatic birth, premature birth, and maternal herpes (de Graaf & Bijl, 2002).

There are different kinds of hearing loss (Tos, Lau, & Plate, 1984). First, conductive hearing loss is determined by pathologies located in the medium and external ear, ranging from cases of the introduction of foreign objects in the ear to bad formation of the ear or drillings of the membrane that involves the eardrum. Second, sensorineural hearing loss is determined in the cochlear nerve. In general, this kind of loss is caused by infections. The third kind is mixed hearing loss, which combines conductive and sensorineural hearing loss. This kind affects the medium ear and the internal ear at the same time. A person that hears normally is going to grasp the vibrations of the sound in approximately 25 dB. The person that hears a 26 dB minimum is considered to have an auditory loss. However, this standard varies. The stronger the intensity required for hearing, the higher the degree of auditory loss (Tos et al., 1984).

According to the degree of auditory loss, the deafness can be classified as light from 26 to 40 dB. It characterizes itself by the fact that the individual does not perceive the phonemes similarly, thus altering the comprehension of the words. The voice is also modified, which makes the acquisition of language, both reading and writing proficiency, difficult. From 41 to 70 dB, hearing loss is moderate. In this case, there is a perception of loud sounds, but the development of the hearing loss is marked by the delay of the language and articulatory alterations. From 71 to 90 dB, hearing loss is severe. At this level, the person is able to identify familiar noises, but with a predominantly lower range of perceived sounds. The development is sufficiently constant and visual aptitude to the detriment of the auditory aptitude is evident. Over 90 dB, the hearing loss is

deep. There is no perception of the human voice, and adequate stimuli, which are visual and not auditory, are needed (Starr, Picton, Sininger, Hood, & Berlin, 1996).

It is imperative for schools to consider the different needs of deaf students. Through the relationship between professors and students who speak the same language and experience the same culture behind it, deaf students learn, assimilate, and develop with better performance. It will be beneficial to describe and compare the opinions of the deaf students who study in the mainstream classroom and of those who study in bilingual schools or bilingual serial rooms. In an attempt to help hearing students understand the injustice and suffering that the Deaf individuals experience in the mainstream classroom, the situation of inequality in the lives of the Deaf individuals in the schools needs to be investigated (Marschark, Lang, & Albertini, 2001).

As far as Deaf students are concerned, the educational system does not seem to comply with communication standards of model classrooms in mainstream schools. This appears to be discriminatory (Marschark et al., 2001). The inclusion of deaf students in the mainstream classroom does not actually include the deaf students, since they have a different language. It is necessary that professors of both deaf and hearing students know American Sign Language. The fact that interpreters are utilized does not guarantee an effective education for deaf individuals (Lang, McKee, & Conner, 1993). In mainstream classrooms that include deaf students, the professors tend not to concern themselves about the deaf students' needs and pass the responsibility of teaching the students to the interpreter. This does not necessarily mean that these professors have no affection for the deaf individuals. However, it must be considered that love and affection do not guarantee a high-quality education for deaf individuals.

Aside from the perceptions of Deaf college students on the efficacy of online learning, there are several paradigms that are not sufficiently explored in the study of deaf education. One

of the constructs that was never explored is the belief or sense of efficacy of the teachers regarding their ability to influence the performance of their deaf students. It was not until 2012 that Garberoglio, Gobble, and Cawthon investigated and discovered the significant correlation between the efficacy beliefs among teachers, the characteristics of the school, and teachers in 80 United States Deaf education locations. Data from 296 participants revealed that the teachers' perceptions on how collectively efficient their educational circumstances were predicted their efficacy beliefs. These numbers were generally high among deaf education teachers and significantly higher in terms of classroom management and instructional strategies than in student engagement (Garberoglio, Gobble, & Cawthon, 2012).

Thus, it is important to examine further school processes that affect the attitudes and beliefs of teachers toward deaf education. Other issues teachers of deaf students need to be familiar with are the historical background of Deaf education, ethnicity among the Deaf population, academic success of Deaf students in college, the demographics of Deaf college students in the United States, the universities and career opportunities available for them, and current United States laws for Deaf education (Marschark et al., 2001).

Historical Background

In the 1970s, deaf students started to attend either exclusive independent classrooms or completely independent residential Deaf schools (Moores, 1987). In 1975, the passage of the Education for All Handicapped Children's Act, which mandated mainstreaming students with disabilities whenever possible, encouraged more parents to enroll their children with disabilities in public schools. The mainstream environment promotes interaction between students with disabilities and able peers, thus encouraging a greater number of students with disabilities to attend colleges and universities that they once would not have considered. The Rehabilitation Act guarantees aid for educational advancement to adults with disabilities. Under this law,

colleges and universities funded by the federal government are not allowed to refuse enrollment for students with a hearing loss (Norton, 1992).

As specified in the Americans with Disabilities Act of 1990, it is illegal to discriminate against any individual of equal enjoyment of goods, services, facilities, privileges, advantages, and accommodations in any place of public accommodations operated by a private entity or business for reasons of disability (Norton, 1992). Deaf and hearing students alike have the right to obtain an equal education at any higher learning institution, as supported by the Education for All Handicapped Children's Act, the Rehabilitation Act, and the ADA (Norton, 1992). Major changes occurred in the late 1900s with regard to inclusion. The Americans with Disabilities Act (ADA, 1990) helps to ensure that students with disabilities are protected outside of the school. ADA included protections in the employment arena, as well as ensuring Americans with disabilities had access to an array of public and private services. During this time, the Education for All Handicapped Children Act was updated by the Individuals with Disabilities Education Act (IDEA) (Signor-Buhl, LeBlanc, & McDougal, 2006).

Deaf Education and Ethnicity

The ethnic heterogeneity in the United States is evident not only in general education but also in special education. The sociocultural concerns related to the education of Deaf students include the attitudes of the ethnic parents towards their children's hearing disability and the ethnic facets of the link between the Deaf-World. That is to say, different minorities use different types of sign language which relate to cultural values of the bigger minority populations surrounding them. In general, deafness is a "functional issue;" moreover, hearing impairment has something to do with culture (Case, 2008, p. 5).

Rittenhouse, Johnson, Overton, Freeman, and Jaussi (1991) identified the difficulties of African American Deaf and other Deaf communities since 1960 and established solutions that

jointly recommend an approach for the long-term progress of individuals with hearing impairment. In their study of African American, Hispanic, and other minority parents with hard-of-hearing children, Fischgrund, Cohen, and Clarkson (1987) found that adapting to a new culture comes with anxieties, belief systems related to disabilities are inconsistent, and the community and extended family are essential to care provision. Therefore, parents of deaf children are likely to identify with these difficulties and be more sensitive to their children's communication needs at home, in the community and at school (Rittenhouse et al., 1997).

Jones and Kretschmer (1988) investigated the knowledge, viewpoint, and attitudes of African-American parents concerning their hard-of-hearing children's condition. Their findings revealed that these parents had a lack of knowledge of the common teaching methods and practices for hard of hearing students and minimal involvement in the formal process of learning despite their high satisfaction with the programs for their children's learning.

From the viewpoint of ethnic groups whose characteristics are present in the Deaf-World, the "programs of the majority that discourage deaf children from acquiring the language and culture of the Deaf-World and that aim to reduce the number of deaf births" are unethical (Lane, 2005, p. 291). These programs are a result of the "construction of the Deaf-World as a disability group," which Lane (2005, p. 291) describes as unsuitable because of its predication on a misconception of bringing wrong solutions to actual problems, its danger to the Deaf-World's future, the unnecessary surgical and medical hazards for deaf children, and the fact that most Deaf people do not believe themselves to have a disability.

Academic Success of Deaf Students in College

In the past, achieving academic objectives has been a struggle for hard-of-hearing students, especially in postsecondary education. At present, a large achievement gap separates

deaf students from their hearing equivalents. For several years, this difference indicated by standardized assessment results continued and any changes were not significant (Lang, 2002).

With only one of every four students graduating, the graduation rate of deaf students both for two-year and four-year college programs in the United States is approximately 25% (Lang, 2002). This low graduation rate reflects the struggle of deaf students, in general, to be academically successful. Several factors affect the academic success of deaf students in higher education.

Lang (2002) identified insufficient academic preparation, lengthy programs, an inability to carry full load courses, leaves of absence, unsatisfactory social life, and changing career interests, as some of the obstacles that keep deaf students from completing a baccalaureate degree program. Access and support services, such as note taking assistance, preferential seating, classroom amplification, sign language interpreters, and real-time captioning services, are provided to students with hearing impairments. On the other hand, there is still an alarming failure rate for hard-of-hearing students. Navigating through these support services itself is a great challenge for deaf students.

In the subject of deaf education, the fact that family background plays a role as an essential factor that affects the academic success of deaf individuals is sufficiently proven. As O'Connell (2007) puts it, "the deaf students who are more likely to succeed academically are those children who are born to deaf parents" (p.1). Condeluci, Ledbetter, Ortman, Fromknecht, and DeFries (2008) also discussed the universal concept of social capital as a vital factor related to the academic success of Deaf students. While it is available to individuals with or without disabilities, social capital is a series of support from family, friends, and colleagues that may be

restricted to individuals with disabilities such as deaf students, so it may cause difficulty for them when developing friendships and networks (Condeluci et al., 2008).

Discussions on the subject of success in college should take into account that, in general, the challenges encountered by able and disabled students are not different. In an attempt to achieve independence by accomplishing their objectives, hard-of-hearing individuals attend "college campuses and workforce training programs" (Braswell-Burris, 2010, p. 119). In their two-year study of hard-of-hearing college students, Ragosta and Harrison (1985) explored the validity of the combined Scholastic Aptitude Test (SAT) and the Student Descriptive Questionnaire (SDQ) as predictors of the persistence and grades of first-year college students. Results showed that the good predictors of college grades were high school grades and SAT scores for both the control groups and the students with disabilities. Another good predictor was select SDQ biographical questions given with the SAT for deaf and hearing students. The comparison between mainstreamed deaf students and their hearing counterparts revealed that the combined mathematics and SAT tests was unbiased (Ragosta & Harrison, 1985).

The fact that deaf students have low levels of achievement is often debated in the area of deaf education. Traxler (2000) and Qi, and Mitchell (2011) revealed that, as shown by the results of most test assessments such as the Stanford Achievement Tests (SAT), the norms of deaf students are lower than those of their hearing peers. On the other hand, as implied by performance markers from academic achievement measures, the increasing academic success of deaf students has been translated to success, not only in postsecondary education but also in employment opportunities. This may indicate that the enhanced academic attainments of deaf students are not being measured accurately by standardized assessments. Otherwise, overstated

grades and easy access to postsecondary opportunities and graduation are being given to deaf students.

In order to help deaf individuals attain their personal, academic, and employment success, there is a need for "educators and community-based service providers develop and implement best practices" (Braswell-Burris, 2010, p. 120). Currently, there is an effort among academic researchers dealing with the subject of deaf education to neutralize this incongruity and recognize major factors that can resolve the gap between the academic achievement of deaf students and that of their hearing peers.

U.S. Deaf College Students' Demographics, Universities, and Career Opportunities

In the United States, special programs for deaf college students are provided by the National Technical Institute for the Deaf (NTID) in Rochester, New York, California State University at Northridge, and Gallaudet University in Washington, D.C. (Norton, 1992). A Gallaudet Research Institute report revealed that out of 1,000 United States citizens, between two and four are functionally deaf (Mitchell, 2005). This is evident in the population of Deaf students in postsecondary education. Increasing numbers of deaf students are encouraged to attain higher education, in light of the laws that favor them and the technological innovations that facilitate their learning. Changes in federal policies urge promising intervention and ongoing educational opportunities for Deaf students.

In addition to cochlear implants and many other modern technological advances, the demographics of growing numbers of Deaf students have brought about several educational needs. These include the need to deal with deaf students from non-English-speaking homes and to itinerantly serve deaf students in home districts, whether urban or rural. According to Smith and Allman (2010), deaf students are also forced to manifest less than their hearing impairment

when they function and to receive cochlear implants, digital hearing aids, and other assistive technologies at younger ages.

In relation to this, the Individuals with Disabilities Educational Act (IDEA) is significant. IDEA is one of the most important laws supporting the educational rights of students with disabilities. The key features of this law are the right to a Free and Appropriate Public Education (FAPE) in the Least Restrictive Environment (LRE), the assurance that the education a student with a disability receives is standards-based, and that disabled students are educated with non-disabled peers (Partners in Education, 2009; Minnesota Governor's Council on Developmental Disabilities, 2007; Signor-Buhl, LeBlanc, & McDougal, 2006).

Court cases that have helped the inclusion movement include *Timothy vs. Rochester School District* in 1989 and *Greer v. Rome City School District* in 1992. In *Timothy vs. Rochester School District*, the Supreme Court ruled that school districts had the obligation to provide an appropriate education to all children. *Greer vs. Rome City School District* mandated that a school district must consider what services best serve the student before removal from the general education setting. As a result of this ruling, school districts began to embrace the continuum of services for students and provided appropriate classroom settings for students with disabilities to ensure academic growth (Signor-Buhl, LeBlanc, & McDougal, 2006). In 1975, Public Law 94-142 (The Education for All Handicapped Children Act) took effect. The bill now known as IDEA was passed by Congress in 1990. Since then, the severity of disorders among children with disabilities being admitted to public schools has increased significantly. One reason is the deinstitutionalization of children educated in residential institutions, such as a state school for the Deaf. As a result, parents of the deinstitutionalized children enrolled their children in local school districts to receive special education services. This change required speech

pathologists to demonstrate additional competencies such as augmentative communication devices, cochlear implants, and swallowing therapy strategies. Deinstitutionalization also contributed to increased workloads. School speech pathologists serve up to 100 special education students per week (Jellison, 2007).

During the past few decades, the demographics of the deaf students who are recipients of special education services has significantly changed with better diversity and distribution in the students' profiles in terms of intervention, ethnicity, and educational setting. It must be considered, however, that demographic variables associated with deafness traits are not good predictors of handicapped students' grades in college, as reflected in the examination of demographic variables, such as gender, age, race, and deafness-related factors (Ragosta & Harrison, 1985).

According to Zahadurin, Nordin, Yasin, Din, and Embi (2011), Deaf students prefer courses with more graphic elements since "these elements surround their activities while using a computer, such as playing games, drawings, watching 3D animation movies and cartoons, Internet purposes like social network of Facebook, Myspace, Twitter, etc., chatting, finding articles, and other internet purposes" (p. 57). Thus, the research on deaf college education can concentrate on courses that involve these graphic elements. Also, it can be assumed that they are more likely to graduate from college when they take such courses.

Current U.S. Laws for Deaf Education

One of the most important things a parent can do for their child is to know their rights under the law and then take a proactive stance towards their child's education. In 1975, President Gerald Ford signed the Education for All Handicapped Children Act (EAHCA) into law, making the government responsible of providing all children with disabilities in the United States with a free and appropriate education. Prior to the passage of this legislation, which is also known as

Public Law 94-142, over 50% of the children with disabilities population in the United States was deprived of suitable educational services. The lack of adequate services within the public school system completely excluded approximately a million of them from the educational process that their hearing peers undergo. Often, the only alternative for the families of these deaf children is to find special schools, even if they are quite expensive and distant from their residence.

The United States educational system's failures to provide for the academic needs of deaf children urged the Congress to seek solutions to the problems by passing several laws. The first of these laws is the 1973 Rehabilitation Act's Section 504. The EAHCA of 1975 was combined with the 1973 Rehabilitation Act to guarantee that each child with a disability receives a Free and Appropriate Public Education (FAPE). This was amended in 1986 by Education of the Handicapped Amendments. In 1988, the terms "limited English proficiency" and "native language" legally defined by the Bilingual Education Act of 1988 included Deaf students for the first time (Marschak, 1997, p. 111).

In 1990, the enactment of the Individuals with Disabilities Education Act (IDEA) required school-age children to undergo an early hearing loss evaluation through various feasible communication modes or the native language of the child, which include sign language, to avoid bias (Marschak, 1997). It is imperative for the parents to effectively serve as their children's advocate and to have sufficient understanding of the mandates of the IDEA. It is crucial to put children with disabilities in an area nearest to their residence or the Least Restrictive Environment (LRE), which the government had to carefully define because of the intrinsic communication problems in hearing disabilities.

In 1992, the definitions of FAPE and LRE were standardized through the Notice in the Federal Register released by the Department of Education, which stated that most facets of the

learning process are strongly affected by the main deafness-related obstacles to language and communication in learning. The interaction of deaf students with their teachers and hearing peers, which is significantly affected by the essentially isolating communication nature of deafness, depends on direct communication with the goal of knowledge transmission, confidence, and identity development of deaf children. On the other hand, the most obstructed area between deaf children and their teachers and hearing peers is communication.

Incorrectly interpreted, the provisions of Section 504 and the LRE tend to require some deaf children to be placed in programs that may fail to meet their individual learning needs. Essential to the provision of FAPE to deaf students is the satisfaction of their unique communication and other relevant needs. Even any mainstream classroom that impedes the provision of appropriate education that meets all the learning needs of deaf children is not the LRE for them. Deciding the LRE that can offer appropriate services to a deaf child is a part of the determination of the placement that will provide each individual deaf child with FAPE.

In the year 2000, inclusion was brought into the forefront with the reauthorization of the Individuals with Disabilities Education Improvement Act (IDEIA) of 2001, the reauthorization of IDEIA of 2004, and the No Child Left Behind Act (NCLB) of 2001. The IDEIA put an increased focus on the rigor of educating students with disabilities so that they progress through the general education curriculum with accommodations and modifications in the general education classroom. The reauthorization in 2004 made the Act compatible with NCLB (Villa, Thousand, & Nevin, 2008).

However, despite all of these current laws related to deaf education in the United States, there are still existing problems. Regarded as a disability with low incidence, deafness requires costly teachers and aides with highly specialized skills and knowledge. Thus, tightening budgets

make it difficult for school systems to justify the cost. Consequently, the only alternative left for school systems is to place a deaf child in a mainstream classroom if he or she is deemed capable of effectively learning there. In many cases, however, what finally resolves the problem is putting the needs of the deaf child before the wants of the administrators or the parents (Villa et al., 2008).

Situation to Self

I have a strong personal interest in this research endeavor. Not only did I grow up as a Child of Deaf Adults (CODA), I have a hearing impairment myself. Thus, the Deaf language is my first language and the Deaf community is an essential part of my life, family, and culture. When I was 2 years old, my parents were told I had an unexplained hearing loss in both of my ears. This is typically caused by the breakage of the tiny hair cells in the ear that help communicate sound to the brain. Sensorineural hearing loss is permanent and could have been caused by variety of things such as over exposure to loud noises, genetics, a virus infection in the inner ear, or a head injury (McCabe, 1979). Because I was young when my hearing loss was discovered, I am uncertain as to why or how it happened.

With sign language as my primary language, I was introduced to English for the first time upon entering school at the age of six. As a second language learner, I struggled with the language structure and grammar differences between American Sign Language (ASL) and grammatically correct spoken English. As Brokop and Persall (2009) pointed out, "a strong grounding in ASL sets the stage for successful introduction of English literacy skills"(p.2) since deaf students who are living with deaf parents have consistently higher reading test scores than those of their peers with hearing parents. I know firsthand the struggles and language barriers deaf students experience due to the variations in English structure and the proper grammatical

sequence of words that English speakers recognize. I am the first person in my family to attend college and I have personally witnessed the challenges deaf students face when trying to communicate and socialize in a scholastic atmosphere. My Master's degree was offered as a distance learning degree from Texas Woman's University, and this experience led me to question if proper accommodations for deaf students were being offered in an online capacity.

While attending school online, I always felt like I was missing so much of the material. Part of my frustration stemmed around the onus of having to translate the written English words into ASL for complete comprehension. Secondly, I struggled with eyestrain while watching and reading the PowerPoint presentations, which I could not hear so I was forced to read all of the side notes. My instructors would add clipart and graphics to make the presentations more visually stimulating. However, this also made it more difficult for me to concentrate on the written text. As an ASL instructor by trade, I utilize technology on a daily basis in the classroom while incorporating how the Deaf community can use certain online tools for communication and information. In class, I provide an online reference and guide as well as a sign language dictionary for both deaf and hearing students to explore. If I do indulge the class in a PowerPoint presentation, I use it for a visual aide only and do not write excessive notes that would distract the students' focus.

My epistemological assumption will help uncover the reality of factors that determine a deaf student's perspective of online learning. Both deaf students and their online instructors will benefit educationally from lived experiences addressed in this study. It is my desire to bring light to solutions or possible remedies to accommodate deaf students enrolled in online courses by providing a better understanding of issues and concerns related to the online learning format.

Although many deaf people consider themselves normal learners, deaf people face a

social obstacle in communicating with their hearing counterparts in an online environment (Lane, Hoffmeister, & Bahan, 1996). The issue of concern is not deafness itself, but rather the communication differences between individuals with typical hearing and deaf students that rely on an English translation. These communication differences between deaf and hearing students will be discussed more in the Literature Review section. To ascertain the learning and lived experiences that deaf adults bring to the classroom, personal history regarding educational context, bilingual deaf education, and the life of visual language processing must be understood (Enns, 2009). In the online learning environment, accommodations appear minimal as current studies fail to recognize the social equality experienced between the deaf and hearing students.

Problem Statement

The right to education requires that all children are guaranteed access to education with equality in opportunities and quality, which are the very elements that define educational inclusion or inclusive education (Aincow, Booth, & Dyson, 2006). The progress toward inclusion can reduce the different barriers that impede or complicate the access, the participation, and the learning quality. Special attention is given to the most vulnerable or disadvantaged students, who require more exposure to situations of exclusion and a good education (Aincow, Booth, & Dyson, 2006). Moreover, the 25% attrition rate of deaf students in higher education is a considerable problem. Many assume that online learning opens doors to education for anyone, anywhere, and at any time, although this assumption cannot be made until online learning classes offer accommodations that suit all potential students (Burgstahler, 2006). As such, it has become imperative to assess the lived experiences of deaf college students taking online classes.

Purpose of the Study

The purpose of this hermeneutical, phenomenological study is to provide a better understanding of how Deaf students perceive online learning by researching lived experiences and bringing attention to needed accommodations that might bring online learning up to an equal learning standard for both the hearing and Deaf student body. In general, this study aims to investigate the advantages Deaf college students enjoy from online learning over the brick-and-mortar classroom setting. In particular, three skills of Deaf college students—writing, reading, and English literacy—will be explored on the basis of the impacts of online learning on twenty-first century postsecondary education for Deaf students.

Research Questions

This study was to address the following research questions:

RQ1. In the perspective of Deaf college students who are enrolled and who dropped out, how did the online class affect their writing skills?

RQ2. In the perspective of Deaf college students who are enrolled and who dropped out, how did the online class affect their reading skills?

RQ3. In the perspective of Deaf college students who are enrolled and who dropped out, how did the online class affect their social and academic satisfaction?

RQ4. In the perspective of Deaf college students who are enrolled and who dropped out, how did the online class meet their specific learning needs?

Theoretical Framework

Online education, as defined in this dissertation, is an education program, in which individuals can participate without being physically present in a traditional classroom. In the

past, scholars have described online education as a process as well as a product of modernity (Peters, 1989; Rumble, 1995). The theoretical orientation used to buttress this study is social cognitive theory. Social cognitive theory was developed by Albert Bandura in order to explain how human learning occurs. It examines what and how people learn, and it encompasses concepts such as observational learning, self-regulated learning, imitation, and modeling (Ormond, 2008). The social cognitive view of learning asserts that people can be self-efficient when organizing and regulating themselves. It also states that people are naturally proactive (Schunk & Pajares, 2004).

The social cognitive theory recognizes the importance of the relationship between the individual, the environment, and behavior. It also recognizes that humans are not simply reactive organisms. Social cognitive theory posits that people are proactive, especially when they want certain things to go their way through their own efforts and actions (Schunk & Pajares, 2004). The social cognitive theory emphasizes intentions, forethoughts, self-regulations, self-efficacy, and self-reflections. According to Bandura (2001), it is a natural trait of most people not to act when they know they would not be successful in getting the desired results in challenging circumstances. Intentionality involves having the capability to plan an action. Forethought goes beyond planning, as using forethought allows people to heighten their own motivations to be more prepared for the future (Bandura, 2001). “In this form of anticipatory self-guidance, behavior is motivated and directed by projected goals and anticipated outcomes rather than being pulled by an unrealized future state” (Bandura, 2001, p.7).

Self-regulation allows an individual to shape appropriate courses of action. It also allows an individual to influence how certain actions would be executed (Bandura, 2001). Self-reflection is the evaluative component of social cognitive theory. People come to understand how

certain things take place in their lives and understand the rationale behind these events through self-reflection. Self-reflection leads to more appropriate behavior and thinking (Schunk & Pajares, 2004).

Research Plan

This qualitative study will employ a hermeneutic, phenomenology design essential in uncovering personal and honest perspectives (Van Manen, 1990). As I seek a better understanding of the lived experiences of Deaf online learners, data collection and analysis will bring attention to needed accommodations for Deaf students. Bogdan and Biklen (1998) explained that the qualitative research approach requires the world to be studied with the theory that "nothing is trivial, that everything has the potential of being a clue that might unlock a more comprehensive understanding of what is being studied" (p. 6). The goal of this phenomenological study is to provide a better understanding of how the Deaf community and those involved in Deaf culture perceive the social and academic side to online learning.

Assumptions

Researcher biases and perceptual misrepresentations are potential limitations in any qualitative study. How the researcher reacts to a participant during an interview can be a limiting factor as well, since the researcher's reactions may affect the participants' responses (Yin, 2003). Leedy and Ormrod (2005) contended that researcher assumptions are self-evident truths; therefore, it was assumed that the participants interviewed were highly qualified.

The validity of the results is based on the assumption that the participants answered the interview questions in an honest manner based on their lived experiences (Bruyn, 1966). It was also assumed that the interviews revealed a common area of knowledge in online education and that the participants understood the nature and significance of the study. The assumption was

further made that recording of the interviews provided a consistent and accurate representation of each participant's point of view.

Delimitations

The participating students in the study must be active members of the Deaf community. Consequently, personal and lived experience will reflect those of the Deaf culture. Students participating in the study must be deaf from birth and are required to use American Sign Language as their primary communication method in everyday interaction. Each student must have attended the Florida School for the Deaf and Blind and fall between the ages of 18 and 24 years old. Lastly, each student is required to have completed at least one traditional classroom-based lecture course as well one online-only course, not including hybrid or blended courses.

Nature of the Study

The selected methodology appropriate for this research is hermeneutic phenomenology, which is "aimed at producing rich textual descriptions of the experiencing of selected phenomena in the life world of individuals that are able to connect with the experience of all of us collectively" (Smith, 1997, p. 80). Concerned with the human experience as it is lived, hermeneutic phenomenology focuses on illuminating details and seemingly trivial aspects within experience that may be taken for granted in our lives, with a goal of creating meaning and achieving a sense of understanding (Wilson & Hutchinson, 1991). This lived experience can be explored through phenomena, attention to, perception, recollection, and contemplation of the world with humans as knowers. This can also include the approach of being a human as an involved being with an emphasis on the human providence in a foreign world (Ajjawi & Higgs, 2007; Annells, 1996). Ajjawi and Higgs (2007) stated that "increasingly deeper and layered reflection by the use of rich descriptive language" (p. 616) allows for a more profound

understanding of the significance of a lived experience from the identified experience of phenomena (Smith, 1997). Online accommodations of any kind are prohibited for students in this study.

Definitions of Key Terms

Continuum of Services: This is a range-of-service delivery model for students who have an IEP ranging from the least restrictive environment, which includes being a member of a general education classroom with no supports needed to a self-contained program. This is determined by the student's disability such as an autism class or a deaf and hard of hearing class.

Individualized Education Program (IEP): This is a program with specific goals set by an education team for a special education student that include any special supports or resources that are needed to help the student achieve those goals (Keep Your Eye on the CAP, 2009).

Special Education: These are direct instructional activities designed to support some of the following student exceptionalities: learning disabled, physically/medically challenged hearing impaired, and gifted and talented (Keep Your Eye on the CAP, 2009).

Inclusion: This is a commitment to educate each child in the least restrictive environment in the school and classroom that the child would otherwise attend. This involves bringing the support services to the child rather than moving the child to the services. This also requires that the child will benefit from being in the class without having to compete with the other students.

Inclusive School Practices: This is an initiative that was designed to support and provide schools with the resources to grant access for all students. This is so all students can achieve and progress through the general education curriculum and feel accepted into the academic and social culture of the school community.

CHAPTER TWO: LITERATURE REVIEW

This chapter contains a summary of the research regarding online learning practices that are appropriate for Deaf students. There is extensive theoretical literature on online learning ranging from position statements to scientific research data that were deemed appropriate for the understanding of this study. The literature review covers a number of thematic areas with respect to the experiences of Deaf students studying through online education.

Scholarly books, seminal journal articles, and research documents were reviewed through the Liberty University libraries. Additional databases searched included EBSCOhost and ProQuest Digital Dissertations. Bibliographic and reference listings were accessed from appropriate titles discovered within the review process. Approximately 40 current scholarly articles pertaining to online education/learning, distance education/learning, Deaf education, e-learning in higher education, and qualitative research in education were reviewed.

Empirical literature consulted for this review was located with the following phrases: Comparison of face-to-face and online education, studies of effective online teaching and learning methods, benefits of online education, motivational factors for online education, student and teacher perceptions of online courses, barriers, challenges, and criticism related to online education, standards of evaluating online education, and experiences of Deaf students undertaking online education. Summaries of these studies in the following sections are intended to build support and context for this investigation.

Additionally, it should be noted that this chapter reviews literature from the context of the entire online education environment, including all fields of study that offer online courses at higher learning institutions. However, the major area this study explored was the experiences of Deaf students who are enrolled in online courses. This specific focus aided in understanding the

major areas that attract online education students while also exposing the disadvantages and challenges that such students face while engaged in an online learning program. The review of literature covers a number of thematic areas related to the experiences of Deaf students learning through the mode of online learning.

Online Education and the Theory of Modernity

Researchers argued that calling online education a process and a product of modernity was based on the fact that online learning is a technology-based system that has developed over time. It is pillared on the assumptions of the theory of modernity and based on the philosophy of constructivism.

The theory of modernity assumes that the natural world can be transformed for the benefit of individuals and society at large through applications of scientific thinking to all aspects of intellectual, social, cultural, and economic life. The important features of modernity, as highlighted by Harvey (1989), were “to develop objective science, universal morality and law and autonomous art according to their inner logic or internal structure” (p. 9).

Modernity was considered to be losing its grip on the western societies during the late twentieth century (Elliott, 2001), heralding the start of the postmodern era. The term “post” is more than a marker of time. It refers to “a historical period of time marked, in part, by globalization, industrialization, and the proliferation of technologies” (Glesne, 2011, p. 12) and to “the regeneration and re-constellation of new ideas and social practices” (Prasad, 2005, p. 213). Thus, post-modernity is not something that comes “after” modernity but something that comes as a reaction to modernity (Brann, 1992).

While modernity was characterized by the firm belief in logic and reasoning and the use of science and technology as the solution to all problems (Harker, 1993), *post-modernity* is

characterized by the distinctly global expansion of information technologies and the disintegration of nation-states. Under post-modernity, the paradigms that the people have depended upon to give meaning to social interactions and development are viewed with suspicion, as plurality and uncertainty permeate life (Prasad, 2005; Schwandt, 1997). According to Delamont (2002), “*postmodernism* argues that there are no universal truths to be discovered, because all human investigators are grounded in human society and can only produce partial locally and historically specific insights” (p. 157).

The terms postmodernity and postmodernism are often used interchangeably, thus it is important to note the distinction between them. The term postmodernity has been referred to as the manner in which the world has evolved in a certain period in literary and cultural history owing to the developments in fields of politics, economy, media, and society. On the other hand, postmodernism has been associated with a group of ideas emerging from philosophy and theory in relation to aesthetic construction (McHale & Neagu, 2006). Postmodernity usually pertains to a cultural situation or state of being while postmodernism places emphasis on the cultural movement (Bauman, 1992). Some researchers even infer that postmodernity is the circumstance wherein the late twentieth century culture can relate while postmodernism is a response to that circumstance (Bauman, 1992; Eco, 1989).

It is difficult to reach a definition of postmodernity, as it is not a combination of philosophical assumptions but a diverse intellectual movement against modernity with a range of philosophical assumptions (Brann, 1992). As noted by Brewer (2002), postmodernism cannot be seen as a new worldview but as “the disillusionment with the ideals of the Age of Reason” (p. 14). Therefore, despite the agreed rejection of the modernist beliefs in objective truth, those who advocate for the postmodern enterprise have certain disagreements and differences. For instance,

Aylesworth (2010) noted the difference among the postmodernists along linguistic and cultural lines. He noted that the ideas and philosophies of French postmodernists are influenced by the structuralist revolution of Paris and writings of Marx and Freud. By contrast, Italian postmodernists show no engagement with revolutionary ideas but are fascinated by the tradition of aesthetics and rhetoric. These are some examples of the differences in perception on postmodernism. However, the differences cause no harm to postmodernism because one of the notable features of postmodernism is the rejection of compartmentalization, and it does so by blending diverse views and ideas (Prasad, 2002).

Connor (2004) divided the development of postmodernity into four stages. The first stage, called the stage of accumulation, extends through the 1970s to the early 1980s. This was the stage of infancy, as the concept of post-modernity was emerging in different disciplines and fronts. At this stage, the hypothesis of postmodernism was being developed with different views including the relation of consumer society, the weakening of meta-narratives, perceptions on postwar writing, and proposals on architectural postmodernism (Connor, 2004).

From the advent of the second stage, which Connor (2004) named synthesis, the different concepts under the umbrella of postmodernism clustered together. Parallelism became the prominent feature of postmodern thought at this stage of development, indicating that the different concepts were said to run parallel (Connor, 2004). The different views that accumulated at the first stage were now combined, which resulted in the acknowledgement of the concept of postmodernism as a general horizon or hypothesis.

Later on, in the mid-1990s, in the third stage of autonomy, the theory of postmodernity was established. At this stage, arguments about the reality of postmodernism started to emerge, and this served as a proof on the existence of postmodernism. The theory manifested itself in

almost all disciplines, and postmodernism emerged as a concurrence of low with high culture, opposing the traditional culture of modernism.

The fourth and last stage of the development of postmodernism was termed by Connor (2004) as a period of dissipation. He held that with the generalization of the theory of post-modernity, the idea as an ideal started to dissipate and now, after three decades of development, the theory is nearly at an end. At this point, it is important to justify the use of an about-to-end theory as a theoretical framework in the present study. The justification was provided by Connor (2004) himself, where he explains how the theory has entered into our lives and thought without our realization. He asserts that the theory has not yet lost its importance and has shown “extraordinary capacity to renew itself in the conflagration of its demise” (p. 1).

Online Education under Postmodern Roots of Constructivism

Some misunderstandings may emerge as to how postmodernism is distinct from constructivism. As a clarification for the issue, a reviewed literature suggests that it would be best to view postmodernism as a primary philosophy about the world. On the other hand, constructivism is viewed as a basic theory of cognition, which provides inferences on how the mind operates and how we understand things (Wilson, Osmon-Jouchoux, & Teslow, 1995). The roots of most constructivist perspectives about cognition can be traced back to philosophies of postmodernism, which deviates from rationalism, objectivism, and technocratic practices of contemporary society (Wilson et al., 1995).

Online education is an important concept that has spread during the era of postmodernity (Rye, 2008). The need of online education has arisen due to rapid innovation in all disciplines of life as manifested in the busy schedules of individuals. It comes as a challenge for some

professionals who still aim to broaden their knowledge to take some time off from their busy schedules and go to an institution to gain additional learning.

According to Rovai et al. (2008), online education is based on the philosophy of constructivism, which is defined as the construction of knowledge from a learner's interaction with the environment. Learning is basically defined as the process that involves a permanent change in behavior derived from experience (Judge, 2009). To enhance the learning experience and to know about the surroundings of any field of study, people contact experts of the field to help them understand the issues from a different angle. The experts teach their students by incorporating different methods of teaching that help them explain the facts and figures to their students. With the advent of online learning, learning has surpassed geographical boundaries, and teaching staff and students can interact on a global scale while enhancing their unique areas of interest (Regelski, 2009).

The contemporary online learning programs can be implemented at every educational level, ranging between elementary school to the post-graduate level (Evans, 1995). Institutions are embracing the communications and media technologies of late modernity to provide the students of today the facility of online learning as an opportunity to gain new learning experiences and qualifications. These communication and media technologies are the ones that have made considerable contributions to globalization (Evans, 1995) and thus the association between online learning and globalization is quite clear. Warf (2008) describes the term globalization as a comprehensive label for postmodern time-space compression.

While examining the association between online learning and globalization, it is critically important to take into account the economic dimension of the globalization that is taking place in international marketplace ideologies (Evans, 1995). Many modern social theorists support the

perception that globalization refers to the primary changes in the spatial and sequential forms of social existence (Scholte, 2000). The evaluation at this point in history reveals the most salient challenges and benefits within the context of a postmodern world with dynamic changes and unpredictable aspects such as (a) rising militarism and political tension, (b) fluctuating prices and foreign rates, and (c) the rapid proliferation of technology and innovations. All these aspects permeate the education sector, which must adapt to the global environment.

Power has changed hands among developed countries, with each competing for supremacy through (a) scientific and technological advancement, (b) business, and (c) economics. The countries are targeting the markets in order to gather skills and knowledge, and use these assets for effective social control. For this reason, social control has shaped the theories and ideas in business management and other fields, reflecting the ideal propositions from those with power (Masemann & Welch, 1997).

The concept of contemporary professionalism demands multidisciplinary approaches to create a positive impact through professionals who are trained in different fields. Thus, networking of professionals is essential for developing new knowledge because the synergies generate a higher level of power for individual professionals in their area of specialty. The diversity in a multidisciplinary manner is also preferred by many organizations to reduce costs incurred in hiring individuals with specialized skills in each field. For this reason, individuals actively employed sought more skills and training in more than one field to keep pace with the stiff competition and with the organization's increasing demands and trends. However, the common practice for working professionals to attend the traditional educational programs would be to interrupt their job-related functions, break the required work schedule, and handle

educational requirements before resuming work. Nonetheless, this is not practical in fast-paced, multinational institutions, which could easily find a replacement for inefficient employees.

Online education offers a flexible platform for working adults while increasing academic knowledge concurrently. Additionally, working professionals may have an equal need to specialize in an area of study, which contemporary online education addresses. Due to the continuous development in almost all fields of study, the course content in all the fields have to face continuous modifications in order to contain up-to-date information that can improve the learning experience.

In addition, Figure 1 below shows the characteristic “layers” of online education programs. For the purpose of teaching, the transfer of knowledge from the teacher to the learner critically depends on the teacher-learner interaction. This interaction forms the foundation and the entire understanding of online education in the contemporary world. The technical level is pillared on a platform that mostly consists of web-based applications that link to databases and course content. These links help the learners in accessing some important material that can be of use for them in learning new concepts. Other key features are online chat rooms and discussion boards.

The third level is attributed as the financial level because of the fact that it is concerned with the value-for-money element in each online education program. The value-for-money element is based on the fixed costs of initiating the course versus the overall gain for the institution upon running the course for a specific period of time. The costs for initiating the course include the collection of resources for the initiation of the program such as hiring a teacher or professor, arranging equipment for the program, and others.

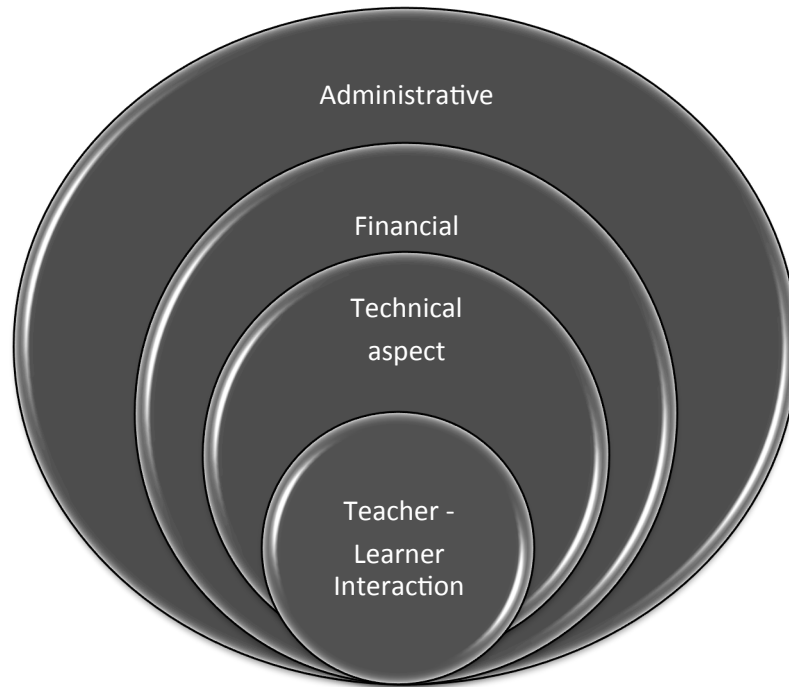


Figure 1. Characteristic Layers of Online Learning

The fourth stratum in the figure belongs to the administrative realm. It involves the selection, creation, and implementation of policies and procedures, finances, accreditation, and quality assurance of online education programs. Contemporary online education incorporates improvements in this framework, giving it a unique structure in the contemporary world that distinguishes its classroom boundaries and practices from the online education of previous years. High mass production and consumption, as well as the establishment of the management culture, are the key features of the post-modern society that make possible the implementation of online education administrative system in these societies (Edwards & Usher, 1997).

Bagnall (1994) noted that postmodernist adult education is expected to be diverse in nature and “to be open to the formative influences of cultural interests that have been suppressed or marginalized in modernity” (p. 10). He argued that this openness to the cultural interest might

result in the growing stress on the importance of aesthetic knowledge, at the cost of the decline in the importance of theoretical and technical knowledge (Bagnall, 1994). Therefore, online education based on postmodernist interests conflicts with the preferences of contemporary modernist education. From the perspective of post-modernity, online education challenges the interpretation of the production, structure, and dissemination of knowledge transformation within the economic, socio-political, and cultural dynamics of postmodern society.

Perspectives of Online Education that Impact the Postmodern Era

As an outcome of postmodernism, online education's impact is best summarized through an understanding of several perspectives of the contemporary world: (a) the technological perspective, (b) the political perspective, (c) the socio-cultural perspective, and (d) the economic perspective. These perspectives assist in creating a picture of how online education impacts the educational sector.

Technological Perspective

The technological perspective of online education refers to the content, legal aspects, and financial elements that are included in a technology-driven webplatform. Furthermore, based on research, the postmodern age utilizes a series of developments that add value to many fields, including education. The various technological improvements and enhancements that enable online education programs provide a positive impact in many aspects on the education sector in the enhancement of (a) curriculum development, (b) student evaluation, (c) accountability, and (d) management capacity.

The use of technology has transformed the knowledge into information (Aylesworth, 2010) delivered to the students in the form of learning packages. Usher and Edwards (2003) noted an important issue with regard to the technological impacts of online learning on education. They held that although the learning content could be delivered through using a new technological application, students could not learn from the delivered information unless trained to use information technology and make decisions about learning, which were formerly made by the teacher. The role of the teacher has thus, changed with this technological advancement. The role of providing content for learning has been adopted by the technological applications, and the teacher's responsibility is to guide students how to learn from this new method of learning.

Political Perspective

Online education provided an opportunity for students to study at any institution in different parts of the world. This helped remove political boundaries that exist in some traditional education systems, particularly with countries having political conflicts with their own institutions. In addition, the organizers of online education helped streamline the educational framework in many developed countries with strict government regulations and policies. Online education rationalized the need for licensing and quality assurance by the government and other regulatory bodies within the United States.

Furthermore, in a world that faces the threat of terrorism and political tension among developed countries, individuals in various parts of the world can remain marginalized due to the environment in which education systems are distributed. Online education, therefore, introduces the need for ubiquitous distribution of learning environments globally. This has positively led to the increase in professionals from different geographic regions around the world.

Socio-cultural Perspective

Cultural changes are another significant factor for online education in the postmodern era. Cultural change is an outcome when actors acquire new symbolic resources such as new concepts, knowledge, or skills. Implementing online training and new technologies are often considered a cultural change (Finney, 1997). As per Cohen et al.(2008), these cultural changes may include (a) globalization, (b) society's receptiveness to the distance education system, and (c) the system's framework as adapted in the postmodern era. In that sense, Bayrak and Boyaci (2002) asserted that education, as a change agent, has been reinterpreted on the web, which is a new component of postmodern society and characterized by the globalization process. As a result, "multicultural virtual learning communities have begun to emerge rapidly and globally all over the world" (Bayrak & Boyaci, 2002, p. 52).

Online education increases cultural interaction, which refers to understanding and self-awareness within the culture in the contemporary world. Ryan and Deci (2000) attributed the rise of social conflict to the inequitable distribution of resources such as oil, land, and water, which created a need to struggle for the few resources available.

Lyotard (1984) is one of the scholars who significantly contributed to the structure of the postmodern age. He suggested that the increase in the speed of information transmission is a significant characteristic of the postmodern age and creates a platform for local, cultural, and social elements to be propagated to other parts of the globe. Online education, therefore, opens up doors for cultural exchange, as individuals can selectively harvest the appropriate elements for their condition and situation.

Economic Perspective

Global macroeconomics addresses the outcomes and trends of various state economies around the world, including factors such as (a) unemployment, (b) equity, and (c) inflation. In the past two years, various factors have contributed to fluctuations in the global economy that have impacted the education sector. These factors include (a) fluctuations in oil prices, (b) fluctuations in prices and the stock exchange, and (c) recurrent yet unpredictable catastrophic events like tsunamis and earthquakes that have rocked Asia. As a result, most governments of developing nations have given educational programs much leaner budgets, while the bulk of the money is invested in defense systems and disaster preparedness. Therefore, alternative sources of revenue for the management of online education programs must be derived from various private institutions and international bodies, such as those affiliated with the United Nations. Although funding may be minimal, online education programs create a better cost management scenario than the traditional learning system (Willems, 2005).

One important financial dimension of online education is the shift from the current system of student financing based on regular tuition fees. The students does not need to spend money at libraries, parking lots, and study areas, but instead pay different costs related to computer, internet, and other technological requirements (Voorhees, 2001). Similarly, there is a shift in the financial spending of educational institutes providing online education from the expenses on classroom, libraries, and other related requirements to the technological expenses.

Online Learning: A Paradigm Shift

With the rapid advancement in the information and communication technologies in the last decade, the conception and application of terms like “information” and “communication”

have changed considerably. This change is evidently portrayed in a variety of definitions of “distance learning.” In the times of modernity, the phrase “distance learning” implied postal correspondence and telephone communications. With the recent advancements in computer and telecommunication technology, it has risen to a new advanced level. Through the use of email, the Internet, and video and audio transmission, better learning modules can be developed. These new technologies are either used as key constituents of the learning process or as the base of issuing instructions. A rapidly increasing number of learners desire and require schedules that are non-traditional and flexible, and online learning has the capacity to fulfill their needs in a more cost effective manner and in less time than traditional classroom learning (Morrison, 1996).

However, online education requires a paradigm shift for all stakeholders of education including teachers, educational administrators and managers, politicians, policy makers, and others (Bayrak & Boyaci, 2002). Questions have arisen regarding whether technological advances will resolve equitability and accessibility issues or create new ones. Certain economic constraints are also under consideration, as the implementation of online learning requires proper technological infrastructure as well as a shift from the traditional human resource management and training processes. Lemke (1992) suggested the use of less expensive and easily assessable technologies like television, fax, telephone, voicemail, and others. However, the shift in the education policies, management techniques, and administrative regulation is inevitable and should be given consideration.

According to Ryan and Deci (2000), human psychology has a way of attracting and retaining whatever is familiar rather than that which is strange. The world today introduces computing and computer courses to children from a very young age. This is attributed to curriculum change and development in addition to the increased availability of learning tools and

equipment. Curriculum change can be viewed as a result of the changes in the requirements of the job market and the technological projections in the future. As a result, students have prior, basic, and crucial knowledge of the computer and its benefits in their own lives.

This is quite different from the situation just 25 years ago when technology was quite a challenge as a tool for education, and having a computer in a classroom or school was a matter of distinction. However, today, computers as well as the Internet have been considered necessary components of the school system (UNESCO, 2005). According to research conducted by the National Center for Education Statistics (2003), approximately two-thirds of schools in the United States in 1996 had access to the Internet. However, by 2003, virtually every school, even those considered with high poverty rates, had internet access. The students' access to the computers has also increased greatly. In 1998, there were around 12.1 students per each institutional computer compared to 4.8 in 2002 (National Center of Education Statistics, 2003).

Today, technology is widely used in schools and both instructors and learners are utilizing its benefits. For example, computers are used to assist students with disabilities in classrooms by using new technologies like Braille printer and audible text readers. Furthermore, governments around the globe are taking steps toward expanding the use of technology in their countries by establishing standards for students and pushing the boundaries of conventional schools. In the educational sector, this technological advancement has resulted in the development of online learning, professional development, and testing programs. Opportunities for e-learning, where the internet is the base for delivering instruction, rather than the traditional classroom, are widely available to many students. In fact, state-owned virtual schools have already been established in 22 states, and there is at least one cyber charter school in 16 states (Edwards, 2006).

While the amount and variety of technology in schools continue to expand, research and development also seeks to tap into the potential of young professionals with fresh ideas and creative minds, especially in low-cost regions such as India and China. More and more young professionals have the entry-level requirements for most conventional jobs that had previously been a preserve of a much older age group. As per Ary, Jacobs, and Sorensen (2010), institutions with young professionals hold the advantage of fresh and revitalized thinking, especially if the individuals have been through the right education system.

Furthermore, the developed systems and ways of operation in the contemporary world create a platform for multiple innovations that are directed toward better curriculum development and content management. Innovations today are mainly institutional-based due to the large-scale synergies required for the development and support of educational systems (Ary et al., 2010). However, it is difficult to ascertain the impact of technology on students' achievement because the areas it directly impacts—high-order thinking, creativity, and research skills—are difficult to quantify. On the contrary, some studies have maintained that the use of technology under certain conditions can boost students' performance (Ringstaff & Kelley, 2002).

As an implication of postmodernism, online education's influence can be best summed up through comprehending several perspectives of the modern world. In an industrial perspective, the consistently improving and evolving technology enables online education programs to influence several aspects of the education sector, particularly in the improvement of curriculum development, student assessment, accountability, and management capacity. From a political perspective, online education helped remove the boundaries existing in some traditional education systems by providing an opportunity for students to gain learning from different institutions located in different parts of the world. In a cultural perspective, online education

paved way for more cultural interaction increasing awareness and understanding of different cultures.

Online education is an important concept that spread during the era of postmodernity. The primary reason for the growth of interest in online education is, of course, the immense technological advancements and circulation of information and communication, which provides teachers and institutions with unexpected possibilities. In particular, four remarkable technological innovations have delivered vital benefits to online educators, namely: enhanced personal computers, multi-media, internet, and digital video-compression. Combined with other technologies, these innovations make possible unforeseen instructive and logistical advantages including faster transfer of information in any location and time. The innovations also made possible independent learning, increased interaction, greater learner orientation, enhanced program quality, and better learning effectiveness.

Comparison of Face-to-Face and Online Education

Kashif (2009) noted that the advent of online education has filled obvious gaps in traditional face-to-face education. One of these areas is assessment. The traditional educational system's assessment process requires greater scrutiny and more materials, which require storage space and capacity and necessitate additional cost (Restauri, 2003). Gottwald (2005) showed that needing additional resources, especially money, hinders learning centers; these costs are directly transferred to students through their tuition fees. Conversely, one might assume that online education uses very few multiple-choice assessments due to the level of assessment required in higher education. As noted by Pribesh et al. (2006), an assessment should encompass unstructured questions in order to facilitate a keen and detailed analysis of the students'

capabilities and knowledge, even when the assessment is administered remotely. As a result, it seems that face-to-face education is best for lower levels of education, primarily to create a school-environment mindset.

From a lay understanding of online education, the mechanisms used as building blocks to the program are all an extension of the traditional model of education in both content and form. This implies that the flow of education or information from the teacher downwards is the same in online learning. This, therefore, qualifies the fact that the form or method used in transfer of education content remains the same with slight changes on aspects such as the interface between the teacher and student. The content adopted in the online education program is mainly an extension of the content within a field of study.

An interpersonal interaction between the instructors and the students does not automatically occur in online education. Mancuso (2008) reported as a disadvantage that online learning does not allow students to obtain immediate answers to their questions from the instructors. Unlike the face-to-face educational system in which instructors instantly answer questions, learners in online programs must wait, sometimes for hours, before receiving responses from their instructors. However, Mancuso noted, many on-campus students have commented in course evaluations that their level of interaction with instructors in face-to-face courses was also lacking. In fact, some students have noted that their teachers focused more on the needs of online students, causing their face-to-face teaching to suffer. Specifically, teachers' online workloads reduced dialogue and peer cooperation during on-campus lectures. With the constantly increasing numbers of online education students, maintaining individual communication has become problematic. As a result, some teachers have decided to use an internet platform as their only form of communication (Popov, 2009).

Scholars have also maintained that some qualities of traditional education could be incorporated to improve online education. For example, Gottwald (2005) showed that some elements of face-to-face classroom conditions, such as personal discussions through online meetings, could be used to build rapport between faculty and students. Further, instructors can improve the process by offering easily retrievable logs of the material covered in each classroom session. Retrieval of this type of information is actually made easier by the online education platform since it operates on a client-server basis (Kashif, 2009).

In terms of time involved, the course platform seems to influence the type of activities that require a student's time, not necessarily the amount of time required to complete them. A study by Howland and Moore (2002) on students' perceptions as online learners stated, "Online courses require at least the same amount of work, if not more, for both students and instructors than face-to-face courses" (p. 191). Faculty has also commented that it takes more time and greater effort to teach online courses (Allen & Seaman, 2006). In fact, the time requirements to complete an online course may increase due to the nature of electronic communications, such as e-mails, discussion boards, chat rooms, and course assignments. These time requirements can cause frustration in the process of taking examinations and reading course content (Smith, 1998). At the same time, according to Groulx and Hernly (2010), the time taken to complete online courses is usually shorter than students expect. Regardless, both modes, face-to-face and online education, impose stringent demands for the fulfillment of course requirements and, therefore, necessitate a significant time investment.

One of the greatest challenges to online education is the coordination of project work (Arbaugh, 2004), which can be difficult in face-to-face courses and near impossible in online education courses.

Studies of Effective Online Teaching and Learning Methods

In Mancuso's (2008) study of 22 in-service teachers, each adult learner had unique motivating factors, perceptions, and challenges related to their experiences with online learning. These motivating factors, perceptions, and challenges were largely shaped by the internal and external environments of online courses. Mancuso's study sought to understand the students' motivating factors, their perceptions of online learning, benefits gained from online learning, and the challenges of online learning.

Daly et al. (2007) report show one teacher who never expected this learning experience to influence her teaching life eventually gave recognition to the existing distinctions between the different spheres of life. The teacher declined to acknowledge the importance of technology in learning until she started using the Internet for social purposes, especially sending and receiving e-mails. This became a daily routine, and consequently turned out to be an integral part of her life. Practice enhances one's association or relationship with other people as well as a phenomenon. The online learning experience is disseminated by an individual's need to share ideas and to communicate with others (Daly et al., 2007, p. 454). This means that the online learning experience requires gradual adjustment among the students and the instructors alike.

With the increase in online-based studies and courses, the need for research and development in the area of online education is significant, especially regarding students' perceptions of online education. Wilson, Cordry, and King (2006) cited these perceptions as instrumental in the evaluation and further penetration of such systems into students' traditional modes of learning. Rovai (2002) argued online teaching methods seek to bridge the knowledge gap without requiring physical relocation. Reaching this goal requires proactive course

management, which involves helping students understand the dynamics of their courses more thoroughly and promoting relationships between instructors and students. Online learners can successfully learn through online instruction if it is accompanied by continuous, proactive employment of appropriate management strategies and by a strong rapport between teachers and students (Coyner & McCann, 2004).

The context in which online education operates requires instructors to communicate with their students constantly. The object is to design course outlines, monitor the submission of assignments, and inform students on arising issues in a timely manner. Numerous strategies to accomplish these goals can be implemented, depending on the specific context (Ragan, 1999). Ragan noted that the success of online education largely relies on informing students and faculty of the support methods (technical or instructional) so that they can adequately practice them. The objective is to allow online learners to take responsibility for their own learning experiences, thereby freeing instructors to focus their time and energy on building a truly active learning experience.

Online Deaf students have reported that, regardless of class size, the essential component of successful teaching and learning is communication with the instructor. Without this communication, the learning process is isolated and delayed. Obviously, defining and communicating to prospective online education students “what is to be taught, and what is to be learned” (Ragan, 1999, p. 16) addresses the tentativeness of each participant’s role and responsibility. The competence of this communication improves with experience. Ragan affirmed that the adoption of new pedagogical strategies, including the use of electronic communications technologies, is essential for online education success, especially since online education reduces professional and personal interactions (Unal, 2005). Discussion boards, chats,

and periodic video conferencing can help bridge the gap, but they do not comprehensively cover the need for interpersonal communication and interaction. However, if properly utilized, webinars can significantly help students interact with peers and professors.

Various other online education studies have investigated effective teaching and learning methods. Pribesh et al. (2006) conducted a preliminary study comparing online and face-to-face cohorts in a school library media specialist graduate program. The researchers attempted to understand the students' different experiences, prospects, and limitations in both programs. The study found several barriers to effective online teaching and learning in online education programs, including (a) technology problems, (b) segregation of students, (c) limited access to library resources, (d) the pressures of personal commitments, (e) inflexible instructors, and (f) indistinct course requirements and teacher expectations. Tallman and Fitzgerald (2005) found that for students and instructors involved in distance learning courses, "One of the most difficult issues with online teaching has been to make the clarity of assignments such that students understand what they need to do" (p. 27).

Pribesh et al. (2006) exposed a wide gap in the types of assessment tests given. It affirmed that traditional assessment tools are limited in the online environment; hence, they need to be replaced. Most examinations involve multiple-choice questions and their timing does not allow students to demonstrate their intuitive understanding of the topic and source content. Frederickson, Reed, and Clifford (2005) contended this problem occurs because online learning platforms are expensive to maintain or replace, and over time, the inflexible nature of such systems creates a deep complacency in the learning center staff who administer the system. Gottwald (2005) surveyed students to determine whether online instruction facilitated easy learning, enabled the students to achieve their educational goals, and facilitated interactive study

sessions similar to classroom discussions. Gottwald also intended to find any potential obstacles that made online learning difficult. He found that flexibility is the prevailing factor in determining the success of online learning. However, the lack of face-to-face contact between instructor and learner poses a significant challenge. Gottwald concluded that personal interaction and frequency in communication are “highly significant” (p. 43) in the online education process.

Additionally, Tucker (2001) argued that a teacher’s presence is very important for students’ learning, thus the teacher must be present for successful learning to occur. Finally, Glass and Sue (2008) argued that, overall, there is no clear distinction between students’ satisfaction with online education and web-based learning and traditional students’ satisfaction with face-to-face studies. Broadly, the authors argued that some students prefer varied instructional strategies. Specifically, their study showed that students have mixed opinions about online discussions. The students understand that participation in discussions, as a course requirement, seems to positively affect their learning; however, they have a strong preference for practical exercises as a teaching method.

Benefits of and Motivational Factors for Online Education

Motivation is defined as “a person’s degree of willingness to act toward a goal” (University of Kentucky, 2006), and can be categorized in two types: intrinsic and extrinsic. Intrinsic motivation involves processes like curiosity and achievement, while external motivation suggests rewards like promotions and recognition. For online studies, two characteristics of motivation are value and expectancy. Value refers to the usefulness and control of the task and its reward, while expectancy refers to the degree of probability that the learner can complete the

task successfully. In a study on motivational influences in self-directed online learning, three types of intrinsic motivation to learn were identified: “motivation to initiate, motivation to persist, and motivation to continue” (Kim, 2004).

Individuals have accepted online education based on certain benefits that have motivated them toward it. The choice of online education is primarily based on two main factors: The convenience of study and the possibility of saving time and money by avoiding travel. Five out of every seven students in online classes have active employment outside class. Hence, online education usually becomes a part-time activity (Gottwald, 2005). As McMahon (2009) indicated, online education is most commonly utilized as a tool that aids in completion of multiple activities within the same period and at the greatest convenience.

In addition, Beldarrain (2006) determined that part of the success of online education derives from its lower fees, customization of courses, and the opportunity for student interaction using emerging technology tools. For these reasons, online learning is widely considered relevant to modern society, in which most individuals prefer customized services and working with others rather than in isolation.

Further, tuition fees for online courses are generally less than fees paid in the traditional education system, and the elimination of housing and frequent travel expenses is considered an indirect benefit for both instructors and students. Groulx and Hernly (2010) showed that each student saves an average of 350 dollars per course through the reduced tuition fees of online classes. This economic benefit attracts students, especially those who have just completed undergraduate studies. For all fields, the benefits are most commonly the motivational factors. However, during the initial stages of online education, the learner should take note of whether the amount of time and money spent in such programs is worth the benefits received.

Learning motivational strategies are required in contemporary education models such as online learning. In general, the motivation of students toward online education is measurable qualitatively and is mainly dependent on the self-determination levels within the individual, the availability and knowledge of the facilities offered by online education, and the professional and social environments surrounding the individual. These motivational factors can necessitate a shift in the strategies and models of learning used traditionally in institutions of higher learning (McMahon, 2009). This shift includes a change in the admission patterns, the duration of study, and the patterns of graduation for students. The teaching team also requires a change in content delivery so that it still fits the market while meeting students' expectations.

Students' lack of interest in online education is a limiting factor to the growth and awareness of online education in most of the courses undertaken in higher education (Bourne & Moore, 2005). The lack of interest eliminates the probable need for motivation or benefits of an online-learning program to be identified. The factors that control motivation also control the challenges that surround the administration of online education. These factors include the Thorndike Law of Effect and the Law of Exercise, in addition to other theories such as those proposed by Dewey, Piaget, and Vygotsky. Consequently, the motivational theories that form the core of motivation towards online education include behaviorism, cognitivism, and humanism. Proponents such as Ryan and Deci (2000) suggest self-determination and competence drive motivation and are associated with more engagement, better performance, lower dropouts, higher quality learning, and better teacher rating, among other outcomes in education.

The major concern is whether students' lack of motivation should be blamed on the students or on the environment to which they are exposed in the schools. Regarding this,

questions can arise: Is the integration of better and more appropriate technology likely to cause an increase in the intake levels for online students? Does the learning environment sustain an increase in interest and motivation toward online education courses in the contemporary setting? It seems that that the availability of information about distance education courses or programs would be the guiding force to motivate prospective students toward enrolling in distance education.

Students' and Teachers' Perceptions of Online Courses

Students and teachers have offered a variety of perceptions regarding online education. Wilde and Epperson's (2006) study showed that students perceive self-discipline, motivation, flexibility, technical experience, communication, and organizational skills as contributing factors to their success in online learning. On the other hand, instructors need similar skills, in addition to a dynamic presence and knowledge of both the subject area and information technology. Some students prefer interacting in web-based classes because they feel more comfortable communicating in such an environment. Extensive discussions often dominate the bulletin boards and aid in the understanding of most learners.

Another perception is that an online-learning program's focus should extend beyond merely covering the syllabus, and that instructors should incorporate multicultural aspects into their study plans in order to meet diverse interests. Hsu's (2004) survey of in-service teachers at Ohio State University revealed a number of issues inherent to online learning, especially multiculturalism. Multicultural knowledge is remarkably important when students form a class that is representative of cultures from around the world. At the same time, it may be difficult to validate diverse cultural interactions in online education. Students can easily impersonate other

people or assume false identities, especially in chat and discussion forums (Ary, Jacobs, & Sorensen, 2010).

A third perception is that online education can enhance students' knowledge of computers, which will help them after completion of their studies. Montgomery (2000) claimed that technological advancement has introduced new and better ways of teaching and learning. The introduction of computers, software, USB storage devices, and other technological learning tools has improved most learners' technological knowledge. The computer is the essential technology of the modern world and is used in almost every profession.

Technological advancements have drastically changed traditional methods and perceptions in many areas of life. It is time for students and instructors to accept those changes, both theoretically and proactively. A situation that Daly, Pachler, Pickering, and Bezemer (2007) described in their study is not uncommon. A teacher who was reluctant to use online resources for teaching immediately noticed their benefits and began using them in her daily life. Daly et al. (2007) established that the novelty of technology and the difficulty of sustaining the programs pose significant challenges to both instructors and students. The adjustment factor is directly associated with flexibility and convenience in terms of time management. Some teachers feel insecure and vulnerable when applying technology in online education programs. Most likely, that novelty represents an intermediate learning situation in which both teachers and students should be able to develop abilities to use technologies for learning.

Technology is an essential component of learning activities in many parts of the world. It offers many benefits to the educational process, such as easy access to study resources and flexibility for learners and instructors. Although flexibility, convenience, and self-paced assignments are appealing, they necessitate self-discipline, motivation, initiative, and technical

skills to succeed in online learning (Bowman, 2006; Braun, 2008; Daly et al., 2007; Edmonds, 2009; Gottwald, 2005; Howland & Moore, 2002; Hsu, 2004; Leisure, 2007; O'Malley & McCraw, 1999). The online learning experience is enhanced by an individual's need to share ideas and communicate with others. However, the experience requires continuous refinement for both students and instructors.

The learning process rarely proceeds flawlessly; one problem that online education students and instructors have perceived is the unreliability of the Internet in some parts of the world. This issue is a serious one, since the Internet is the primary tool of the online education process and lack of Internet dependability may cause instructors to lower their standards. For example, if a student fails to meet an assignment deadline and argues that he or she lacked internet access, the instructor may choose to accept the excuse, since there is no evidence that it is not true. Barriers to communication between instructors and students can also arise as a result of unreliable internet service. In some instances, online learning is disrupted by frequent breakdowns caused by losses of network connections, audio feeds, and video connections. In other instances, the instructor may not be able to see the classroom clearly or can only hear distorted voices. Online learning may fail due to such events, most of which are beyond the instructor's control.

Finally, students have perceived that the success of online learning programs is influenced by distinct characteristics of the relationships between students and instructors (Wilde & Epperson, 2006). One commonly cited issue in this relationship is barriers to communication. For example, online education students need the opportunity to ask their teachers questions after lectures without risking exposure on public e-space, but the interactivity of personal electronic communication is somewhat limited. This problem is well recognized in international online

programs (Hudson, Hudson, & Steel, 2006) and among students in rural and inaccessible regions (Ala-Mutka, Punie, & Ferrari, 2009).

Barriers, Challenges and Criticism Related to Online Education

As previous sections have illustrated, students' experiences with online education vary. Some are pleased with the flexibility and convenience that such programs provide (Gottwald, 2005; Wilde & Epperson, 2006). At the same time, others are dissatisfied with the unconventional nature of online education in general and of online education teaching methods, technological problems, and instructor limitations.

The unconventional nature of online schools is not well received in some segments of society. Gudea (2008) showed that people younger than age 34 are easier to convince of online education's validity and effectiveness than older generations. Teachers are also threatened by the introduction and use of online systems, as it creates job insecurity and a need for more training. In addition, unconventional teaching methods have been cited as an area of student dissatisfaction and a barrier to online education. A survey carried out by Unal (2005) revealed a deep level of dissatisfaction among online education participants due to unconventional methods of teaching classes and transferring knowledge. In other words, students expect to be taught via conventional methods (Unal, 2005).

Occasionally, coordination between course content and required skills is insufficient. Casey (2008) explained that online classes in the applied sciences require laboratory tests and practical exams as well as the study of theories. Thus, a gap is created between the students' rapid advancement in theory and their slow progress in practical performance.

As a result, students might learn in their own preferred ways rather than in the most beneficial and effective manner due to the flexible nature of online teaching and learning.

Therefore, educators should identify the strengths and weaknesses of various pedagogical techniques in order to select instructional strategies that will enhance interactive learning (Steinman, 2007). The instructor should establish an interactive learning environment by using approaches that engage students to be active in the learning process. The students become responsible for the benefits gleaned from the education program, while the moderators simply provide a platform for interaction.

Thompson and Campbell (2009) also valued the input of moderators and participants when perfecting an online teaching model. They related the perceptions of these programs to the incorporation of more capabilities in handling and disseminating information to students. Similarly, Ary et al. (2010) recommended the implementation of flexible but structured learning sessions. The authors also argued that the experiences of alumni from such online courses should be considered when shaping the interactive learning platform from the evaluation and perceptions of the students.

A second obstacle to online education is the plethora of issues related to technology. In a study by Bowman (2006) on the effectiveness of online education, one participant explained that she felt comfortable using a computer to study but felt frustrated whenever the technology failed to work properly. Other students feel troubled by a sense of disconnection and independent inconvenience (Howland & Moore, 2002). Among students who articulated negative feelings about online course experiences, “many revealed the same mental model for an online course as for a face-to-face course” (Howland & Moore, 2002, p. 187). Some students articulated a need for better planning and feedback from their lecturers. They appeared less able to rely on self-assessments of their knowledge. The need for self-responsibility in online learning caused the students to feel ignored and isolated. This requirement for self-responsibility prompted Howland

and Moore to recommend online classes for higher education. Students typically have a greater sense of responsibility and commitment to finishing their assessments and course content without much supervision. Additionally, advanced students are better prepared to find other resources when searching for information.

Some learners also struggle to learn new technologies. Most people participating in online education are adult learners, and many of them begin using computers only when they begin online courses. This barrier obstructs their understanding of web-based courses (Bowman, 2006; Mancuso, 2008). As Edmonds (2009) pointed out, many online graduate learners are Caucasian, female, married, and have an average age of 40 years old. These learners face “technology problems and the lack of technical support, adding to their frustration when learning online. Some studies found feelings of isolation, using new technologies, and restricted socializing online were barriers for online graduate learners” (Edmonds, 2009, p. 3).

Finally, most first-time online education students lack confidence and trust in their educational institutions because the virtual nature of online learning makes it difficult to verify a school’s quality. Cyber-crime and the increase of unethical internet-based businesses have created a situation in which online education participants must offer online course providers the benefit of the doubt (Walls, 2008).

A third barrier to online education is instructor deficiencies. A survey by Kritt and Winegar (2007) found that online discussion boards are rarely furnished with up-to-date information. The online learning environment must include a social presence among participants in teleconferences and computer-mediated communication. From the student perspective, social presence is a critical part of a high-quality online learning experience (Cobb, 2009). The role of

the instructor is necessary for creating a sense of online community and improves social presence among learners.

Learners also complain that some instructors possess limited online skills, fail to explain course expectations, and give tardy feedback. Hines (2008) agreed with Edmonds (2009), arguing that many instructors new to online graduate teaching lack knowledge of distance education's complexity and tasks. After the introduction of online education, some instructors must combine teaching and managerial roles, and combining these tasks threatens quality and productivity. Samaras et al. (2008) showed that the introduction of online education causes uncertainty for staff members in most school environments, typically because of teachers' lack of skills. Moreover, the implementation of online courses requires, for both teacher and student, a greater understanding of the system's capabilities and operation (Bourne & Moore, 2005). Teachers need access to development programs that enhance their ability to deliver online education. Samaras et al. (2008) suggested that schools incorporate teacher development courses into their standard personnel requirements. Through several sessions, the participants must learn the system platform before they can use the course content constructively. DuVivier (2008) explained that when uneducated teachers guide the participants and appropriate procedures are lacking, students face a huge deficit in skills. The net effect is a reduction of the students' ability to comprehend the resources made available for constructive learning.

Lee and Winzenried (2009) recommended that teachers and students prepare for technological improvements before these technologies are implemented. This method would increase security among teaching staff and increase opportunities for students to explore and improve their learning abilities. Providing access to resources and facilitating the use of those

resources is difficult in online environments because most online platforms are customized for individual learning needs in specific fields of study.

A careful consideration of the chosen type of technology can lead to positive results and attitudes. Beneficial attributes of technologies include flexibility, convenience, and the ability to allow self-paced learning. Online education students must develop self-discipline, motivation, initiative, technical experience, and the ability to adapt to newer platforms and trends. Online education requires continuous assimilation. After the students and teachers become comfortable with a single mode, then other methods can be implemented. In this way, a complex system can be instituted gradually, thereby reducing the number of hurdles and optimizing available resources (Howland & Moore, 2002).

A major question still lingers in the minds of academicians that would probably require the justification of an independent philosopher. Why is online education continually used as an effective tool for mass training for specialized fields worldwide? It is important to note that education in the contemporary world and job market is highly dependent on specialization and a majority of the specialists and technologists produced from education systems have very limited knowledge in any other field. Online education offers creative elements to the specialization in fields in addition to a collectively harmonized culture that encourages collaboration among specialists. Thus, online education instills the culture of collaboration among specialists, especially for those with a bachelor's or master's degree.

Additionally, the direction of funding for most online education initiatives is much dependent on the content being offered by its institution. Most institutions that offer technological courses are better placed at soliciting funds from industries due to the mutual relation that exists within the industry. This is very effective in spelling out continuity in online

education programs and systems. For this reason, online education is here to stay and would only restructure depending on the environmental variables that affect it.

Despite the challenges of online education, the number of online learners is still increasing. This is probably because certificates from online programs provide students with opportunities to increase their incomes and economic statuses. This increase in enrollment is also fostered by certain key elements of modern society, such as the need for skills training rather than just knowledge, people's desire to strive for professional growth through higher education, and the appeal of online courses for nontraditional students (Allen & Seaman, 2007).

Standards of Evaluating Online Education

Online education has been molded by assessments, research, and evaluations. The standards that are implemented on a regular basis require constant evaluation to measure online courses' success and effectiveness in molding the ultimate professional. Nevertheless, many current trends in the models and methods used for evaluating distance education have collectively formed an acceptable standard of excellence to which all courses should adhere (Thompson, 2004).

Certain elements must be included in the online education course content and support, primarily for graduate students. The increase in the number of online courses and learning centers worldwide has created a need for better evaluation of these services. Additionally, online learning needs a standard mode of operation for all stakeholders in education. Hebert (2007) suggested the evaluation of online education should ultimately create more efficient and effective platforms for students' connection to these services.

Deaf Students through Online Education

The inclusion of Deaf students in the mainstream classroom is a dictatorship for Deaf individuals. By including Deaf students in the mainstream classroom, schools deprive Deaf individuals of their opportunity for quality learning despite its proposals of interpreters and rooms of resources (Komesaroff, 2005). These Deaf individuals will never stop fighting against inclusion in the mainstream classroom, in which the needs of the hearing students are prioritized (Komesaroff, 2005).

It is expected that since the majority of the students in schools are hearing individuals, the teacher's style and the content being taught are being customized for the hearing students. The inclusion of Deaf students in the mainstream classroom should not be discussed based on the existing models built by hearing students. The answers should come from bilingual college schools with Deaf professors who are creating schools that boost the development of Deaf individuals. The models of inclusion of Deaf students in the mainstream classroom serve as passing alternatives for cities that have few Deaf individuals and do not possess a sufficient quorum for open bilingual schools. The inclusion of Deaf students in the mainstream classroom is the convenient model for the hearing students and it is impracticable for the Deaf culture (Komesaroff, 2005).

It is an illusion to assume that the inclusion of Deaf students in the mainstream classroom will equalize the academic performance of hearing and Deaf students. Moreover, the inclusion of Deaf students in the mainstream classroom neither focuses on educating Deaf students nor respects the deepening of instruction of English as a foreign language for them. The Deaf college students dream about a bilingual school where can they study with Deaf professors and hearing

students who know how to speak ASL and where the teachers are concerned about teaching the disciplines of the curriculum well beyond Deaf history.

In the present time, the educational system of the inclusion of Deaf students in the mainstream classroom is going to build a new society based on the change of conscience and on actions of social structuring. This will create a fulcrum in the celebration of differences, the right to belong, the valorization of human diversity, human solidarity, the equal importance of minorities, and a citizenship with quality of life. The teachers defend the inclusive society as an ideal, a utopia, without claiming that the schools need everybody joined in agreement (Power & Hyde, 2002).

The inclusive society fights against discrimination and prejudice. Deaf individuals also fight against prejudice, and defend equal rights. Bilingual schools need competent Deaf professors to teach in the natural language of Deaf individuals. Unfortunately, the Deaf continue suffering from prejudice and exclusion from mainstream society, which is disrespectful to their language, their form of learning, their identity, and finally their culture. That culture is developed by fighting to defend the Deaf communities and by militants that support the Deaf resistance, through protests and postures that differentiate from the dominant political ideology.

The education of Deaf students, as well as other students with specific educational needs, is often the subject of many controversies (Powers, 1996; Powers, 2002; Marschark et al., 2002; Giorcelli, 2004; Freire, 2007). The two factors that inevitably appear when the idea of the inclusion of Deaf students is undertaken are the language and the identity of the students. Those who are opposed to the inclusion of Deaf students in mainstream classrooms argue that it is difficult to develop curriculum around sign languages. It is also difficult for the Deaf children to form an identity inside a classroom where the majority of the students are hearing individuals

(Corker, 1994; Stinson & Lang, 1994). The implied problems lie in the lack of professors who specialize in sign languages and utilize it effectively in the teaching and learning processes for these students. The problems also lie in the difficulties around interacting with the hearing students, the professors who do not share the same communicative code with them, and in the difficulties of continuing the learning rhythm of their hearing counterparts in the classroom.

Nevertheless, the debate on inclusion has evolved, and the questions related to the physical place should be distinguished from the ones that have to do with the social and emotional milieu (Powers, 1996; Powers, 2002). What is important is not the physical place in which Deaf students are situated, but the capacity of the educational systems in their totality to find solutions adapted to the characteristics of the Deaf students that permit their academic, social, emotional, and linguistic development (Antia, Stinson, & Gonder, 2002; Powers, 2002; Giorcelli, 2004). These concerns are important in the planning of educational services for Deaf students, and especially in the consideration and the acceptance of the double and complex linking of Deaf people as a collective group with the company of hearing individuals. Because of this, the family of the Deaf students, the school, and social services should offer them opportunities to develop abilities and competencies that permit them to grow as capable and confident people who act more autonomously and as satisfactory as possible, both in social and academic contexts.

One of the major concerns related to the education of Deaf students is cultural and linguistic diversity. There are existing debates around the education of Deaf students and the great variety of existing educational models. The investigations carried out by psycholinguistics, particularly in sociology and in psychopedagogy, have caused a deep change in the clinical-therapeutic perspective of deafness from having deficits as the basis toward a sociological

concept based on its capacities (Moore, 1996). Consequently, new pedagogical approaches were introduced involving, among other things, the incorporation of sign languages in the education of Deaf children and adults in a new role inside the school environment. It is the perspective of the Deaf students' attitudes and existing practices that creates the difficulties and the obstacles that impede or diminish the possibilities of learning, as indicated by the experts.

The polemics that crosses the history of the education of Deaf children has been very polarized between two concepts, the audiological and the sociocultural ones. Both of these imply the social, cognitive, and linguistic development of Deaf people and consequently, their inclusion or exclusion in the community where they live. The audiological perspective leads to the analysis of the different degrees of auditory loss, the locating of the deficits, and use of the technical aids, such as earphones and cochlear implants that can compensate or alleviate the auditory losses. On the other hand, the sociocultural perspective defines Deaf people as neither lacking nor weak, but instead as people with capacities to learn and grow.

Deaf individuals share a similar language, a history, and a culture that confers on them an identity that should be accepted and recognized in a society that fights for equality and diversity. The solution to the education of Deaf students should not be carried out only through a single perspective, given that the reality of these students, as that of any student, is multidimensional. Therefore, there should be different plans or dimensions by adopting a multidimensional concept based on the auditory loss of the Deaf students, from which their difficulties in different areas in oral and written language are derived.

Many Deaf children and adults, by different reasons and circumstances, are identified as repositories of a positive identity. These Deaf individuals benefit neither from the attempt to minimize the consequent limitations of their auditory deficit nor from the attempt to take

advantage of the scientific and technological advances that enormously enlarge the communicative capacity of the Deaf people. Such technological advances include mobile telephones, videoconferences, decoders of television that permit the subtitles, and other instruments that can rehabilitate auditory functional capacity, such as digital earphones and the cochlear implants.

Far from being unable to learn a language, Deaf people are defined as bilingual and bicultural. They can understand both characteristics in the sense that they are able and expected to learn two languages, which are the sign language and the oral language that they use in their community. These Deaf individuals need to feel that they, as members both of the hearing and the Deaf community, are assets since they are capable of being such.

The education of Deaf students has revolved and continues to revolve around the debate on which is the most adequate educational model. This debate involves the deliberation of the communicative modality regarding the advantages and the disadvantages of the utilization of sign language. In addition to this is the debate in the educational context, which argues between mainstream school and a special one.

Among several factors, including educational concepts, available resources, and private educational needs of each student, the most adequate communicative modalities depend on certain considerations. There is the ability of Deaf people to acquire the language of the hearing majority in the community or, on the contrary, their competence in the management of the language can be competent in a minority language, which is sign language. Thus, two well-differentiated tendencies exist. Deaf individuals can be either monolingual or bilingual. Historically, this existing debate in the education of the Deaf people is traditionally known as the controversy between oralism and manualism.

It is certain this educational debate has been ongoing for two centuries, and that, as yet, the elements and the context of the debate are not resolved. These elements include the technological development, cochlear implants, knowledge of sign language, attitudes of the majority in the community toward differences, and accumulated experiences of deaf individuals. However, the current configuration of these elements and context are completely different from those a few years ago.

The monolingual foci collect those positions that consider it more adequate to teach Deaf children the spoken and written language of the hearing majority in the community. The objective of this is to establish interactions with the hearing population, to use them as an instrument of learning, and as an access point to the school contents. The teaching of oral language can be carried out through different methods or strategies, which can be strictly audio-oral or with the employment of complements that permit the viewing of certain structures of the oral language. The latter includes morpho-syntactic, bimodal, and phonological words.

What the bilingual foci present in the case of the students with serious hearing losses is the indispensable employment of sign language with educational and communicative purposes, aside from the learning of oral and written language of the hearing majority. Through the work with these two languages, Deaf students will obtain inclusive education even more. Regarding this, there are four aspects that need to be emphasized. First, sign language has to be used as a tool of communicative interaction and language of teaching. Second, a specific curriculum area for the sign languages has to be incorporated. Third, the analysis of the educational contexts in which bilingual experiences are taking place should pay attention to the need to modify and to include new plans of work that enable the undertaking of the challenge to work with two

languages. Fourth, there is a need to incorporate competent Deaf adults in the schools for the tasks related to signs languages.

Another debate revolves around how to locate the most effective educational context to develop inclusive education of high quality, which is stated as a right of Deaf students (Foster et al., 2003; Giorcelli, 2004; Hung & Paul, 2006; Marschark et al., 2002; Powers, 1996; Powers, 2002). Some authors, such as Stinton and Antia (1999), Cawthorn (2001), and Marschark et al. (2002), argue that the inclusion can be put in better practice when the Deaf students respond to ordinary classes or hearing students are regulated in all the aspects of the school life. On the other hand, other authors, such as Foster et al. (2003), propose that the inclusion can only be carried out when the education of Deaf students is produced inside specialized programs that are separated from hearing students. Thus, responding to the Deaf students' needs of communication, language, socialization, and cultural identity will be an improvement, which indicates that the model of bilingual education in special schools would be inclusive if the Deaf students are permitted to participate in national events during the years of obligatory schooling (Hyde, 2004).

The educational politics should take into account the individual differences, the different situations, and the importance of sign language as a communicative medium for Deaf people. For example, all Deaf individuals should be granted access to the teaching of sign language, which facilitates the specific communication needs of Deaf individuals, whether in special schools and classes or in special units inside mainstream schools. These positions represent the extreme points of a continuous debate that starts from the complete integration of Deaf and hearing students in regular classes to the total separation in classes or in specific units with an extensive rank of variant among them. It is evident that each one of these educational contexts presents dilemmas between advantages and limitations.

It is essential to have alternatives that seek to harmonize the profitable elements of both contexts and to minimize the disadvantages under the perspective. Inclusion is not only a place but also, in essence, an attitude and a value of deep respect of the differences and commitment with the task, which are opportunities and not obstacles (Powers, 1996; Ainscow, 2008). Therefore, the educational experience accumulated in years shows that the educational contexts, which are specific and regular, offer high-quality education to a good number of Deaf students. The issue is not in the discussion of whether Deaf students should be educated in mainstream classrooms or in special centers. Rather, it is more important to discuss how a determined school, be it mainstream or special, should respond adequately to the educational challenge that confronts these students by extracting the advantages of each one of the contexts.

A high-quality education for Deaf students should favor access to learning on equal terms to their hearing counterparts in school. This implies that the school needs to enable Deaf students to truly understand the situations of the classroom and participate in it, which requires them to employ sign language. This is in favor of the situations that enable the learning of the oral and written language and the establishment of friendly relations between Deaf and hearing individuals, which promotes the harmonic development of their personality, helping the students to grow in a bicultural environment.

While it is difficult, it is necessary to establish equilibrium among the things that should be common and shared with the assembly of students and those that should be specific in the teaching of Deaf students. Therefore, there is still no existing single context that can organize an adjusted solution to the educational needs of students with serious losses of hearing. When educating Deaf and hearing students together, it is fundamental to have the simultaneous

participation of two professors in the classroom, one of whom should be competent in sign languages.

Another identity of these mixed educational contexts or combined schooling consists of grouping an extensive number of Deaf students in the school and in the classrooms as opposed to some experiences of integration in ordinary contexts. Without renouncing the utilization of the technical aids to the specific supports that the students need, the experiences of combined schooling show that it is not easy to consider other plans, but it is also not impossible. It is not a matter of presenting prescriptions for more inclusive teaching, but of presenting them as some of the main ingredients (Ainscow, 2008) that are needed in the preparation of the educational projects to move toward quality education for all and with all.

The purpose of this hermeneutical, phenomenological study is to provide a better understanding of how Deaf students perceive online learning by researching lived experiences and bringing attention to needed accommodations that might bring online learning up to an equal learning standard for both the hearing and Deaf student body. In general, this study aims to investigate the advantages Deaf college students enjoy from online learning over the mainstream classroom setting. In particular, three skills of Deaf college students, which are writing, reading, and English literacy, will be explored on the basis of the impacts of online learning on twenty-first century postsecondary education for Deaf students. In combining modern technology with efficient pedagogy, online learning has promptly become an essential element of the college experience since two decades after the beginning of the worldwide web (Smith & Allman, 2010). Distance and online learning are not anything new to the college system. However, not much research suggests true social equality for Deaf students in this environment (Slike, 2008). Thus, this author will explore how Deaf students relate to fellow hearing students in discussion boards

and group projects. The reading challenges and eye strain the current layout of online learning exhibits will also be addressed.

Literacy development among the Deaf falls behind by two years until they reach third-grade in elementary school; after that, they show very slow language development and it does not go beyond the level of a fourth grader when they graduate high school (Choi, 2005). Whereas Deaf students in kindergarten through the twelfth grade have been studied to a great extent, partially due to the No Child Left Behind Act, the study of lived experiences of Deaf online college students are nominal (Toscano, 2002). With the high college dropout rate for students with a hearing loss, a better understanding of why attrition rates are so high should be explored. The problem this author will address in this study is how online Deaf students attending three public colleges acclimate to the social and academic challenges found in online learning.

Reading Skills of Deaf Students

One of the most common issues regarding Deaf students' academic growth is literacy. According to Myers and Fernandes (2010), the focal points and matters that establish Deaf research in the 1970s have stabilized into a perceptive standpoint toward altering historical circumstances and the diversity of the lives of twenty-first century Deaf people. In the United States, the average 8-year-old hearing students and the average 18-year-old hearing-handicapped students had equal standardized reading achievement scores, which remained nearly constant from the 1970s to the 1990s (Moores, 1996). During this period, several studies, such as those of King and Quigley (1985) and Paul (1997), sought to explain the underperformance of Deaf students on reading comprehension measures as compared to their hearing counterparts. All the while, program administrators, teachers, and parents were generally concerned about Deaf students' reading levels and MCE systems were developed and extensively used (Moores, 1996).

Moreover, the reading instruction methods within the framework of an entire language philosophy were increasingly used (Abrams, 1991; Abrams, 1995; Dolman, 1993). Despite all these efforts, low reading achievement among Deaf students persisted.

According to Bochner and Bochner (2009), "hearing loss alone does not account for a particularly large share of the variance in reading achievement" (p. 146). Deaf children may begin to learn to read in the same ways as their hearing peers do, but "literacy development typically does not proceed at a pace considered average for hearing students" (Schirmer, 2001, p. 74). In the context of Deaf students reading performance enhancement, there are several issues that stir debate among United States teachers and parents. Among these issues are the functions of tests and phonics in programs and instruction of reading for Deaf students. Moreover, there are dilemmas regarding the first language of a Deaf child, whether it should be signed language or a traditionally spoken language and the methods of conveying traditionally spoken languages to Deaf children, which include Cued Speech, finger spelling, signs, and oral-aural methods.

Often, the lack of a common perception on the characteristics of the reading process and the factors that affect it prolongs the discussions on crucial issues of Deaf students' reading achievement. Worse, the debates are left unresolved. Several teachers and parents are aware that reading is not simply the decoding of words, but a complex process; as such, it entails background knowledge and cognitive and linguistic abilities. On the other hand, there is still a lack of understanding among numerous teachers and parents around the globe regarding the factors that influence the reading process, which include task variables, the reader, and the text (Paul, 1997).

Traditional institutions serving Deaf students often provide accommodations, which include preparation classes, counseling, interpreters, extended timelines, closed captioning, note

takers, tutoring, information on financial services, as well as follow-up communication. There appears to be adequate support services for traditional in-classroom students. In reality, however, there is a lack of services provided to online Deaf learners, especially in higher education. Unlike services provided during early education, such as Free and Appropriate Public Education (FAPE), accommodations at the postsecondary level hold the student responsible for requesting support services (Gardner, Barr, & Lachs, 2001).

With the lack of ease of access to English that many of these students face, students who are deaf or hard of hearing lag behind general education students in reading and mathematics, but especially in reading. Typically, students who are deaf or hard of hearing are several years behind their general education peers. For example, students in the eighth grade tend to function at the third- or fourth-grade level in reading (Traxler, 2000). Because reading is auditory based, learning to read is especially problematic for the deaf and the hard of hearing (Case, 2008).

Writing Skills of Deaf Students

One of the challenges Deaf education teachers face is the teaching of writing, which is a meaningful activity that fulfills the individual and socio-cultural purposes of Deaf children and their hearing peers in a similar way (Conway, 1985). In itself, writing is a social process that embodies a way to convey a message to another person (Dorn & Soffos, 2001), a process that applies to all deaf and hearing children. Since writing is developed from "pre-speech gestures children make and from the language they hear and later use" and the growing awareness that "the spoken word is not the only way to represent reality" (Gunning, 2008, p. 465), people with "incomplete access to a language would therefore have problems in the development of written language" (Giddens, 2009, p. 2). These children with hearing impairments will continue to experience difficulties in developing their writing skills as they move further in their education.

Toscano, McKee, and Lepoutre (2002) investigated Deaf postsecondary students with highly developed reading and writing skills in terms of their "social, educational, and demographic characteristics" (p. 5) in order to identify the traits and factors that can reinforce hard-of-hearing individuals' academic literacy skills. Findings attributed the Deaf students' strong academic literacy skills to "heavy parental involvement in early education and educational decisions, differing modes of communication but extensive family communication," and "high parental and secondary school expectations" (Toscano, McKee, & Lepoutre, 2002,p. 5). Furthermore, Deaf students with strong academic literacy skills enjoy reading and watching television, were exposed to exhaustive reading and writing early, and have "a relatively limited social life, and positive self-image" (Toscano, McKee, & Lepoutre, 2002,p. 5).

Williams (2004) looked at the purpose of writing for children who are deaf or hard of hearing. For seven months, he observed and collected writing samples of children five to six years of age who were enrolled in a self-contained auditory-oral kindergarten program. After investigating the writing skills of Deaf children in public schools, Antia and Reed (2005) reported that only 17% of these Deaf students had above-average scores on story construction, contextual language, and contextual conventions while 32% garnered average scores and 51% had below-average scores.

Despite their struggle with the written language, hard-of-hearing children with available opportunities to write can do so considering the cohesion of their writing skills development and that of their hearing peers. Similarity in the written language development of Deaf children and their hearing peers may imply that similar approaches to teaching writing skills may be suitable for both deaf and hearing children (Williams, 2004).

One difficulty encountered by students in the development of their plans, webs, or outlines before writing is spelling, which involves a mixture of visual memory and awareness of phonemics and morphemics. The application of phonemic awareness is limited for Deaf students so they have to depend on their awareness of visual memory and morphemes both for spelling and for word identification in reading comprehension. Since the Deaf students who struggle with visual memory and morphemes tend to also struggle with spelling, Deaf students not only limit their brainstorming to common vocabulary "but also to words they are able to spell" and often, their use of brainstorming when creating writing ideas results in "outlines or webs with minimal detail that include limited vocabulary" (Brokop & Persall, 2009,p. 7).

While vocabulary knowledge significantly predicts both Deaf and hearing students' reading comprehension, hearing students usually have significantly more vocabulary knowledge, a faster rate of learning new vocabulary, and an easier development process of acquiring vocabulary than the Deaf students (Wauters, Marschuark, Sapere, & Convertino, 2008). With regards to the struggle of Deaf adults with vocabulary, the lack of varied vocabulary and an indefinite or ambiguous awareness of new vocabulary are particularly challenging, while an efficient and regular vocabulary teaching is advantageous (Brokop & Persall, 2009, p. 10).

The Use of Sign Language for College Education for Deaf Students

One of the major breakthroughs in Deaf education before the advent of the twenty-first century is the method of writing sign language texts in SignWriting and encoding it in SignWriting Markup Language (SWML). SignWriting was developed by Sutton (2002) as a result of her reverence and admiration for the erudition and beauty of all signed languages. Costa and Dimuro (2002) define SignWriting as an applied writing system for Deaf sign languages

made of a collection of "intuitive graphical-schematic symbols and simple rules for combining them to represent signs" and SWML as "an XML-based language written in SignWriting used to encode sign language texts" in a manner that does not depend on computer platform and an application (p. 202).

Sign language texts, therefore, can be both obtained as output from and "entered as input" to any type of computer program that perform "any kind of language and document processing", including translation, animation, search, spell-checking, dictionary automation, analysis and generation, and storage and retrieval (Costa & Dimuro, 2002, p. 202). Through this process, the entire field of computational linguistics and natural language processing based on text is opened to the sign languages for the Deaf community.

With a great emphasis on the visual representation of position and movement, SignWriting is a symbolic writing system that naturally forms iconicity (Cripps, 2008). This writing system involves more Deaf individuals, which makes it a dynamic writing system that continuously expands and changes for the better. Certainly, SignWriting can be used by linguists in their systematic depiction of signs and sign phrases, although it is a system not particularly intended to be used in such an undertaking. In essence, this system is visualized to be used by Deaf individuals on a daily basis for similar objectives hearing individuals normally apply written oral languages, such as taking notes, reading books and newspapers, learning at school, and making contracts (Costa & Dimuro, 2002).

With approximately 600 symbols (Rosenberg, 1999) categorized into eight for writing sentences and signs for the recording of 27 distinctive signed languages of 27 countries, SignWriting is unlocking new communication boundaries for Deaf individuals and sign language users across the globe (Sutton, 2002). Only some of the SignWriting symbols from the eight

categories are chosen to construct a written word (Cripps, 2008). It is not a complex procedure to search for signs in sign language texts that are written in SignWriting, except for the process of tallying two signs that must take into account slight disparities in the positions of their matching symbol illustrations. When the user sets up the search procedure, he or she must be able to specify the size of the disparities that are permitted in correspondence tests, if possible, so that he or she can have complete rule over the preferred similarity degree of the compared signs (Costa, Dimuro, & de Freitas, 2004).

The first Deaf person to write articles in SignWriting and in ASL, as well as for the SignWriter newspaper, is Lucinda O'Grady Batch, who was a native ASL user and was born Deaf to a Deaf family (Sutton, 2002). Since 1982, Batch has been applying SignWriting, and she believes that ASL is a real language that lacked a written form until SignWriting's development (Sutton, 2002). SignWriting can be used to teach the English language, and in general, it writes languages without changing them. Since its symbols record body movement, SignWriting is able to portray the visual nuances of any sign language of any country. Deaf individuals will significantly gain from books that explain the grammar and idioms of the English language that are written in ASL. In the United States, Deaf individuals are one of the few linguistic minorities who have no access to books that teach in their mother tongue.

The claim that SignWriting is an advanced writing system for Deaf individuals, according to Cripps (2008), is a confusing argument because it requires Deaf individuals to be able to equal their hearing peers in dealing with an arbitrary writing system. Sign language users who are Deaf can refer to places and times that are not present without any complexity as they start with ASL as a linguistic system. It must also be considered that SignWriting expresses abstract concepts in various signs.

There are early researchers that used intelligence tests and concluded that Deaf children did not perform as well as their hearing counterparts because they are limited to concrete thinking, thus would do many of the cognitive tasks poorly. This claim reaffirms the argument that when Deaf individuals use a pictographic writing system, they are at an advantage. Currently, this pictographic written system is no longer used in oral languages. Cripps (2008) argued that "the support for a pictographic system for ASL would erode when one considers the evolution of writing systems for the hearing populations over time" and any necessary writing system for deaf children and adults should only be a pictographic type (p. 76). Currently, writing systems formed for ASL sometimes oppose each other but remain a favored writing system. This has been true up until now, when the application of any writing system is not well received by both the deaf community and the mainstream education system.

Reading and writing are two of the crucial skills that Deaf students need to develop. According to Enns (2006), "what disables deaf people is not that they cannot hear, but that they cannot read and write" (p. 7). Often, the intricacies encountered by Deaf individuals during their pedagogic course and linguistic therapy, and their frustration in their writing skills development affect their approach to written language (Fabbretti & Tomasuolo, 2006). Available instructional approaches facilitate the successful preparation of pre-service Deaf education teachers in online settings. Exclusively suitable for training, online learning enables programs to use teaching approaches for the development of master Deaf education teachers. It also enables them to integrate up-to-date technology, consistently provide all students with equal access, guide students to learn independently, support effective communication skills among them, and build a collaborative learning network (Smith & Allman, 2010).

The approach most often followed by writing instruction is either product or process. The attention of the teacher and the learner is focused by the product approach on the representation of the skills by the learner's complete compositions and the instructed rules the learner was enabled to apply (Tompkins, 2000). It is also focused by the process approach on the learner's view from concept inception to complete composition (Schirmer & Ingram, 2003). Deaf college students who were interviewed "overwhelmingly indicated that they did make a plan, outline, or web before starting to compose" (Brokop & Persall, 2009, p. 7). According to the study of Kluwin and Blumenthal (1992) with 325 Deaf children in grades four to 10, the product approach to writing instruction is less effective than the process approach, which means "instructing students to work through the same stages of composing that skilled writers employ" (Brokop & Persall, 2009, p. 5).

In a study by Wolbers (2008), Deaf students significantly benefited from balanced and interactive writing instruction, specifically in terms of contextual language, word identifications, revision, and primary traits. Even before the advent of the twenty-first century, the use of technological advancements has been an asset to the improvement of education for students with disabilities. More and more educators provide interactive learning experiences through online chat, which is an advantageous environment that highly motivates students (Holmevik & Haynes, 2000; Kearsley, 2000).

One of the benefits of online learning is the possibility for all students who use a computer network to share thoughts with a group. Through "brainwriting or electronic brainstorming," ideas can flow freely in large-group brainstorming sessions without being constrained by social interaction dynamics (Brokop & Persall, 2009, p. 9). In this group, members read and can individually add their personal thoughts to an idea written by certain

members and pass these feedbacks to each other. By participating in an online group discussion in computer labs using a threaded discussion, students benefit from their time to create and arrange their ideas. While this strategy tends to be more effective with students who have advanced literacy skills, it makes it more difficult for students who have low-level skills in vocabulary and spelling to express their ideas through text. It also makes it difficult for some learners to completely understand the ideas of their classmates without the teacher's "facilitative role" (Brokop & Persall, 2009, p. 9). Stokoe (1960) pioneered the scientific study of American Sign Language. Linguistics and psycholinguists proved that the human brain is equipped for language in any modality (Klima & Bellugi, 1979). Certainly, there are several ways to practice sign language, and hearing students can act as interpreters for Deaf students who use webcams on their laptops to share lessons that are being taught (Kierman, 2006).

In Georgia, Valdosta State University pre-service teachers who had been learning sign language tutored hard-of-hearing high school students on their homework using webcams or videoconferencing. This enabled "college instructors to observe their students when they were working with hard-of-hearing students in a real classroom" and Deaf college students to "learn the lesson better and more fully participate in a class" (Bonk & Zhang, 2008, p. 238).

The Deaf education teacher's language proficiency and the language of use in the school setting are significant differences in the context of Deaf education. The pre-existing beliefs of these teachers on the methodology for language and communication have to be recognized when taking into account the role of language in Deaf students' learning environment as they may affect their beliefs on a wider extent exclusive to this situation. The vital role played by language in Deaf education includes its utilization in settings controlling the scale from bilingual English or ASL programs to completely auditory-verbal arbitrated through the understanding of sign

language (Garberoglio, Gobble, & Cawthon, 2012). Frequently, these settings provide Deaf students with a practical range of language options and opportunities that happen in diverse frameworks. In these settings, the changing language proficiency levels of the professionals affecting the usefulness of the existing language and communication comes into play aside from language options. Taking into account the basis of the teacher-student relationship essentially formed by language makes communication on various levels easier and results in a particularly important role of language.

If the mainstream classrooms use sign languages for hearing students and their Deaf peers had it translated into English by signs language interpreters, it may not be fair for the hearing students. By that alone, the Deaf individuals do not have professors in the sign languages. Students with deficiency in special schools used to be remote from their culture and deprived of their right of a decent education. As many years passed, political ideologies of integrationists arose affirming the evolution and democratization of the educational politics in special education. This can be either the revival of a democratic educational politics or merely a disguise of the social prejudice, disrespect, and lack of preparation in dealing with minority groups.

Development of Deaf Students' Writing Skills through Online Learning

It is necessary to focus onscreen space and time management in the development of e-learning platforms for Deaf students (Keatin & Miru, 2003), who have limited access to knowledge and information in learning settings that result in their linguistic deficit. There has been a great effort to develop a number of learning materials using multimedia to support the

education of Deaf individuals. In order to facilitate the learning of these Deaf students, captions are added to sign language video clips and the contents of multimedia materials.

In general, Deaf individuals have different levels of literacy skills. However, the hard of hearing students in particular are less likely to experience difficulty in comprehending the learning materials' content based merely on the captions than the Deaf people using sign language as their first language with limited literacy skills (Lang & Steely, 2003).

In the case of Deaf students who are at home while an online tutor follows them individually each in their own ambient, the students can follow the explanation of the online tutor either through written chat or through video. Only through the sense of sight can these Deaf students constantly participate in the decoding and following of messages so the explanation of the teacher, the video with sign language, and the texts are codes that are involved in the process. Nucetelli and Tagarelli de Monte (2010) explained that the online tutor, who also speaks sign language, needs to provide the sight of the Deaf students with sufficient time to complete the decoding of the video message, "eventually integrated with hints given through the written or video chat, think and then reply either in sign language or on written chat, in a distant construction of sense" (p. 4). In case the teacher is not knowledgeable of sign language, it is necessary to add an interpreter.

Linguistically, different variables shape the perception of deaf and hearing students in online learning (Lang & Steely, 2003). One issue of concern with online learning is social integration. Most Deaf and hearing students are required to participate in discussion boards, online chats, video conferencing, and other social media that online classes necessitate. The survey of Murphy and Newlon (1987) used 170 Deaf college students from varying colleges across the United States for a questionnaire to determine feelings of loneliness; according to their

results, more Deaf students were lonely as compared to hearing peers, although the sample size was too small to construe any solid conclusions.

In an examination of how captions affect Deaf students' motivation, content comprehension, and cognitive load in online learning materials, 62 Deaf adult students using sign language as a first language with similar literacy skills were surveyed. Lang & Steely (2003) concluded that simultaneous video clips of sign language and captions positively affect content comprehension but do not significantly affect motivation and cognitive load.

It has been believed for the past few decades in several countries that bilingual education, which involves spoken or written vernacular and sign language, is a necessary intervention for the learning of Deaf children. On the other hand, newborn hearing screening, cochlear implants, digital hearing aids, and other technological developments increase the likelihood of Deaf children to acquire spoken language. Consequently, educators need to be clear about the role of bilingual education and sign language for Deaf children, especially the very young ones. Based on the current research and the full recognition of the historical understanding of this concern about Deaf education, Knoors and Marschark (2012) suggested, "language planning and language policy should be revisited in an effort to ensure that they are appropriate for the increasingly diverse population of deaf children" (p. 291).

One problematic concern Deaf students face in school is reading challenges. On average, literacy development in Deaf students falls behind by two years in elementary school and results in very little language development during the first eight years of life (Lang & Steely, 2003). The average deaf student graduates from high school with a fourth-grade reading level, which could result from restricted access to information (Choi, 2005). Deaf children use relatively fewer vocabularies than hearing children, and deaf kids complain about the difficulties in learning

words with multi-meanings (Paul & Quigley, 1994). Lang and Steely (2003) recommended that texts with difficult vocabularies should be ignored if the reading level of the materials does not fit the level of deaf learners who have lower literacy capabilities, which is similar to the tendency of hearing individuals to avoid books with difficult English words due to poor English skills.

Development of Prelingually Deaf Students' English Literacy Skills through Online Learning

The lack of accommodation prevents deaf students from comprehending speech and aural communication. Prelingually deaf children, those who are either born deaf or lost hearing at an early age, fail to benefit from the fundamental growth achievements and experiences of their peers with no hearing impairment. As a result, these prelingually deaf children are "developmentally delayed in learning English, lagging in language development, and lacking knowledge of English" when they enter school (Case, 2008, p. 3). With their limited language skills, they are at a distinct disadvantage considering that high-stakes tests are highly verbal.

In essence, deaf students who are learning sign language are "learning English as a second language" (Case, 2008, p. 4). There is an apparent need for accommodations considering the communicative and accessible modalities of deaf students that are significantly different from those of their English-based hearing peers. The ideas students with limited English proficiency (LEP) can communicate are limited by their vocabulary knowledge. Although they may have several thoughts and opinions regarding a certain subject, they lack the depth and breadth of vocabulary knowledge to communicate intricate concepts despite their grasp of basic vocabulary in English (Brokop & Persall, 2009). According to Allen (1994), English language proficiency is the most prominent cultural barrier related to deaf students' learning practices in an online learning environment and can be considered the most restricting prerequisite for the participants.

For deaf students, it is "an especially challenging task" to develop spoken English language and literacy skills (Bochner & Bochner, 2009,p. 146). Because of their hearing impairment, deaf students suffer from a restricted intake of auditory linguistic information and inhibited spoken language development to the extent that, as adolescents or adults, they characteristically have major deficiencies in the larger community language and in the target language (Bochner & Albertini, 1988; Berent, 1996; 2009).

Over the past four to five decades, the system of teaching the English language to deaf students has dramatically changed. Before 1970, the emphasis of deaf education was on oral methods, which include "the development of hearing and speaking skills through amplification devices, lip reading, and the production of speech" over literacy skills development, which argues that learners should "first be taught to speak, then read, and then write" (Brokop & Persall, 2009,p. 1). From the 1970s to the 1980s, the established teaching method was simultaneous communication, which entails simultaneous signing and speaking, and "ASL signs were produced in English word order, supplemented with invented signs" to assign word endings and grammatical symbols (Brokop & Persall, 2009, p. 2).

Bochner and Bochner (2009) pointed out that there is a correlation between the language and literacy skills of students and ASL exposure, hearing impairment degree, age at its inception, and several other variables considering the considerable number of prelingually deaf individuals. However, the correlation is not significantly strong, so it is not possible for all practical uses to ascertain a simple connection between the language background and the developmental and audiometric traits of a learner (Bochner, 1982).

Since students with significant hearing loss in general encounter "great difficulty in comprehending and using the English language than do their peers" (Luetke-Stahlman, 1998, p.

316), the use of sign language as well as other cultural elements sets deaf students apart from general education students (Moore, 2002). Vocabulary, morphology, and syntax are areas that are particularly difficult for deaf students, whose "spoken English language and literacy skills span an extremely wide range of ability, extending from the primitive to the highly refined" (Bochner & Bochner, 2009, p. 144).

Research literature has not addressed the social and academic impact of online learning on the deaf community. Until the voice of deaf students can be heard, a true understanding of the challenges experienced in the pursuit of an online degree is not obtainable. Administrators and course designers could also benefit from understanding what challenges deaf students experience in an online classroom and in turn provide modifications that relieve social challenges. In this chapter, the major topics to be covered include English as a second language, college education, and training teachers for deaf students, as well as the impacts of the Internet on deaf communication.

The number of people with severe deafness pursuing university degrees is disproportionately low, and the number of deaf people who successfully obtain a university degree is even lower. This indicates that the educational system continues without functioning adequately for the people with auditory disabilities. One of the main reasons for this failure of the educational system is the education system itself; the majority of deaf children do not acquire enough of an adequate form of a first tongue that permits them to develop all their social, emotional, and cognitive potential. It also does not allow them the potential to express themselves with sufficient dexterity in the first years of their life.

Since the most recent investigations show that sign languages acquired early can contribute in a decisive way to a better emotional, social, and cognitive development of the deaf

children born with deep and severe deafness, universities are obliged to promote the investigation and the teaching of these sign languages to achieve the normalization of its use so that they can be easily acquired in the beginning of the life of deaf children who need them. Thus, these deaf children can adequately learn sign languages, which they need for their social and family environment.

After the application of educational models, grade schools and secondary schools should be established in order to develop a model of bilingual education sign languages. Through this, the access to the know-how and abilities given on equal terms with their hearing peers is guaranteed and the knowledge of the sign languages and the phonological abilities of these deaf children are enhanced.

The universities should face the challenge of hiring professionals who are highly qualified and specialized in the education of deaf people in all the educational levels. These professionals should be bilingual in oral and sign languages and they need to have acquired the most up-to-date know-how on the investigations in the area of the bilingualism in sign languages and oral tongue. Likewise, the universities should include in the plans of study the qualifications of special education, hearing and language, speech therapy, translation and interpretation, philology, linguistics, and sign language.

Universities should offer sign language courses as specific participants, extended university courses, self-study learning, or in language institutes. This is a way to contribute to the normalization of these languages. Likewise, universities should offer degree programs in specialized sign languages, complete with interpreters and mediators who are able to assist in applying these programs in social contexts. This could be done in a way in which its intervention

is made precise and subtitled programs are emitted in the audiovisual mass media in order to facilitate the access to the information on the part of the deaf people.

There is a need for universities to promote the investigation of sign languages, their contact and relations with the oral languages, the adaptation of these, and their impact on the life of the people with auditory disability. This effort should be accompanied by a greater support of the public administrations that take charge of providing funds to carry out the investigations. Likewise, the public administrations should facilitate the access of the researchers to the educational centers in which the education of deaf children can be subject to investigation. Also, they should promote the investigation of the bilingual educational methodology as prior requirement to its real implementation in a sufficient number of educational centers. This support would also have to be supplied by the associative movement of deaf people and their families. The initiatives of investigation of the universities are encouraged in order to facilitate the access to the deaf population that should be studied.

Without lessening university autonomy and academic freedom, the universities should be open to the contribution to the associative movement of deaf people and their families. With inclusive criteria, their contribution should be materialized in the contracting of researchers and sign languages professors with auditory disabilities. The associative movement should transfer to the university the problems that are ready to be resolved so that they can be an object of investigation and, in turn, the university should be open to the participation of the associative movement in the studies that are carried out.

The universities should create psychopedagogy services of diagnosis, advice, and public intervention for the people with auditory disability. They should also give services to the professionals that carry out their functions with these populations as they request the contribution

of these services for the university. In these psychopedagogical services, special attention should be given to the deaf college students by their sign language interpreters, tutors, speech therapists, and other professionals concerned. There are personal resources that, when well-managed, contribute to the success of a great number of deaf individuals who enroll and complete their university studies. These units should also take charge of giving training courses to the teaching staff, administration, and services on how to teach more effectively and pay better attention to the deaf students. In addition, they should guarantee that these deaf college students have the accessibility to the information and the acts of public interest of the university.

The public administrations, the ones whom the universities depend on, should include among the parameters they evaluate the quality of the services offered and the results obtained from the attention to the diversity. They should also include an evaluation of the existing services offered to disabled students with disabilities in general and to their students with auditory disability particularly. In terms of the satisfaction of the people with disabilities, the integral attention constitutes a preferential criterion of quality and of equity of higher education. This general principle offers the standard regarding what the universities need to maintain in order to establishment an agreement with deaf students without having communication barriers of any sort. Aside from offering a general vision of the current panorama as for the deaf students set against the university, or vice versa, there should be different actions that facilitate the access of these students to the university and its approaches.

Before entering in the situation and the needs of the deaf students with auditory disability in the university, it is necessary to do a brief introduction of the characteristics of the Deaf students and the needs of each. The first thing that one must emphasize is there is not a definition that covers all deaf students, since they are a very heterogeneous group. The common

characteristic is the existence of an auditory loss that affects them in greater or smaller measures according to the cases and the visual experience in greater or smaller degree. Likewise, there are multiple shades of deafness that should be kept in mind, which include the time when the deafness started, the type of auditory loss, possible resources to utilize to counteract effects, constraints, and the environment where the deaf individual has developed the auditory disability. These differences infer that there are different needs and communicative possibilities. For example, while some deaf students and their families opt for channeling the communication through two languages, sign language and the spoken language, others utilize different resources that promote the oral communication approach. Some of them benefit from the installation of a technical aid to obtain information while others obtain the same objective through sign languages as access to communication with their environment.

It is also known that personal and social factors influence the needs of the deaf students, such as the degree of auditory loss, the age when the deafness started, and the family, school, and social environments. Perhaps, the social factors have a more direct incident on the needs of the deaf students than the personal factors since the situation in which a deaf person is found at the circumstance when the conformity to the information is very different.

The communicative characteristics of deaf students and the use of the visual channel as an important source of information result in a series of barriers, situations, or maladjustments that impede conformity to the information or what is understood for barriers of communication. Given the great heterogeneousness of deaf students, diversity will also exist in the resources and strategies to be applied according to the common needs of these students. It is then important to undertake some of the most important approaches or those that have been verified for a greater efficacy for the suppression of the barriers of communication.

There are a growing number of deaf students in the universities who confirm that their difference can be synonymous to equal efficiency provided that the numerous existing barriers of communication are surmountable. These students fight daily against the prejudices and stereotypes anchored in the faculty, contributing to the lessening of the problems on the access to the university for deaf college students in the future.

As compared to the previous years, the current situation of deaf individuals who want to enter university has improved in regards to the increase of existing programs of integration and attention to this collective group in different universities. The current situation of deaf college education owes its improvement to the investment in several programs. A greater one has obtained focalization of adaptations for the students that need some sort of aid for their study. In relation to deaf students, it is important to put emphasis on the paradox that arises from the request to aid deaf students in their barriers of communication as opposed to other disabilities. This begins with the clerical staff at the moment of finalizing the request and it extends the problem of the communication when the student is not properly reported or oriented on the type of aids that can benefit them by rejecting the possibility of obtaining them. Deaf students that know from the beginning where to find the department for students with disabilities, know how to ask for the aids, and know their rights will be more prepared to be successful in their careers.

There are specific needs of deaf students in the university. Different tools and resources are offered to deal with the barriers and difficulties that confront the deaf students in the university. The access to the university or the entrance in the university does not begin during the day of the registration. Deaf students should be capable of valuing their preferences, aptitudes, and their future professional development. When choosing their university, Deaf students will have to keep in mind several factors, such as the plan of studies and the services

offered by the universities. After the initial reflection on the studies that they want to be carried out, the information search process and procedures begin to match their career.

It is common for the university department that attends specifically to the collective group of deaf students to be independent from the origin of the services and of the professionals that compose them. All the programs usually have the objective of facilitating a greater insertion and participation of deaf students in the entire university environment. They are also pursuing to comply with the principles of integration and comparison of opportunities, at the same time that an adaptation in the studies is provided to obtain a better universal academic approach.

To facilitate communication among deaf students, as well as monitoring the classes, faculty, university personnel, and their hearing-student peers, universities utilize a series of specific resources for accessing information. It is necessary to keep in mind that the utility of all these supports depends on the specific needs of each student, who ultimately determines the resources of those needs. Nevertheless, it is necessary to consider that, given the current situation that applies in our current company, the universities that offer these resources do so through different forms of management. The endeavor in saving money can harm the quality of these resources by offering less expensive and lower quality services, such as low remuneration to sign language interpreters and shortage of technical aids.

In traditional schools, hearing students are taught how to read by relating the graphemes or letters with the phonemes or sounds. This is a very simplistic way to understand the learning of reading as if thought that to read is only to decipher joined letters in words. Because of this, there is little frequency that the school produces true readers and writers of texts among the hearing students. The imposition of these same methods to the deaf has brought a result that very few deaf students handle the language written with a minimum of science. Even after long years

of formal education, psychopedagogy, and therapy of the language, there are serious consequences to the deaf individual's educational life and in possibilities to find worthy work.

In turn, deaf people always have perceived the importance of the development of the ability to write. The goal should be to have communities of deaf individuals who are bilingual in the local sign language and the written national language, so their members can be treated as respectable citizens once they surpass the linguistic limitations present today. Primarily, it can be assumed the prominent problem in the instrument is the lack of language understanding, which acts as an unknown literary form for deaf students. Therefore, most of them fail to express their views. This it is not an indication that the deaf individuals are not capable of carrying out processes of abstraction, but a demonstration of the lack of orientation that they have had with regard to the theme. It is described as evidence that the basic education of deaf students has been limited since the teaching of subject matters that are considered too complicated for the deaf student is avoided, restraining their access to essential knowledge.

To situate to the university community in the framework of deaf people, it is necessary to do a brief introduction of who the deaf students are in the university and what their needs and characteristics are. As mentioned previously, one must not only emphasize that a definition exists relating to the whole of the deaf student population, but that it is formed by a highly heterogeneous group with a common characteristic, which is auditory loss. The effects of auditory loss are great or small, depending on varying degrees of the cases and the visual experience. Likewise, there are multiple shades on the same auditory loss that should be kept in mind—the moment in which this deficit appears, the type of loss, the possible resources to utilize to counteract constraints, and the environment where has developed the deaf person among others. These differences presume needs and communicative possibilities differentiated. For

example, some deaf people and their families opt for channeling the communication through the sign languages, and other they have been able to remove benefit of different resources that promote the communication oral way. Some of them are benefitting from the installation of a technical aid in a public precinct to conform to the information, and other they obtain the same objective through a different tongue that has been their natural tongue of access to the communication.

Teaching Approaches for Prelingually and Postlingually Deaf Students

With the varying individual needs of children, deaf education has several complexities, which includes the difference between prelingually and postlingually deaf students. Bochner and Bochner (2009) define prelingually deaf learners as those "who experience severe to profound hearing loss prior to about 30 months of age" (p. 146). In spite of "a wide range of individual differences in their age at onset and degree of hearing loss and their exposure to a natural sign language", prelingually deaf learners have astonishingly similar linguistic skills (Bochner & Bochner, 2009, p. 146). In linguistic skills development and written language acquisition, prelingually deaf individuals encounter usual difficulties that are not always similar and are specific for every language and culture (Fabbretti & Tomasuolo, 2006; Rinaldi & Caselli, 2009).

There are three basic modalities taught to deaf students, which are based on the individual abilities and needs of these students, as well as the capacity of the school and the part of the county where the student resides. First, the auditory-oral approach is rooted in the corrected hearing of a deaf student or the lack of it, but it entails teaching lip-reading and speaking. Second, the sign language approach uses Esperanto, Signed English (SE), Cued Speech, Signed Exact English, Pidgen Signed English, Manually Coded English (MCE), and the most common one—ASL. Third, the total communication approach is a combined auditory-oral approach and ASL. These diverse modalities, each of which have advantages, drawbacks, and adherents, involve considerably challenging development of evaluations for deaf students and vital need for accommodations "for both expressive and receptive communication" (Case, 2008, p. 4). The lack of a standard ASL written language leads to the use of English language for both reading and writing despite the existence of various personal communication methods, and

"grammar and structure differ for those students who use ASL compared with how English is taught in schools for the general population" (Case, 2008, p. 5).

Cochlear implantation, which is beneficial to both prelingually-deaf children and postlingually-deaf adults (Tyler, Rubinstein, Teagle, Kelsay, & Gantz, 2000) is one of the underlying factors that make prelingually-deaf students differ from their postlingually-deaf peers in terms of academic performance. In order to compare prelingually- and postlingually-deaf individuals in terms of "developing auditory performance patterns and to assess cochlear implantees' long-term speech perception," Oh, Kim, et al. (2003) followed 29 prelingually-deaf children and 17 postlingually-deaf adults for four years. Findings revealed that, in terms of speech perception's recovery rate, those with more than five years of deafness were slower than those who were deaf for less than five years (Oh et al., 2003). As compared to the postlingually-deaf implantees, the prelingually-deaf implantees performed better in speech perception, and the best one was in fact the implantee with the "widest hypometabolic area," which implies that one of the major predictors of the success of cochlear implantation is the extent of hypometabolism as measured by fluorodeoxyglucose positron emission tomography (FDG-PET) (Oh et al., 2003, p. 148).

Considering that prelingually-deaf children lack the memory for speech sounds of postlingually-deaf adults, Tyler et al. (2000) investigated the possibility for prelingually-deaf children to obtain as high scores as the postlingually-deaf adults do. On the same sentence recognition test, many of the 21 prelingually-deaf children scored equally high as the 81 postlingually-deaf adults with multichannel cochlear implants, if not better. Tyler et al. (2000) concluded that auditory systems can sufficiently enable prelingually-deaf children to perform equally well as the postlingually-deaf adults do in terms of speech recognition.

As Christensen (2010) puts it, determining the best tools for deaf children requires teachers to make comprehensive ethical decisions in every case, which needs to be investigated in terms of usefulness and not in terms of whether it is right or wrong. Christensen (2010) also pointed out that social impacts makes it impossible to attain absolute impartiality as common awareness rules over common knowledge. Additionally in a postmodern world, there are guidelines to be followed by schools and teachers dealing with deaf students in practically every situation. It is challenging for classroom teachers to deal with culturally-deaf, prelingually-deaf, and postlingually-deaf students who possibly use SE, ASL, cochlear implants, and combined methods, which include nonverbal communication, contact signing, and sign-supported speech.

English as a Second Language for Deaf Students

The proficiency of the teacher in the language of his or her students and the language used as the medium of instruction interrelate with the efficacy beliefs of the teacher. As implied by the literature on how the efficacy beliefs of teachers interrelates with language in altering learning situations, language is relevant although there is a lack of research on deaf education teachers' efficacy beliefs and the how language impact these settings. A view of the research on regular English language education teachers will provide a better understanding of linguistic diversity's role in the efficacy beliefs of teachers. Also, when exploring the impacts of language on how teachers perceive their efficacy, it is imperative to consider how proficient the teacher is on the language being utilized in the setting (Garberoglio, Gobble, & Cawthon, 2012).

In the case of English teachers who are non-native English speakers, their perceived efficacy for designing lessons and encouraging students and their proficiency in the English language increase simultaneously (Chaco'n, 2005). For the deaf students, great effort is required from them in order to acquire sufficient literacy skills in the spoken language of their area of

residence. In general, deaf students are confronted by the challenge of increasing literacy skills in a spoken language, in which they, of course, cannot hear (Clymer & Berent, 2007). Difficulties arise when the language is auditory-based, such as Czech, Russian, and English, and the language deaf students are attempting to master is a second or even third spoken language to them. In such cases, deaf students usually acquire unsatisfactory literacy skills in the spoken language, which in turn, negatively affects their educational and career achievements.

Deaf students learning English as a Second Language (ESL) in an English-speaking community enjoy being regularly exposed to the spoken language forms more than their contemporaries who are in a non-English-speaking community (Clymer & Berent, 2007). Despite the disapproval of several educators, a number of educational settings are still practicing simultaneous communication. The use of simultaneous communication in teaching the English language was likened by Evans and Seifert (2000) to the use of French words spoken in English structure and endings when teaching the French language to English-speaking students.

In the past decades, there has been a strong debate on the details of English bilingualism or ASL and ESL approaches for deaf students, but there is rising substantiation that "some bilingual teaching strategies hold promise for increasing literacy levels for this group of learners" (Brokop & Persall, 2009, p. 2). Being in an English-speaking community also provides deaf ESL learners with various support services in their educational circumstances, such as sign captioning and language interpreting. What international deaf students may possibly be exposed to and have relative extents of knowledge in is their own communities' spoken language. In order to facilitate their English proficiency acquisition, deaf ESL students have to be knowledgeable with American Sign Language (ASL), since the English language has a visual representation "in some form of signed English" (Clymer & Berent, 2007, p. 4). ASL is a visual language with spatial-

visual grammar that is different in modality than spoken languages. Deaf ESL students in the United States have access to modern technologies, methods, and materials utilized for teaching not only English, but all participants.

With several distinctions that need to be considered, educators who recognize deafness as "a unique cultural and linguistic minority" instead of a disability use ESL teaching approaches with deaf students. This could be because the English language is new to them and many of these approaches used to develop "language proficiency in ESL learners" can be effective with deaf students (Brokop & Persall, 2009,p. 2).

College Education for Deaf Students

Great challenges confront deaf ESL students residing in non-English speaking communities, where college programs regard English as a language that plays a major role in the realms of science and technology. As a result, the development of English language skills in students is highly prioritized. In non-English speaking countries, universities generally require all students attending postsecondary programs to develop their English skills. In English-speaking countries, deaf students also have difficulty in the development of their English language skills, but it is less challenging for them than for the deaf students in non-English speaking countries (Clymer & Berent, 2007,p. 4).

Quigley (1968) defined "interpreting, counseling and preparation" as "the most important services for deaf college students" (p. 59). When students are unaware of support services available, it is likely their chance at success would decrease. One of the common problems deaf students encounter in college is the lack of control over writing assignments. This normally refers to linguistic knowledge, the writing assignment's correct grammar use, and also metalinguistic awareness or language objectivity (Albertini, 1990).

Online course offerings in universities are increasing, but there are no corresponding increase in programs for teacher education (Millett & Mayer, 2010). In Canada, documented e-learning programs were reviewed, and results revealed that programs for online learning are tremendously concentrated on general education. They are paying significantly less attention to special education, aboriginal status, ethnic, racial, religious, and gender issues, and other areas (Abrami et al., 2006).

With a minor argument on the relevance of online learning to professional training, questions of hybrid or merged models, and pedagogical concerns in most Canadian publications, it is important to consider the pedagogical benefits to technology implementation, how technology is used for virtual replications, and online learning's function instead of allowing technology to add to the difficulty (Abrami et al., 2006).

Training Teachers for Deaf Students

Factors related to deaf education teachers might explain a significant inconsistency in the achievement of deaf students across all learning levels (Marschark, Lang, & Albertini, 2002). Millett and Mayer (2010) also argue that capitalizing on the potential of online learning is becoming more and more critical to the abilities of the universities to maintain the "small, specialized, professional education programs" that they offer (p. 218). When it comes to these aspects, it is important to have well-trained and effective teachers because the number of ESL students, as well as the number of students with different types of disabilities, are increasing (Planty et al., 2009).

While training teachers of deaf education is mainly for either self-contained public school classrooms or residential school placements, there is a significant change in the demographics of the deaf children enrolling in special programs (Smith & Allman, 2010). In order to equip these

educators for deaf students, Millett and Mayer (2010) suggest that training programs are necessary.

It is expected that the need for teachers of deaf students will grow considering the execution of "universal newborn hearing screening programs, intensive early intervention, improvements in amplification technologies, and greater possibilities for mainstreaming" (Millett & Mayer, 2010, p. 219). On the other hand, it continues to be a small area not only in line with general programs for teacher preparation, but also with other specific programs such as ESL and learning disabilities, considering that one of the disabilities with the lowest occurrence is hearing loss (Ontario Ministry of Education, 2006).

According to Millett and Mayer (2010), it is a daunting task to offer special training for the teachers of deaf students, considering that "the field often attracts teachers with hearing loss themselves" (p. 219). There are broad and deep materials that need to be dealt with and rigorous teaching workshops are imperative (Millett & Mayer, 2010, p. 219). More specifically, there is a need to have instructors from various fields and to integrate new materials with the teacher education program.

One of the dilemmas to be addressed is the option between synchronous and asynchronous approach. In the United States, more and more universities are restructuring their deaf education programs as purely synchronous online learning (Slike, Berman, Klein, Rebilas & Bosch, 2008; Slike & Berman, 2009). According to Levin, He, and Robbins (2006), as compared to asynchronous courses, synchronous models are more convenient as they provide a better simulation of a real classroom and more instant feedback.

Interpreters for the deaf allot more time in between topics for adequate language translation in sign language that results in less confusion for deaf signers. With the increase of

interpreter training programs offered throughout the United States, a supplementary amount of individuals qualify to serve as interpreters for the deaf. However, in an online environment, deaf students are not afforded this vital tool.

Although there are intrinsic complexities, the online learning alternatives for professional certification programs are clearly beneficial, and the primary benefits include geographical convenience, and expediency. A distinctive viewpoint is offered by online learning settings for the training of pre-service deaf education teachers. On the other hand, there are questions that continue to exist, which are in relation to the capability of online learning to uphold academic honesty, offer equivalent education, and maintain the engagement of the students without personal contact (Evans & Powell, 2007; Knapczyk & Hew, 2007; Lin, 2009). Moreover, there are increasing issues on academic honesty that have to be deal with from the perspectives of not only the universities but also of the licensing parties.

It is a fact that there is a need to prioritize learning efficiency for students. Nevertheless, there are several considerations that should not be overlooked by universities. These issues include the costs both to the students and to the school, constant support for the teachers and the students as it relates to the information technologies, and their training needs. It also includes how at ease they are with the system being utilized (Care & Scanlan, 2001). Maximizing the engagement of students in any online learning program is still a continuing concern, and several developers of programs for online teacher education have noticed isolation issues (Miller & Knuth, 2004; Dell & Hobbs, 2006; Millett & Mayer, 2010).

Considering that English literacy development is one of the most pressing needs of deaf students, there are nine important components of a comprehensive literacy program, which include "reading to children, dialogue journals, independent reading, guided reading and writing,

shared reading and writing, other journals and logs, research reading and writing, language experience, and writing workshops" (Fernandes, 1999,p. 1). In order to increase the success of literacy programs, all of these components are necessary for the English literacy development of deaf students.

The attempt of deaf college students to switch their reading and writing level from basic to content-focused is facilitated by writing dialogue journals. The deaf students can be efficiently directed through the process as their reading levels are assessed (Walworth,1985). When considering the vastly varied population of deaf students, deaf education teachers will possibly deal with diverse challenges in engaging the students. Important factors to be considered include the vast differences of deaf students in their proficiency, use of language, and their growing likelihood of having additional disabilities. According to the Gallaudet Research Institute (2011), the most recent demographic data of deaf learners reveal that 39% of them have further disabilities. This is another factor that has to be taken into account when considering the relationship between deaf students and their teachers.

Tschannen-Moran and Hoy (2007) indicated that more emphasis is commonly put on instructional strategies and classroom management, especially for new teachers in teaching environments where student engagement is a more intricate task. This may imply that deaf education teachers are confronted by further challenges that could constrain their opportunities to deal with the more intricate task of student engagement. When general education teachers report less efficacy beliefs than deaf education teachers in classroom management and instructional strategies, it indicates that student engagement is prioritized more so than classroom management and instructional strategies in teacher trainings for deaf education.

In order to train deaf education teachers to effectively develop deaf students' literacy skills in general, it is helpful for them to undergo online training courses themselves. In these online courses, students are required to make videos of themselves while studying in order to determine the effectiveness of pre-service teachers in demonstrating the necessary skills. These students need to show that they are aware of the joint use of both multimedia content and controlled reading levels to deliver content.

According to Downing and Holtz (2008), students have real opportunities to use the content language of every theme in reading and writing in the print format through online education, which has advanced beyond the typecast of communication assignments. With the technology allowing them to observe their performance in the teacher training programs, faculty members can capitalize on the potential of their students and raise the bar for the performance required from their students.

Instructors can deeply explore the parts of teaching content that in a text-only format could otherwise appear unattainable through their ability to improve intricate content with hypertext media, images, and video. From written structures of planned teaching diagrams and paper writing, online learning advances towards more substantial outputs. Pre-service teachers have to follow directives for practicum experiences and student teaching as mandated by the deaf education program in the university irrespective of the location of the online students. These online students are provided with wide-ranging opportunities to obtain experiences to teach deaf students in classrooms and schools in their own areas.

Through the curriculum and the technological innovation, students use textbooks based on research to exhibit profound knowledge using the formation of visual multimedia-based demonstrations of both efficient instruction and evaluation systems. Required to perform class-

related and practical projects in their own areas, students delve into their student teaching skills and observations with as many alternatives as possible (Smith & Allman, 2010).

There are significant factors that come into play in the training of deaf education teachers. After exploring the effectiveness of training in helping pre-service deaf education teachers acquire the characteristics of master teachers, Sheetz and Martin (2008) enumerated six qualities of a master deaf education teacher. These are a passion for teaching, the use of cognitive approaches, being updated with advanced strategies, collaborative working, effective communication skills, and the ability to encourage students to learn independently.

Mitchell and Karchmer (2006) pointed out the need for teacher training to adapt in order to satisfy the varying needs of deaf education. These training programs have found that students are reluctant or not allowed to uproot their families and leave their jobs in exchange for a teaching certification and a degree with the growing demand for deaf education teachers. According to Schrum, Burbank, and Capps (2007), the common reason why students choose distance education or online or programs is its convenience, and these students are drawn to online learning in large numbers.

Smith and Allman (2010) stated that program design changes were necessitated as strongly implied by the needs for more deaf education teachers and for more enrolment in the university. There are a limited number of students aiming to obtain certification in deaf education and residents in locations that are accessible to training programs. Since training deaf education teachers are not available in thirteen states and several territories in the United States, Johnson (2004) recommended the immediate implementation of web-based technologies into deaf education. In agreement with this recommendation (Johnson, 2004), students are strongly

persuaded to acquire eligibility for regular education certification by taking extra educational courses aside from student teaching, sign language coursework, and all online coursework.

Technological advancements significantly contribute to deaf education in general, such as enabling users to make course presentations with captioned videos through program incorporated software. There is a need to institute an online preparation program for deaf education that addresses the lack of well-equipped deaf education teachers and allows students to pursue a teacher certification or even a master's degree. When instituting an online preparation program for deaf education teachers, it is imperative to plan and consider how to guarantee accessibility to deaf students.

Through online learning, training content can be effectively delivered to the pre-service deaf education teachers. With the use of the Internet, web-based classrooms offer a distinctive and accessible setting for the training of pre-service deaf education teachers. Smith and Allman (2010) recommended comprehensive experiential research on the efficacy of online learning training for pre-service deaf education teachers, which must assess the online learning process, the delivered course content, and the employed online delivery systems, and surpass the technology.

Sense of Efficacy of Teachers of Deaf Students

While self-efficacy is a major facet of social cognitive theory, the perception of the teacher's ability to influence the academic performance of their students is a less explored paradigm in deaf education studies. In general, self-efficacy entails a closer investigation of the connection between the behavior and beliefs of an individual. Since the school is a comprehensive professional context that incorporates students, parents, colleagues, supervisors, policies, facilities, and resources, teacher self-efficacy involves a teacher's sense of capacity to

facilitate learning with these students and in this setting (Garberoglio, Gobble, & Cawthon, 2012).

There has been progressively increasing literature over the recent decades that indicate the need to examine teachers' self-efficacy beliefs, as this is a crucial element involved in the education and achievement results of students. Based on literature findings, the perceived efficacy of teachers strongly impacts their behavior in the classroom, particularly in terms of their effort level, established objectives, and determination through complex conditions. It is important to recognize that the efficacy beliefs of teachers are not only an essential concept, but also a compliant one that can be affected by learning setting changes (Tschannen-Moran & Hoy, 2007).

In deaf education settings, one aspect that is yet to be largely explored is collective efficacy, which plays a vital role in teacher beliefs in the school setting. It is then important to have professional development and training for all administrators in preference to a micro-level concentration on deaf education teachers. The efficacy beliefs of teachers have been extensively researched. This is especially so in the instruction of the English language, ranging from the teaching settings for Venezuelan ESL students and Singapore students with low achievement to the metropolitan schools and disabled learners in the United States. However, it was Garberoglio, Gobble, and Cawthon (2012) who pioneered the study on the efficacy beliefs of teachers as a theoretical perspective for the analysis of the beliefs and attitudes of deaf education teachers.

In 80 various United States, deaf education settings, Garberoglio, Gobble, and Cawthon (2012) studied the link between the reports of self-efficacy of teachers and the features of the school and suggested that the school processes affecting the attitudes and beliefs of deaf education teachers have to be further examined. Specifically, deaf education teachers had high

efficacy beliefs in general, but significantly higher in classroom management and instructional strategies than in student engagement. The ultimate predictor of the sense of efficacy of teachers is their perceived collective efficacy of their teaching setting despite the strong relationship between the years of experience and efficacy beliefs of teachers (Garberoglio, Gobble, & Cawthon, 2012).

Better understanding of the factors that influence the sense of efficacy of deaf education teachers strengthens training programs and the general development of these teachers. Findings on the efficacy beliefs of deaf education teachers take into consideration an analysis of prospective factors that influence the efficiency and incorporation of teachers with the more extensive existing research base on the self-efficacy of teachers.

Based on the findings of teacher self-efficacy studies in postsecondary settings, deaf education teachers in mainstream settings were more prone to utilizing an information communication approach than those in separate settings who implement teaching approaches focused on students and on theoretical adjustment (Marschark, Richardson, Sapere, & Sarchet, 2010). Brown and Paatsch (2010) specified deaf education teachers working in oral settings as the ones whose adopted practice model and essential beliefs are strongly related. On the other hand, Brown and Paatsch (2010) did not explain related factors that might come into play in the beliefs of teachers, such as the teaching setting requirements and student learning qualities.

The working environment of the teacher is inevitably involved in the examination of the attitudes and beliefs of teachers, especially when self-efficacy beliefs are regarded as context sensitive (Garberoglio, Gobble, & Cawthon, 2012). Time is one of the variables constantly emerging as a significant factor in the flexibility of attitudes and beliefs of teachers. The trainee teachers' self-efficacy belief changes are essentially intervened by other variables, including the

previous experience and age of the teacher as well as attitudes, resources, and available support and practices of the school (Tschannen-Moran & Hoy, 2007). Due to the school settings' intricate dynamics, an assessment of related variables is necessary to mediate change in teachers' self-efficacy beliefs in due course (Garberoglio, Gobble, & Cawthon, 2012).

There is a possibility that deaf students' low achievement is related to deaf education teachers' reduced efficacy beliefs in the event that higher student outcomes are a result of strong self-efficacy. While it is not yet clear whether or not the sense of efficacy of teachers and the achievement of students are related in the deaf student populations, teaching experience appears to have an impact on this correlation (Garberoglio, Gobble, & Cawthon, 2012).

In deaf education, the most important predictor of the sense of efficacy of teachers is how they perceive the educational setting's collective efficacy. For novice teachers, other related variables including the accessibility of verbal influence and school resources or support from family, school, and community essentially mediate their decline in efficacy beliefs (Tschannen-Moran & Hoy, 2007). While the deaf education teachers in the study of Garberoglio, Gobble, and Cawthon (2012) have low expectations of their students in due course, other studies contrarily show that the efficacy beliefs of teachers increase along with years of experience if not stable (de la Torre Cruz & Arias, 2007; Yeo et al., 2008).

Garberoglio, Gobble, and Cawthon (2012) hypothesized that deaf education teachers are likely to have decreased efficacy beliefs in due course, if their expectations of students lower as they add more years of experience. Findings from teacher characteristics analyses reveal that the efficacy beliefs of deaf education teachers who have been teaching for over a decade is significantly higher than those of the teachers who have been teaching for five years or less. This aligns with the findings that teachers with more years of experience have higher efficacy levels

from various studies in countries such as the United States (de la Torre Cruz & Arias, 2007) and Singapore (Yeo et al., 2008). However, other findings imply that through time, the efficacy beliefs of teachers are more stable (Chaco'n, 2005).

The low expectations of deaf education teachers across all experience levels elicits issues on the teacher beliefs' possible role on student outcomes as revealed by the findings that students showed no significant difference with teachers of different experience levels (Garberoglio, Gobble, & Cawthon, 2012). Since the efficacy beliefs of deaf education teachers had no significant difference among teachers who have been teaching for six or more years, Garberoglio, Gobble, and Cawthon (2012) considered that the efficacy beliefs of teachers commonly fluctuate during the particular period of the first two to five years of teaching.

When considering collective mastery experiences, school achievement may be the best alternative since it is a collective experience in the school level that can function as a sign of earlier success. In deaf education settings, this is a complex result to take into account since there is a likelihood that the way teachers perceive their deaf students' achievement will fluctuate across contexts and settings. While test scores can measure achievement in larger individual programs, measuring achievement in smaller programs of only one class of deaf students is more complicated.

Clearly, the self-efficacy beliefs of teachers interrelate with various and intricate series of variables, which include differences in available resources, collaboration level, collective efficacy beliefs, the teacher's training background, and years of experience. Garberoglio, Gobble, and Cawthon (2012) found out that efficacy beliefs are different between deaf education teachers and general education teachers. This finding supports the underlying principle for investigating the different attitudes and beliefs of deaf education teachers.

Deaf Students and Distance Education

Upon inspecting the opinions of deaf college students who attend classes in an online format, this study builds upon the current body of research on deaf learners who attend institutions of higher learning. Demographic and social changes occurring within the deaf student population have a profound impact on the quality of postsecondary education and rehabilitation services they entail (Allen, 1994). The challenges and evolutions the deaf community has endured were established in order to show directional transformation over time.

Accommodations approved for postsecondary deaf students are considered as well as graduation success rates of former deaf scholars. A review of the literature referencing online learning implies that such learning is not designed around the needs of students with disabilities (Kinash et al., 2004). In the earlier years of deaf history, the reason for muteness was unknown. Theories defended that as long as a person is capable of obtaining instruction, he or she can develop reasoning and be saved. On November 29, 1975, Public Law 94-142, also known as the Education for All Handicapped Children Act of 1975, was passed by the 94th Congress and signed into law by President Gerald Ford.

Shift from Mainstream Classroom Setting to Online Learning

Americans with hearing impairment have common and dissimilar but also similarly important experiences. During the twenty-first century, professionals working with hard-of-hearing children have a consensual objective to provide children with "age and developmentally appropriate skills in order for them to be equivalent to their hearing peers" (Giddens, 2009, p. 6). This is considering that approximately 75% of all hard-of-hearing children are still attending local public schools (Karchmer & Mitchell, 2003). Rittenhouse et al. (1991) suggested four

principles for promoting the hard-of-hearing Americans' welfare, which included the need to identify the challenges "that will continue to confront hearing-impaired Americans through the year 2000", increase the involvement and membership of existing alliances, deal with local, educational, technical, and vocational concerns, and "facilitate hearing-impaired networking groups within religious, social, business, and cultural organizations" (p. 392).

The arrival of the twenty-first century required a consideration of the challenges that will confront the deaf individuals and a reflection on how to turn these challenges into opportunities for them. It must be considered that the social changes in general can be reflected by the demographic developments and concerns of postsecondary education for deaf individuals. From 1962 to 1965, the rubella epidemic increased the number of 18 to 21-year-old deaf students, and in 1968, the Vocational Education Act was amended. This deaf student population growth and this amendment, along with Section 504 and other national education policies, have caused "the number of students reportedly enrolled in programs designed specifically for deaf students" between 1972 and 1987 to increase from 2,271 to 7,490, which is a 230% growth (Foster, 1992, p. 14-15). During those years, several national policy initiatives have caused a dramatic increase of 27 to 153 in the number of programs designed for deaf students in universities and colleges in the United States (Stuckless & Delgado, 1973; Rawlings, Karchner, & DeCaro, 1988). In particular, Section 504 granted students with disabilities access to all higher education programs funded by the federal government, which include tutors, note takers, interpreters, and other support services (Foster, 1992). Also, the Vocational Education Act exclusively funded services to students with disabilities with a higher priority to those with severe handicaps, which include the deaf students (Foster, 1992). Thus, more funds were given to deaf students,

postsecondary programs designed for deaf students, and research on postsecondary deaf education.

For international deaf students, the development of their English literacy skills is a major concern. Berent (1993) assessed prelingually deaf students on their familiarity with nine English structures at the academic year's beginning and end in order to assess their improvement of English syntax knowledge of upon entering college. While this study revealed "significant improvement on all structures," the improvement of "students with lower general English proficiency" is considerably greater than that of those whose English proficiency is generally higher (Berent, 1993, p. 55). These results imply that explicit grammar instruction can benefit deaf students with low English proficiency, and deaf students can have more alternatives for their degree and access reading materials for English syntax improvement for college more conveniently.

The efficiency of postsecondary deaf education greatly depends on teaching techniques for deaf students. From 839 critical incidents that differentiate effective from ineffective teaching collected in interviews with 56 deaf college students, 33 particular teaching qualities were developed and examined by Lang, Dowaliby, and Anderson (1994). They were examined with respect to three variables, which are course, teacher, and student. Among 46 teachers in a study by Zahadurin et al. (2011), 42 claimed that e-learning that offers courses with more graphical elements will certainly encourage deaf students to confidently learn, due to the fact that the interest of these deaf students show more preference for these graphical elements.

While hearing and deaf college students have similar teaching characteristics that motivate their memories of classroom learning experiences, specifically within the teacher affect domain, the ability of the teacher to clearly communicate in sign language was both "a

characteristic unique to deaf college students" and "the most frequently occurring characteristic of effective teaching" (Lang, Dowaliby, & Anderson, 1994, p. 119).

For many individuals, it is beneficial for deaf students to be educated in the mainstream classroom. On the other hand, there is an apprehension among several deaf adults, families, and professionals that such placement may not be able to meet all the deaf or hard-of hearing students' "educational, social, emotional, or cultural needs" (Snider, 1995, p. 257). It is important to consider the difference between the needs of the hearing students and those of the students with hearing impairment. It is not safe to assume, for example, that valid assessments of the deaf and hardofhearing students' writing competency can be derived from the indirect writing competency tests commonly used for research, programs, and various educational purposes at the college level, which may also have been confirmed on hearing students.

In an investigation of "the relationships between various working memory (WM) recoding processes and English language skills," Lichtenstein (1998, p. 80) found that the visual codes, signs, and speech for the majority of the 86 college students from diverse educational settings who are prelingually deaf are not as effective for the English linguistic information retention in WM as the hearing individuals' speech code. On the other hand, results showed that there is a positive correlation between WM capacity and the capability to employ recoding processes that are based on speech. While the ability to efficiently employ speech recoding strategy increases, the use of sign recoding decreases (Lichtenstein, 1998). In general, results implied that English skill acquisition and grammatical processes are distinctively influenced by WM strategies and processes (Lichtenstein, 1998).

Lang, Stinson, Kavanagh, Liu, and Basile (1999) studied "six learning style dimensions of the Grasha-Riechmann Student Learning Style Scales (GRSLSS)" with 100 deaf college

students and administered "six corresponding scales of teaching emphases" to the 16 instructors of the students (p. 16). Results showed that there is a significant correlation between "participative learning style" and "course achievement and course interest" for students, which proves the advantage of emphasizing active learning, and the learning styles are linked both for teachers and for students (Lang, Stinson, Kavanagh, Liu, & Basile, 1999, p. 16).

A survey compared 121 hearing students and 149 deaf students, who take the same courses, to an abridged and modified version of the Approaches to Studying Inventory (ASI) questionnaire, which takes measurements of deep, strategic and surface learning. The results revealed a relatively insignificant effect of deafness on studying approaches and equal capability of hearing students and deaf students to engage with the basic significance of the course materials (Richardson, MacLeod-Gallinger, McKee, & Long, 2000). In addition, while deaf students experience more difficulty in relating concepts on diverse participants, especially those who use sign language for communication, they tend to take on a crucial approach and to examine the course participants' internal configuration more than hearing students do (Richardson et al., 2000, p. 156).

A comprehension study with 20 deaf college students, who represent higher and lower levels of reading skills, indicated that the reading comprehension of the deaf students is better than their ability to express. It also indicated that they need a more careful and accurate evaluation of their reading comprehension since they cannot recognize a sentence that is not topically related to the passage (Kelly, Albertini, & Shannon, 2001). Another comprehension study examined the impact of "strategy review instruction on deaf college students' comprehension of short reading passages revealed that students with higher reading ability level showed improved post-training passage comprehension, while the control group of deaf students

comparable to the higher-level readers" and those with lower reading ability level did not (Kelly, Albertini, & Shannon, 2001, p. 385).

There is insufficient knowledge regarding the potential solutions to the challenges that confront deaf students in gaining access to information in higher education classrooms. Also, there is insufficient evidence that support the premise that support services, such as tutoring, interpreting, real-time captioning, and note taking, improve the academic achievement of deaf students. In this regard, Lang (2002) emphasized the importance of enhancing self-support skills, career education, and academic adaptations.

Results of the study by Cuculick and Kelly (2003) with 905 NTID students who graduated between 1990 and 1998, indicate that "improved counseling, placement, and retention strategies" (p. 279) are required. Irrespective of curriculum prerequisites and complexity, the students have similar performance across degree categories, and only the grade average of non-degree-earning students was significantly lower (Cuculick & Kelly, 2003). After comparing the scores of distance learning students (267 with hearing impairment and 178 without confirmed disability) in the Academic Engagement Form's adapted version, Richardson, Long, and Foster (2004) found a relatively slight "impact of a hearing loss on engagement in distance education" (p. 68).

According to Schrum, Burbank, and Capps (2007), online learning keeps on making significant inroads in the development coursework that connects field practice with teacher pedagogy policy and theory. In the online setting, users are allowed to present multimedia content, video, audio, and text-based communication through the synchronous learning environments provided by Elluminate® and Wimba® (Smith & Allman, 2010). There were efforts to create available learning tools that are concentrated on printed texts in the English

language. Wimba provided students who are native ASL users with a handy tool and enabled the communication between teachers and students through speech in live time and sign language. This is different from earlier efforts to create available media requiring deaf students to read English in printed form (Smith & Allman, 2010). Oovoo and GoogleTalk are also web-based tools that facilitate communication between deaf and hearing people in accessible settings utilized by program students and teachers (Smith & Allman, 2010).

In order to optimize the efficiency of the deaf education teachers, it is important that they themselves undergo online courses during their training and preparation program. Through the worldwide web, deaf education teachers can particularly meet the distinctive requirements of their students by accessing, creating, and modifying materials. An example would be the creation of videos by pre-service teachers demonstrating the scientific method in content methods in order to deal with the shortage of available science research. These pre-service teachers get well-known deaf scientists' biographies studied in the online program from the website technologies of the university. They can then incorporate them into their science lesson plans so that they make materials that are exclusively suitable to their kindergarten through 12th-grade students upon returning to their respective schools (Smith & Allman, 2010).

Since print is permanent and some online courses are asynchronous, students have opportunities and sufficient time to deeply reflect, compose their reactions, and even modify them, which are often not opportunities included in the mainstream classroom. While teachers in both online and mainstream classroom formats often report qualitatively dissimilar joint problem-solving skills and discussions among the distance education students, distance education teachers are enabled to constantly supervise the efficacy of their own teaching and

adjust it as needed all through the course (Smith & Allman, 2010). Thus, the interactive and growing nature of teaching can be experienced by students.

Summary

This chapter reviewed literature from the context of the entire online education environment, including all fields of study that offer online courses at higher learning institutions. Specifically, this chapter reviewed literature related to: Online education in post-modernity era, comparison of face-to-face and online education, studies of effective online teaching and learning methods, benefits and motivational factors for online education, students' and teachers' perceptions of online courses, barriers, challenges, and criticism of online education, standards of evaluating online education, and experiences of deaf students undertaking online education. Exploring these areas can aid in the development of structures and modes of operation in online education.

While every theme discussed above is important, none really address the main idea behind this proposed research, which is the lived experiences of deaf students undertaking online education. Surprisingly, in spite of the growing research in education and online studies, there are but a few literature reviews related to studying online for deaf students. Preceding studies conducted in this field have constructively discussed qualitatively the experiences of students learning online, but mentions nothing concerning deaf student's experiences.

Research on the perceptions of deaf online learners has not been addressed in the literature. Although a great deal of research has been conducted on deaf students in the Kindergarten through 12th-grade environment, the lived experiences and academic impacts on deaf online college students remain deficient. The purpose of this hermeneutical, phenomenological study is to provide a better understanding of how deaf students perceive

online learning by researching lived experiences and bringing attention to needed accommodations that might bring online learning up to an equal learning standard for both the hearing and deaf student body. In general, this study aims to investigate the advantages deaf college students enjoy from online learning over the mainstream classroom setting. In particular, three skills of deaf college students, which are writing, reading, and English literacy, will be explored on the basis of the impacts of online learning on twenty-first century postsecondary education for deaf students.

It is quite true that difficulties exist as mentioned from various students through the preceding research done. However, the experiences of deaf students could be different judging from the use of sign languages and various means for studying and practice. Online education programs consume relatively more time due to the kind of technology applied such as discussion boards, chat rooms, and e-mails. Howland and Moore (2002) have noted that much time is spent on discussion boards in comparison to writing method.

On a general note, there is a sharp contrast and gap in the research, the potential research studies or intent to study experiences gained from online classes. However, the reviewed literature point to general online experiences. The research is thus vast and not specific. In this case, we understand that the reviewed literature discusses online experiences, but courses and areas of specialization differ. It is explicitly evident that the reviewed literature is inadequate, vast, and non-specific, as research needs to be specific and embracing.

What are the technological difficulties experienced by deaf students studying online? With questions like these, the reviewed literature will be grossly inadequate. Thus, a more embracing but still specific research is necessary to bring out the benefits, the barriers, and prospects for deaf students pursuing their education through the mode of online learning.

CHAPTER THREE: METHODOLOGY

The purpose of this hermeneutical, phenomenological study was to provide a better understanding of how deaf students perceive online learning by researching lived experiences and bringing attention to needed accommodations that might bring online learning up to an equal learning standard for both the hearing and deaf student body. In general, this study aimed to investigate the advantages deaf college students enjoy from online learning over the mainstream classroom setting. In particular, three skills of deaf college students, which were writing, reading, and English literacy, were explored on the basis of the impacts of online learning on twenty-first century postsecondary education for deaf students. To do this, a hermeneutic phenomenology design was used to gather data, which was analyzed based on hermeneutic and phenomenological principles. As the researcher, I played a role as a human instrument and all ethical considerations were implemented in a qualitative research design.

Open-ended questions were asked of the participants for the purpose of searching for emerging themes in the provided data. The following sections contain a summary of the methodology of the study that was deemed appropriate for the quest for information. A qualitative study has a structure that can be utilized to recover descriptive data that leads to credible results (Anderson & Spenser, 2002). Chapter three also included summaries of the population selected for the study, the appropriateness of the research design, data collection procedures, internal and external validity, trustworthiness, and the manner of analysis of recovering the data.

Research Method and Design Appropriateness

The selection of a qualitative approach is deemed appropriate because the method was an inquiry approach useful for exploring and understanding the central phenomenon described in Chapter one (Creswell, 2009). The chosen inquiry process was designed to study a human social issue in detail, which is typical of a qualitative approach. In contrast, a quantitative research method focuses on human social issues through testable predictions based on variables (Creswell, 2009). A qualitative approach provides data through descriptions, analysis, and observation of social behaviors (Patton, 2002).

A qualitative research design was used to gather feedback from deaf students regarding their experiences while pursuing education through distance learning. According to Monette, Sullivan, and Dejong (1997), the choice to use qualitative or quantitative study is based upon two factors: “the familiarity of a particular subject and the researcher’s position concerning human social behavior” (p. 37). The selection of a qualitative approach for the present study was deemed suitable because the process could provide a representation of the lived experiences of participants (Abusabha & Woelfel, 2003; Billingsley, 2004; Creswell, 2009; Moustakas, 1994). Abusabha and Woelfel contended that the perceptions of participants allow the researcher to gather, analyze, and report information that is free of bias. Abusabha and Woelfel noted that, “qualitative researchers argue that, in the absence of close connection with the object of study, results will be distorted” (p. 566). Thus, the present study incorporated face-to-face interviews. The present study was focused on an approach, which understands a phenomenon perceived by participants, rather than an approach, which tests a hypothesis with a numerical construct.

Research Design

The selected methodology appropriate for this research was hermeneutic phenomenology, which is "aimed at producing rich textual descriptions of the experiencing of selected phenomena in the life world of individuals that are able to connect with the experience of all of us collectively" (Smith, 1997, p. 80). Concerned with the life world or human experience as it is lived, hermeneutic phenomenology focuses on illuminating details and seemingly trivial aspects within experience that may be taken for granted in our lives. It has a goal of creating meaning and achieving a sense of understanding (Wilson & Hutchinson, 1991). This lived experience can be explored through phenomena, attention to, perception, recollection, and contemplation of the world with humans as knower or the approach of being a human as an involved being with a stress on the human providence in a foreign world (Annells, 1996; Ajjawi & Higgs, 2007). Ajjawi and Higgs (2007) stated that "increasingly deeper and layered reflection by the use of rich descriptive language" (p. 616) allows for a more profound understanding of the significance of a lived experience from the identified experience of phenomena (Smith, 1997).

Focused on the historical implications of experience and their collective and developmental impacts on individuals and societies, the interpretive hermeneutic research process entailed overt statements of the historical developments or beliefs directing interpretation and the conjectures prompting those who construct the interpretations (Barclay, 1992). Relying on concrete descriptions of lived experiences and first-person accounts in American Sign Language, this study avoided abstract intellectual generalizations (Finlay, 2009). After analyzing descriptions and offering a synthesized account, general themes contributing to the essence of the phenomenon are brought to light. The researcher borrowed methods from the

transcendental phenomenological approach to correctly supplement the hermenutical phenomenological design.

According to Creswell (2009), knowledge is gleaned from the rich descriptions of each deaf student's perception and experience during the initial focus groups. All student participants participated in at least one individual interview that aided in the development of follow up questionnaires. Videotaped discussions, field notes, emails, and all transcribed material are used to help answer predetermined questions. Reflection with the student and teacher participants on the subject matter (van Manen, 1997) helped the interview to achieve its highly specific purposes in hermeneutic phenomenology, in the exploration and collection of the account of lived experiences, and in the development of an informal relationship with the participants regarding the experiences' implication (Ajjawi & Higgs, 2007). The format selected for the interviews in this study was semi-structured in order to provide richness and broader data. This structure also lent more freedom for participants to elaborate their experiences, to respond to probes and questions (Morse & Field, 1995), and better comparison across interviews with some standard questions (Minichiello, Madison, Hays, Courtney, & St. John, 1999) as compared to structured and unstructured interviews.

Population and Sampling

The sample drawn from the population being studied was selected to be representative of the entire population so that any data recovered from interviews would be a true reflection of the population (Bourne & Moore, 2005). However, there can be differences when a large sample population is involved. The sample group consisted of enrolled deaf students and deaf students who had dropped out. Reaching such a diverse population for interviews required the aid of telephone and email. Their telephones and emails were taken from the college administration

with the approval of the participants. It is important to ensure that participant's personal details were captured to ensure a broad sample. The basic information about each interviewee was also important for verifying the validity of the data. Typically, the purpose of a case study is not to symbolize the world, but to embody the case (Stake, 1995). This harmonizes with the researcher's interest to "optimize understandings of the case rather than to generalize beyond it" (p. 246). These understandings could serve as a "vehicle for examining other cases" (Yin, 2008) in similar programs at other universities and other higher learning institutions.

Sampling Method

As Cohen, Manion, and Morrison (2008) mentioned, sampling is the process by which, the researcher chooses a representative sample from an entire population. However, in qualitative studies, this sample is somewhat restrictive as it is more purposive. The number of deaf students runs up to millions worldwide. It would have been impractical, therefore, to send out questionnaires or to conduct interviews with all these individuals. The best way to choose participants was through the extraction of a sample that was representative of the entire population.

Identification of participants was essential to ensure that the most qualified participants were selected to take part in the interviewing process, as the sample was to meet certain criteria. The researcher took special care to ensure the criteria that all participants were deaf students who experienced or were currently experiencing an education online. In special situations, the use of a purposive sample was chosen as the form of data collection (Neuman, 1997). For the purpose of this study, the researcher identified 16 potential participants. The requirement was that participants had prior experience using the features of the online classroom in order to be able to draw upon their prior experiences with online learning and their perceptions of distance learning

education. Through sampling, qualified participants who consented were recruited to take part in the interviews.

Procedures

Institutional Review Board approval accessible to Conviron College was obtained and informed consent from all student participants was secured. Once permission was received, data collection took place. Data collection procedures include focus groups, individual interviews, and questionnaires. To prevent biases, observation of participation and class involvement was limited to student perception.

Research Questions

Welman et al. (2005) suggested that the design of the interview questions should coincide with the key objective metric in the research—the research questions. The interview questions were designed to answer the research questions, leading to new knowledge and a better understanding of the research topic. This study sought to address the following research questions:

RQ1. In the perspective of Deaf college students who are enrolled and who dropped out, how did the online class affect their writing skills?

RQ2. In the perspective of Deaf college students who are enrolled and who dropped out, how did the online class affect their reading skills?

RQ3. In the perspective of Deaf college students who are enrolled and who dropped out, how did the online class affect their social and academic satisfaction?

RQ4. In the perspective of Deaf college students who are enrolled and who dropped out, how did the online class meet their specific learning needs?

Setting

The participating students in the study must be active members of the Deaf Community. Consequently, personal and lived experiences reflected those of Deaf culture. All of the participants had no standard study environment. Since they were studying for an online degree, their experiences each differed according to the study environment set up at their own homes and, therefore, reacted differently to them. The researcher wanted to get a clear idea of how these experiences differed for each respondent and whether the online degrees were capable of providing standard quality education to students in different environments.

Procedure and Timeframe

For the success and viability of the coverage of the entire research, it is important that timelines be created for the activities to be undertaken (Cohen et al., 2008). Bottlenecks and points of failure for the research were identified and positive counter-measures were taken well in advance. From the general survey of the activities required, the most time-consuming and critical were the sampling and interviewing of the individuals in the sample. As per the scope of the research, it was imperative to allocate sufficient resources and time for the interviews and, simultaneously, to strictly adhere to the designated timeframe during the interview period (Cohen et al., 2008). The procedures chronologically followed the path specified by the research plan, which included the selection of an appropriate sample. During the interview, the confidentiality of the data collected was explained to each participant. Thereafter, the researcher explained the background of the research and its significance. Each question was well spaced so that each consecutive question led to the cumulative questions within the research topic. As a result, this research activity lasted about three weeks and the documentation consumed another

two weeks. The greatest hurdle in the research was to implement the interviews to the chosen sample within the period provided.

Participants

After receiving an acceptance of the proposal from my dissertation committee and IRB approval was granted, class rosters indicating which students fall under ADA guidelines were gathered from one college to determine eligibility of students that may qualify as participants. The selection process included each potential Deaf student responding to a request for participation letter indicating whether they meet the criteria and wished to participate in this voluntary research investigation. The sample included eight Deaf students enrolled in online learning and eight Deaf students that have dropped out of school for a total of 16. The hope is to gain perspective on why students are dropping out of online classes. Below are the students who participated.

Students participating in the study must have been deaf from birth and were required to use American Sign Language as their primary communication method in everyday interaction. Each student must have attended the Florida School for the Deaf and Blind and fall between the ages of 18 and 24 years old. Each student must be in their second or third year of college and hold a minimum of 24 completed college credit hours to participate in this study. Lastly, each student was required to have completed at least one traditional classroom-based lecture course as well one online only course, not including hybrid or blended courses.

Table 1

Deaf Students Interviewed

Name	Sex	Age	Major	Units Completed	Deafness Severity	Age of Deafness Onset	Deafness Type	Deafness Cause
P. A	M	24	IT	24	Partial	Post-ling.	Sens	Disease
P. B	M	23	Bio.	48	Profound	Prelingual	Sens.	Congenital
P. C	M	19	Math	24	Profound	Postling.	Cond.	Disease
P. D	M	21	Psyc.		Partial	Prelingual	Cond.	Congenital
P. E	M	19	Spanish	24	Partial	Postling.	Sens.	Disease
P. F	M	23	Hort.	24	Profound	Prelingual	Sens.	Acquired
P. G	M	24	P.E.	32	Partial	Prelingual	Cond.	Acquired
P. H	M	22	Sec.Ed	48	Partial	Post-ling.	Sens.	Medication
P. I	F	23	D. S.	48	Profound	Prelingual	Sens.	Congenital
P. J	F	22	D. H. I. Ed	32	Profound	Prelingual	Mixed	Acquired
P. K	F	24	E. C. Ed.	48	Partial	Postling.	Cond.	Medication
P. L	F	20	Chem.	24	Profound	Prelingual	Sens.	Acquired
P. M	F	23	Bio.	32	Profound	Prelingual	Mixed	Acquired
P. N		19	PE.	24	Profound	Prelingual	Sens.	Acquired
P. O	F	21	Hist.	24	Partial	Prelingual	Sens.	Congenital
P. P	F	23	Math	24	Profound	Prelingual	Sens.	Acquired

Notes:
Name: P = Participant
Gender: M = Male; F = Female
Major: IT = Information Technology; Bio. = Biology; Math = Mathematics; Psych. = Psychology, Hort. = Horticulture; P.E.= Physical Education; Sec. Ed = Secondary Education; D.S. = Deaf Studies; DHI Ed. = Deaf/Hearing Impaired Education; E.C. Ed = Early Childhood Education; Chem.= Chemistry; Hist. = History
Deafness Type: Sens. = Sensorineural; Cond.= Conductive

Researcher's Role

I have an intense personal interest in this research endeavor, as the Deaf community is part of my life, family, and culture. Growing up as a Child of Deaf Adults (C.O.D.A) the language of the Deaf became my first language. Both of my parents attended schools for the Deaf, and neither hold the vocal abilities to communicate in the hearing world without the assistance of an interpreter. In keeping with the tradition of the Deaf culture, as the first-born girl, I became the family interpreter for my parents. Learning English once I entered school at 6 years old was challenging, to say the least. As any second language learner, I struggled with the language structure and grammar differences between American Sign Language (ASL) and grammatically correct spoken English.

I am the first person in my family to attend college and I have witnessed firsthand the challenges deaf people face when trying to communicate in a scholastic atmosphere. Growing up, I always knew I wanted to attend Gallaudet, the first and only Deaf college in the United States, because being around Deaf students and professors is where I feel most comfortable. Facing the financial expense and the burden the university put on my family was not something I took lightly. Thus, I traveled to Texas and attended a community college for a few years before transferring to a state school and eventually obtaining a master's degree in Deaf Education.

As noted in an earlier chapter, the master's program I attended was offered as a distance learning degree from Texas Woman's University. This experience led me to question if proper accommodations for Deaf students were available for online education. There were several online lectures my professors uploaded on video that were not closed captioned and many Skype meetings did not offer interpreters. Not all Deaf people are privy to expensive Deaf telephones that offer voice translation to written text, and live discussions online are not visually friendly

without written text options. My biggest complaint about online classes that offered closed captioning for class lectures and PowerPoint presentations is the eye strain. There were also headaches that followed after reading an hour-long lecture while trying to follow along with the graphics that most teachers added to presentations for additional visual stimulation.

I have a slight hearing impairment in both of my ears due to possible damage sustained as a child or possible hereditary loss from my parents. As a result, I can personally attest to visual difficulties and eye strain in having to read every spoken word along with all the book readings assigned in class. Watching an interpreter sign a class lecture is a lot easier on the eyes than reading text across the bottom of a computer screen.

My qualifications to perform as the human instrument in this study include my childhood of growing up in a Deaf family and utilizing American Sign Language as my primary language for the majority of my life. Currently, I have taught American Sign Language at the college level for six years, always incorporating Deaf culture in class lectures and staying abreast of new and evolving signs. My objective to this research is to provide a better understanding of how the Deaf community perceives online learning and bring attention to needed accommodations that might bring online learning up to an equal learning standard across the board.

Data Collection

Data collection was conducted through open-ended questions for the questionnaires, which were developed after reflecting upon the survey responses, as well as focus groups and individual interviews. Ideas developed from interviews, focus groups, and individual interviews resulted in a need for clarification and validation of interpreted data.

Survey Questions. Survey questions were emailed to the student participants attached in

Appendix B. Data for this study was obtained by administering an online version of the survey instrument to the participants. A description of the study was included in an initial contact email. Information on the study was provided, as well as the Informed Consent Form (AppendixA), in the initial contact email. The potential participants were made aware that they could discontinue at any point in the study without any subsequent consequences. Once the participants agreed to the terms of the study, as indicated by the Informed Consent form, they were directed to a link for the survey instruments. The participant clicked on the link provided and then redirected to the survey instrument. The participant responded to each of the questions from the survey instrument by selecting the most appropriate response that reflected his or her perceptions. To save on time and costs, the surveys were disbursed to the sample population using post, electronic mail, and hand deliveries. The information provided by each of the participants were saved and stored online. Once the survey instrument had been completed, the data was automatically saved to the online database.

The online database was in the researcher's web account on SurveyMonkey.com. This information was stored in a password-protected account which only the researcher had access. The information and data provided by each of the participants was kept in the online account until the sampling period had been completed. The raw data from the survey instruments was downloaded and saved on a password-protected computer file. The responses provided to each of the questions on the survey instrument were imported into a Microsoft Excel® spreadsheet. The participants who completed the survey instrument were assigned a unique control number. This control number was used to maintain the confidentiality of the participants as well as to ensure that responses correspond to the particular participants in the study. Personal information was not included. If any data was printed, the paper copies were stored in a locked filing cabinet to which

the researcher alone had access. This way, the confidentiality of each participant in the study was maintained and no personal information was accessible. All data will be kept on file for a period of three years and then will be destroyed and deleted from the computer's hard drive. Any paper-based information was destroyed in a paper shredder.

Questionnaires were designed for the Participants. These observations reflect a rich and detailed description of the setting most commonly used by the Deaf participants while attending online courses as well as personal opinions and reflections of lived experience.

Individual Interviews. The second data collection method used in the study was one-on-one interviews for participants to express their ideas openly and freely, as well as to determine the location for which to speak (Creswell, 2009). This model allowed for inductive reasoning and generalization of information to be contextualized into the thematic analysis using content analysis. The researcher designed the interview questions (Appendix C).

The bracketing technique was used to remain more of a listener with participation as needed to ensure that specific and purposeful themes emerge throughout the interviews. Informed consent was obtained with all ethical principles in place and in capturing the responses of key informants such as students, teachers, and parents. Immediately following each interview, the researcher completed field notes. Interviews were reviewed, recorded, and listened to repeatedly to ensure validity. Data was stored in a separate hard drive or other electronic data base. Notes specific to the study from journaling and note taking were locked and secured as outline by university procedures and destroyed upon course completion. IRB forms were completed to ensure all state and federal regulations were in compliance.

The interview schedule was intended to maximize the target population's ability to share lived experiences. Thus, the semi-structured interview method was used to address the research

questions thoroughly. Mutch (2005) contended semi-structured interviews allow the researcher to refine the questions and clarify any areas about which the participant may be uncertain. Mutch defined a semi-structured interview as one where “a set of guiding questions are used but where the interview is open to changes along the way” (p. 225). The researcher was also given an opportunity to present non-verbal cues to participants through a smile or gesture, making participants feel more comfortable; any signs of discomfort can also be noticed in advance. A semi-structured interview method also made it much easier for participants to provide additional information about the topic based on their experiences with and knowledge of the subject (Mutch, 2005). For this type of research, such interviews were most informative, and the researcher was able to measure what information was necessary and what to discard. The semi-structured interview protocol was used with all participants to maintain an orderly method of query that would aid in identifying trends and themes. Interview questions were designed to fit the participants’ capabilities, as well as their knowledge of the topic. The ultimate goal of the interviews was to gain as much relevant information from the participants as possible (Lichtman, 2010). It should also be noted that the interviews were face-to-face interactions between the researcher and the participants.

Focus Group. Focus groups became a common interviewing technique since the 1920s. During that time, they were used to measure public morale during the Second World War (Basch, 1987). Focus group interviewing entails a class as its focus, because they are commonly engaged in an activity. The focus group discussions shaped the findings, conclusions, and recommendations. Focus groups should have their own section in the study, including a protocol. Focus groups responded to predetermined primary questions (Appendix D) and three alternate follow-up questions linked to each of the primary questions.

Using focus groups allowed the researcher to observe the interaction between participants, while simultaneously noting their responses to the questions. It also allowed for collective remembering, as illustrated by a Kitzinger (2005), in his study of people's experience with AIDS. He used participants who knew each other and observed how they talked about the disease surrounded by other participants with the same experience. Through this method, he was able to observe the interactions as they naturally took place, or "naturally occurring data" (Kitzinger, 1994, p. 105). Therefore, focus groups are a vital tool for gathering data in the field of social sciences. Moreover, a focus group goes beyond a group interview "because of the community of interest shared by the group and the use of participants' interaction as research data" (Kitzinger, 2004, p.187).

The researcher conducted videotaped focus groups to gather the opinions and experiences that formed. Each focus group had a predetermined location and date, while allotting between one and three hours of participation. A convenience selection of five to seven students depicted student participation resulting with each student's required involvement in a minimum of one videotaped focus group. In the Deaf community, participants attend a weekly or monthly meeting in which Deaf, hard of hearing, and hearing individuals who use sign language come together in a predetermined location for fellowship. Similar to the Deaf Club, each focus group consisted of students coming together and sharing experiences with individual online classes. The researcher personally led and opened the discussions. However, to prevent personal influence, the researcher acted only as an observer in group conversations when opinions and personal experiences with current online classes were being shared. The researcher also used the services of a professional hearing interpreter to transcribe each focus group for accurate

translation. Results from these observations were compared to the results derived from the succeeding survey.

Analysis Plan

Since the study utilized different methods of collecting the data, different methods also were applied in analyzing the data gathered.

Questionnaire Responses. The questionnaire responses were analyzed using descriptive statistics. Descriptive statistics include frequency distributions and summary statistics.

Frequencies and percentages were calculated for each nominal and ordinal level variable on the survey instrument. Doing so provided information regarding the number and percentage of participants who selected a particular response of the survey instrument. Means, standard deviations, and median values were calculated for the ordinal Likert-type scaled questions included on the survey instrument. Higher mean and median values provided evidence that the participants had increased experience with the four constructs of the proposed study, whereas a lower mean or median indicated the opposite.

Individual Interviews. For this proposed study, content analysis was the analytic method. Content analysis is conducted through the systematic coding of data to generate thematic categories and themes, which resulted from the behaviors (observable actions), thoughts, perceptions, or experiences that become the key variables of the analysis.

Data analysis comprised organizing, analyzing, and synthesizing the data gathered from the interview responses, transforming the data into clusters and themes-based invariant constituents that emerged from the data collection phase. The participants were interviewed and the researcher gathered textual data and analyzed these using the seven-stage process of data analysis, which results in elaboration of ‘shared practices and common meanings’ (Van Manen,

1997). The first phase deals with reading and understanding the interviews and their data for a wholesome comprehension. In the second phase, the interviews are summarized by interpreting them or coding them as per one's understanding. Thirdly, the transcribed interviews are analyzed by the researcher. Fourth stage makes the researcher to look for disagreements and find solutions by interpreting and revising the interviews. In the fifth phase, the researcher looks for 'shared practices and common meanings' by comparing and contrasting the interview data. There are themes involved in the interview data, which are highlighted in phase six. These themes are interconnected with one another. Lastly, in the seventh phase, the themes are evaluated along with their examples from the interview data (Van Manen, 1997). For discerning the themes in the data, NVivo software was employed. The transcripts of the interviews were coded or interpreted with the assistance of NVivo software according to the Leeds Attribution Coding System. The researcher did the coding of transcripts. This allowed the researcher to identify possible themes and invariant constituents (Munton, Silvester, Stratton, & Hanks, 1999). In the lieu of shared practices and common meanings, the researcher extracted 70 % of the interview responses.

Focus Group. After gathering the information from the focus groups, the researcher could employ Ryan and Bernard's cutting-and-sorting method along with word lists. The researcher should pay close attention to both key words and word co-occurrence. It seemed likely that coding on the basis of superficial terminology gave rise to deeper, more fundamental information and revealed categories that seek to capture underlying motivations, beliefs, behaviors, and prejudices.

Table 2

Hermeneutic Phenomenology Data Collection and Analysis Framework

	Step-By-Step Procedures	Data Analysis
Preliminary Preparations	1. Secure IRB Approval	
	2. Recruit Participants (Deaf college students enrolled in online class)	
	3. Recruit Participants (Deaf college students dropped out in online class)	
	4. Secure Informed Consent of Participants	
Survey	1. Disburse Survey through post, email and hand deliveries to Deaf college students enrolled in online class	1. Conduct descriptive statistics, factor analysis and regression analysis.
	2. Disburse Survey through post, email and hand deliveries to Deaf college students dropped out from online class	2. The statistical software application SPSS for Microsoft windows will be the key statistical tool used to analyze the data received from the questionnaire.
	3. Once the survey instrument has been completed, the data will be automatically saved to the online database.	3. In terms of the statistical aspects of data analysis, Pearson's correlation coefficient will be performed.
	4. This information will be stored in a password-protected account which only the researcher can access	
	5. The responses provided to each of the questions on the survey instrument will be imported into a Microsoft Excel® spreadsheet. E	
	6. Assign unique control number on each survey response	
Focus Group Discussions	1. Ask the group to answer predetermined questions	1. Employ Ryan and Bernard's cutting-and-sorting method
	2. Ask the group to answer follow-up questions	2. Gather word lists and close attention to both key words and word co-occurrence
	3. Ask professional hearing interpreter to transcribe each focus group for accurate translation	
One-on-One Interviews	1. Agree on Time and Place	1. Content analysis will be conducted through the systematic coding of data to generate thematic categories and themes
	2. Ask professional hearing interpreter to transcribe each focus group for accurate translation	2. QSR Vivo v9.0 will be used as the key software and the transcribed interviews will be uploaded into the software for line by line analysis
	3. Take down notes	
	4. Review notes and review taped interviews	
	5. Ask participants to review notes	
Validity and Reliability	Conduct Audit Trail	
	member checks of paperwork and videotaped activity	
Data Storage	1. Kept for three years	
	2. Destroyed after three years	

Linking Quantitative Data with Qualitative

In qualitative research analysis, the main factors to consider are the research topic, the research questions, and feedback from the research interviews. The interview questions were based on the need to discover the kind of experiences gained by the participants while studying through distance learning. Despite the advantages of the semi-structured interviewing method, care must be taken while using it (Lichtman, 2010). The information garnered in a semi-structured interview varies, despite the presence of the interviewer during the process. For this research, the analysis involved coding and verification. Coding refers to sorting and organizing collected data and identifying recurring themes, facts, or ideas. It involves describing the responses to the interview questions in a few words or even letters that are typical for each response.

In this research, collected data was coded to integrate all the descriptions into specific key terms that could be represented in a database. Common themes were identified that deal with the barriers to and prospects of web-based environments, which is the determination of how these key patterns (or lack of patterns) would address the research questions. Finally, the analysis looked for similarities with other qualitative studies in the field of distance education.

The use of coding for analysis assisted in standardizing the answers that were gained from the data collected and in finding possible relationships and trends in the responses from the sample population (Lichtman, 2010). After the coding process, where textural descriptions were given to the data collected, the material was recorded into a database system. For this research, NVivo was the appropriate analytical tool to utilize throughout the analysis process because of the complex formulas that could flexibly manipulate the data. Only relevant information was recorded in the NVivo workspace to produce the appropriate representations of the scenarios within the population.

As a tool for qualitative analysis, NVivo is very versatile in the creation of trees and nodes for qualitative data to match up with similar responses (Richards, 1999). Additionally, relationships and links between the qualitative data can be created to show the trends within the data collected from the population sample. The casebook is a section within NVivo that shows the attributes within the data recorded. The attributes can then be linked to the cases, thereby linking the participants to the responses given. The software then allows for building graphical presentations of the data distribution and comparing attributes, as seen in the results section.

Validity and Reliability

The interview method for data collection was carefully designed to focus on interview questions that addressed the research questions. For maximum validity, the questions were designed to request in-depth information about the main research areas. This aided in sensing and understanding current information about the occurrences that are unique to this field of study. Validity is measured to determine the degree to which, it measures the data collected for analysis (Creswell, 2009). It can be measured during the analysis period when the data is tested to determine statistical data.

NVivo interactively takes up qualitative data in the form of codes (where necessary), and the trends, plus similarities and differences, are depicted graphically. During the interview sessions, the researcher performed a content validity test by checking whether the data presented by the participants are in line with the research topic requirements. Welman et al. (2005) suggested that content validity increases the logic of the answers as they build toward the research objectives. From the validity checks done during the interview process, it appeared that the data was highly reliable for measuring the experiences that Deaf students gained while undertaking their education by distance learning.

The reliability of NVivo as an appropriate tool for qualitative analysis can be tested by inserting test data and comparing them to the presentations made concerning the attributes to the corresponding cases (Richards, 1999). With such tests, it becomes clear that the system is accurate in the presentation, and if manipulated, can weed out values that should not be presented in charts and graphs.

Trustworthiness

To ensure credibility of the data, member checks, peer reviews, and external audits were performed. The researcher performed an audit trail by detailing all procedures taken and information discovered along my research path. Utilizing experts in the field to determine accuracy in transcription and interpretation can help in demonstrating credibility. Having established prolonged engagements as an active member of the Deaf community, this researcher performed member checks to ensure that, as the human instrument, this researcher accurately representing the Deaf students and Deaf culture. To ensure credibility, this researcher would have to prove the integrity of the research (Ary et al., 2006). While utilizing the expertise of a Deaf mentor, member checks of paperwork and videotaped activity would help provide a trustworthy foundation of results. Member checks' process permits the participants to check that the language used by the researcher represents what they reported (Lichtman, 2010). Throughout the data collection process, transcripts of interviews were sent periodically to participants with the purpose of verifying the accuracy of the document.

In addition, peer reviews were conducted to aid with verification of confirming and/or disconfirming themes in the data collection process. For the peer review process, a professor at Gallaudet University who is familiar with the distance-learning program and an expert in

qualitative research was invited to assist. This was an essential step in order to verify the emerging themes in the data record and maintain the quality of the study.

Ethical Considerations

Before any form of research was conducted, this researcher submitted the research plan to Liberty University's and Conviron College's Institutional Review Boards (IRB) to protect the rights and welfare of each Deaf participant. Confidentiality was also protected, as names and personal information were not utilized when transcribing data.

One of the potential risks or issues that may develop in the research involves upsetting the Deaf community or labeling them as a group not equal to hearing peers. The intent is to inform—not belittle, degrade, or devalue any member of the Deaf community. To reduce the risk of such feelings of betrayal, facts and findings were used to back up personal stories and opinions of all participants. This researcher secured and stored the data on a private external hard drive that was locked and pass code protected within a safe in the residence. This researcher also obtained consent from each participant before conducting or collecting any form of data. Finally, once the data and analysis documents for the research was completed, any and all private information collected was destroyed.

Assumptions

The most salient assumption was that all participants in this study cooperated fully and honestly when offering information. Regarding the information gleaned from unstructured questions (the last interview question that requires additional information from the respondent), such assumptions were later checked against the data to ensure maximum consistency between the data presented and the representation of the analysis through graphs and other tools.

CHAPTER FOUR: RESULTS AND INTERPRETATION

This chapter presents a constructive analysis of the trends and patterns in the collected data, obtained predominantly using the NVivo software program for qualitative analysis (Richards, 1999). This chapter includes the results and analysis of the findings and their contextual interpretation grounded on the post-modernism view of online education, presented in narrative form to ensure that individual voices and actual words of the participants are included.

The research results show the different experiences gained by the participants during the pursuit of degrees through online education. The data collected from the participants was analyzed through a postmodern perspective lens considering educational approaches and the evolution of online education, which had been affected by technological evolution and the global change in society. Participants answered using American Sign Language (ASL), which was interpreted by a translator.

Summary of Participants

The table below shows the summary of the participants involved in the study. Their names, ages, majors being studied, and how many units they completed is also listed. In addition to that, their deafness severity (partial or profound), age of deafness onset (prelingual or postlingual), deafness type (sensorineural, conductive, or mixed), and the cause of deafness is also included. Later on, these factors were analyzed as to whether it affected the Deaf student's satisfaction of distance learning.

Participant A

Participant A is a 24-year-old postlingually-deaf college student whose partial sensorineural deafness was caused by a disease when he was 6 years old. Fond of computers and technology in general, he took up a degree in Information Technology (IT) and has already

completed 24 college credit hours. He plans to work as an IT specialist immediately after college graduation.

Participant B

Participant B is a 23-year-old prelingually-deaf college student with profound sensorineural hearing loss caused by congenital factors. Interested in health and human anatomy, particularly in deafness, he originally majored in Deaf Studies; after a semester, he shifted to Biology, with which he already completed 48 college credit hours. He plans to pursue a master's degree and even a doctorate degree in Biology or any other related major.

Participant C

Participant C a 19-year-old postlingually-deaf college student whose profound conductive deafness was caused by a disease when he was 9years old. While he is also interested in science and technology, he decided to take up Mathematics as his major. He wants to become a university Mathematics professor in the future.

Participant D

With an aspiration to volunteer in international philanthropic organizations, Participant D took up Psychology as his major in college. He believes that this major will help him understand the depth of human individuals, both hearing and Deaf, and he has already completed 32 college credit hours. Since he is a prelingually-deaf individual with partial conductive hearing loss caused by congenital factors, he wants to concentrate his volunteer and philanthropic works on the deaf population.

Participant E

Having completed 24 college credit hours, participant E is already planning to get his masters degree in Deaf education after he completes his degree in Spanish. At the age of 7,

participant E was stricken by a disease that had caused his partial sensorineural, postlingual deafness. He said that since then, he wanted to become an educator of his fellow Deaf individuals, especially among the Hispanic population.

Participant F

Participant F is an African-American prelingually-deaf college student with acquired profound sensorineural hearing loss. He is interested in plants and animals. He has completed 24 college credit hours majoring in Horticulture. He plans to take up Zoology, either as an undergraduate or with a postgraduate degree.

Participant G

With his inclination in sports and athletics, participant G has already completed 32 college credit hours majoring in Physical Education, concentrated in teaching. His acquired partial conductive, prelingual deafness did not hinder his maintenance of his muscular physique. He wants to become a Physical Education teacher and basketball coach in high school in the future.

Participant H

Participant H is a 22-year-old who is interested in various aspects of visual arts, including sculpture and painting. In college, he decided to major in Photography and he has already completed 48 college credit hours. After his undergraduate degree, he is planning to get his master's degree in Arts. Since he is a postlingually-deaf individual with a partial sensorineural deafness caused by medication taken between the ages of 9 and 10, most of his art work is related to deafness.

Participant I

As an aspiring researcher and educator, participant I is a 22-year-old who has already

completed 48 college credit hours in Deaf Studies. She is a prelingually-deaf Chinese-American with a profound sensorineural hearing loss caused by congenital factors. She wants to focus her research on the early childhood education of prelingually-deaf children and become a teacher of this population.

Participant J

Participant J is a 22-year-old prelingually-deaf African American with an acquired profound mixed hearing loss. She wanted to become a deaf education teacher since she was young. Currently, she has completed 32 college credit hours in Deaf/Hearing Impaired Education.

Participant K

At 24 years old, participant K has been married to a fellow African-American Deaf classmate for almost a year. Her husband is prelingually deaf, while she is postlingually-deaf. Her partial conductive hearing loss was caused by medication taken when she was between 8 to 9 years old. They plan to have children after she completes her undergraduate degree in Early Childhood Education. She plans to pursue a career as an early childhood teacher in the future.

Participant L

Participant L is the only daughter among three children of Hispanic immigrants. At the age of 20, she has already completed 24 college credit hours in Chemistry. She is prelingually-deaf with an acquired profound sensorineural hearing loss. Aside from aspiring to be a professional chemist, she also wants to be trained as a chess player.

Participant M

After completing her undergraduate degree in Biology, Participant M plans to pursue a postgraduate. At age 23, she has completed 32 college credit hours. She is a prelingually-deaf

college student with an acquired profound mixed hearing loss.

Participant N

Participant N is a 19-year-old prelingually-deaf college student who has completed 24 college credit hours in Physical Education, specializing in Personal Training. She has an acquired profound sensorineural hearing loss. Aside from sports and athletics, she is also interested in health.

Participant O

Participant O is a 21-year-old prelingually-deaf college student with 24 college credit hours. She has a congenital partial sensorineural hearing loss. After completing her undergraduate degree in History, she plans to pursue a postgraduate degree and become a writer.

Participant P

Prelingually deaf, Participant P is a 23-year-old college student with 24 college credit hours completed in Mathematics. She has an acquired profound sensorineural hearing loss. Despite her mathematical skills and inclination, her dream is to become a novelist.

Among the 16 Deaf college students, who participated in the Interviews and follow-up email questionnaires, three were 19 years old, one was 20, two were 21, two were 22, four were 23, and three were 24. The majors they were studying were in the categories of Arts and Media, Humanities, Language and Culture, Science and Technology, and Human Services. The specific names of the degree programs were Information Technology, Biology, Chemistry, Mathematics, Horticulture, Psychology, Photography, Spanish, Physical Education, Early Childhood Education, Deaf/Hearing Impaired Education, Deaf Studies, and History. Half of the participants had completed 24 college credit hours, four of them had completed 32 college credit hours, and four had completed 48 college credit hours. Nine of the participants had profound hearing loss,

while seven had partial hearing loss. Ten of the participants had sensorineural hearing loss, four of them had conductive hearing loss, and two had mixed hearing loss. Eleven of them were prelingually-deaf, while five were postlingually-deaf. Among the 11 prelingually Deaf participants, seven acquired their deafness while four of them had it congenitally. Among the five postlingually Deaf participants, the cause of deafness for three of them was childhood disease, while the cause of deafness for the other two was medication. Two of the participants are Hispanic, three are African American, one is Chinese-American, and 10 are Caucasian. Although not intended as a criterion for the selection of the participants for Interviews and follow-up email questionnaire, all of these 16 Deaf college students did not have any other health problems aside from their hearing loss.

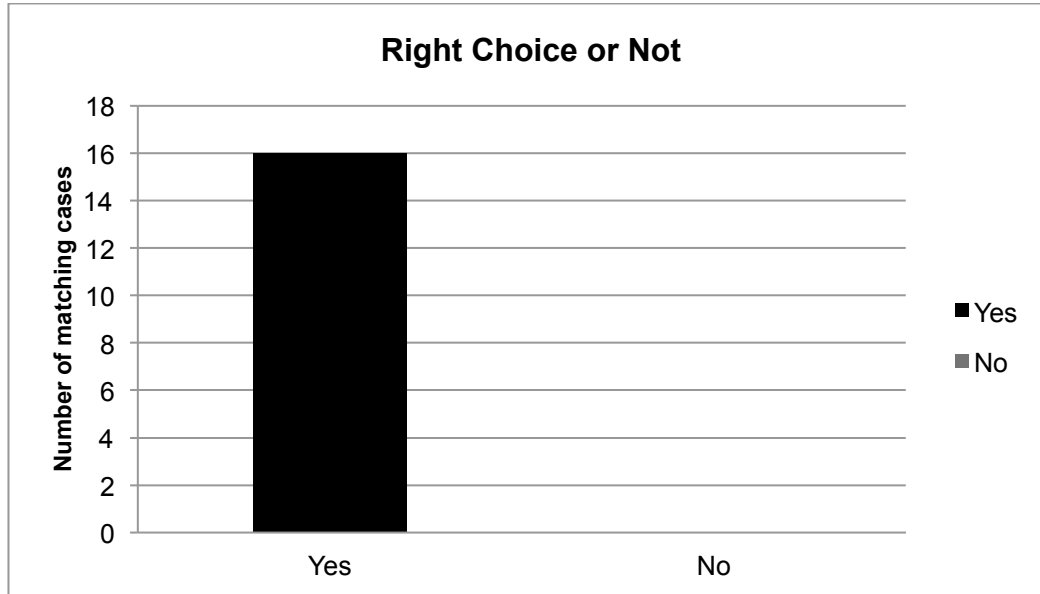
Variations were harmonized by giving tags and labels to the responses. If the answers or details a participant gave portrayed a positive response, a “Yes” served as the tag, and if the answer or details were negative, the response was a “No.” This labeling method was particularly useful for the questions that sought to determine the nature of experiences students gained in the pursuit of an online degree in education.

The analysis identified trends in responses. After incorporating this data into the software, the researcher checked for patterns and common themes that dealt with web-based environments in relation to the research questions. The experiences of students in education via distance learning shared some similarities. These similarities or differences either formed or did not form patterns. Welman et al. (2005) suggested that analysis should also draw many explanations from the broad perspective of experiences as demanded by the research.

Figure 3 shows the distribution of the participants (16) who thought that online education was the right choice. As Figure 3 shows, not a single respondent felt that the choice was wrong,

despite the many challenges and negative experiences that they expressed to the other interview questions.

Figure 2. Participant Responses to Appropriateness of Online Education



Research Question 4 asked a critical question that sought the kind and type of experiences gained by participants. The general codes used to express whether the experience was favorable or not were “good” and “bad.” The results showed that all the participants had a “good” experience despite the many disadvantages and challenges they cited in responses to the other research questions.

The analysis involved the use of NVivo to set up the appropriate attributes that can have relationships to nodes and cases, and the attributes had defined values. For example, the attribute referred to as “Motivation to online education” had values that included “peer pressure,” “additional knowledge,” and “sponsorship.” The responses were all assigned to the participants as per their cases. Additionally, for the purpose of knowing the number of the research question, it was imperative to begin the attribute’s name with the research questions’ number. Doing so

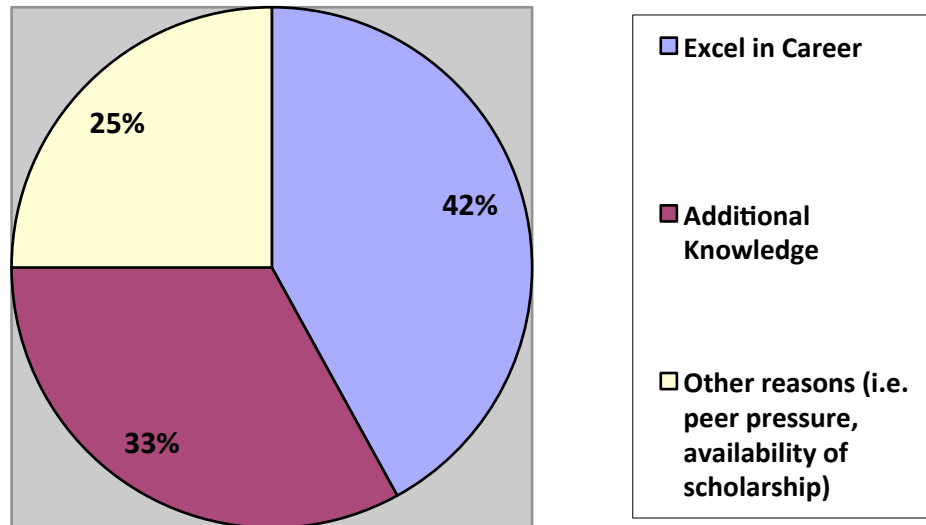
made linking in the casebook easier. Each respondent was created within the “cases” section. The cases could have as many participants as there were in the research correspondence. Appropriate names were given to the participants to link them to their responses later in the analysis process. This section will be elaborated further in the succeeding subchapters.

Reasons for Enrolling in an Online Program

The widespread demands of students and institutions to meet the changing needs of the current economy and society compels the pursuit of a contemporary learning environment that provides solutions for concerns in accessibility, funding, and quality learning (Moore & Kearsley, 2005). With the advancement of technology, particularly in information and communication tools, distance education emerged as a leading method for meeting those needs driven by the concept of globalization and postmodernism (Moore & Kearsley, 2005). This view was confirmed by most of the participant’s reasons for enrolling in an online degree program. Since online learning is a relatively new concept, the researcher asked the participants what motivated them to opt for a distance learning program as opposed to conventional learning. The participants gave varied reasons for enrolling in an online degree program.

According to the results, 42% of the participants joined the online program due to a desire to excel in their career. One participant succinctly stated, “I wanted to gain superior knowledge in my field of teaching and to advance professionally” (Participant H, Interview, 12 October2013).). A significant number (33%) joined due to the need for additional knowledge, while the rest gave reasons such as peer pressure, the availability of sponsorship, financial motivations, and the allure of learning in a “novel environment,” as one participant phrased it. (Participant A, Interview, 6 November2013).

Figure 3. Motivational Factors in Enrolling to Distance Education



Even though personal factors played a large role in encouraging the participants to pursue further education, a large number of participants also mentioned a financial motivation as a determining factor. This was stated by participants who mentioned personal success as a primary motivating factor. Below are some of the statements made by participants for continuing their education:

1. “Reaching a goal that had deferred, professional development, and to improve salary.” (Participant C, Interview, 12 October2013).
2. “Personal desire to excel and to feel me better prepare in my field of teaching. Financial incentive since my salary increases, and it provides better job certainty.” (Participant K, Interview, 12 November2013).
3. “The economic support that the Department of Education offered me to be able to pay costs of my graduate studies, in addition to my desire to advance professionally.”

(Participant J, Interview, 12 October2013).

The responses indicate that financial incentives are major motivating factors for enrollment. Another noticeable factor that specifically motivated the participants was the financial and economic incentive provided by Carrera Magisterial. This is a program that seeks to improve professionalism in teaching and improve teachers' standard of living by linking remuneration to excellence in teaching. Here are some examples of responses supporting this statement:

1. "Peer-pressure and financial motivations because of the economic incentives that offers the system of promotion known as Carrera Magisterial of the (DEPR)." (Participant N, Interview, 6 October2013).
2. "I wished to renew knowledge in education field, and the financial aspect because of the Carrera Magisterial. This law recognizes and recompense the professional performance of the classroom teacher when evidence the attainment of a Plan of Professional Improvement." (Participant E, Interview, 6 October2013).

Although funding may be minimal, online education programs create better cost management scenarios than the traditional learning systems but may also have its weaknesses. Most in-service institutions offer sponsorships to their students based on a contractual agreement. Additionally, the number of sponsorships available in the contemporary education setting has decreased over the years (Anderson, 2008). Sponsorship is not easy to come by and is typically offered based on performance. This model greatly reduces the amount of sponsorship offered by parent institutions. The trend continues by the increasing need for budgetary accountability from the funding institution. These factors, which determine the selection of a candidate for sponsorship and the evaluation of these candidates during the course,

clash with the idea of performance as a value. This has created a new market that is leading towards industrialization of modernity.

The reasons cited by the participants support the earlier claim from research that Deaf students intend to enroll in distance learning not because of their disability, but because of the benefits, they get from this scenario (Gottwald, 2005; Groulx & Hernly, 2010; Thompson, 2004). Fourteen participants answered that even if they did not have hearing loss, they would still enroll in distance education because of the convenience they derive from it. Among 14 Deaf students who answered that distance learning is an effective form of learning, eight belonged to the enrolled participants and six came from the participants who dropped out. These six participants that dropped out had different reasons for discontinuing their education using distance learning. Three of them listed financial problems, two of them had jobs and could not study anymore, while the last one was forced to drop due to medication treatment. This suggests that there is no link between distance education and dropouts due to dissatisfaction among the Deaf participants.

On the other hand, among the eight Deaf participants who dropped out, only one was not satisfied with the distance learning. He said that, "Traditional classroom set up is more effective than distance learning because of the classroom diversity. Student competition is high, so I am pushed to give my best despite of my disability"(Participant 4, Interview, 12 October2013). The other students that dropped out said they were still uncertain of the major they chose to pursue. Overall, the eight Deaf students that dropped out were able to finish at least one year of distance learning.

Deaf Perceptions of Online Education

To have a better understanding of individual perceptions on online education, the participants were asked questions regarding their satisfaction with the online learning experience.

The results showed that 83% of the total participants (n= 16) described their distance learning experience as a “Good Learning Option,” which indicated that they were satisfied with the experience. On the other hand, 17% of the participants described it as a “Bad Learning Option,” which indicated that they were dissatisfied, causing their drop-out. The results showed that a vast majority of students were satisfied with the experience.

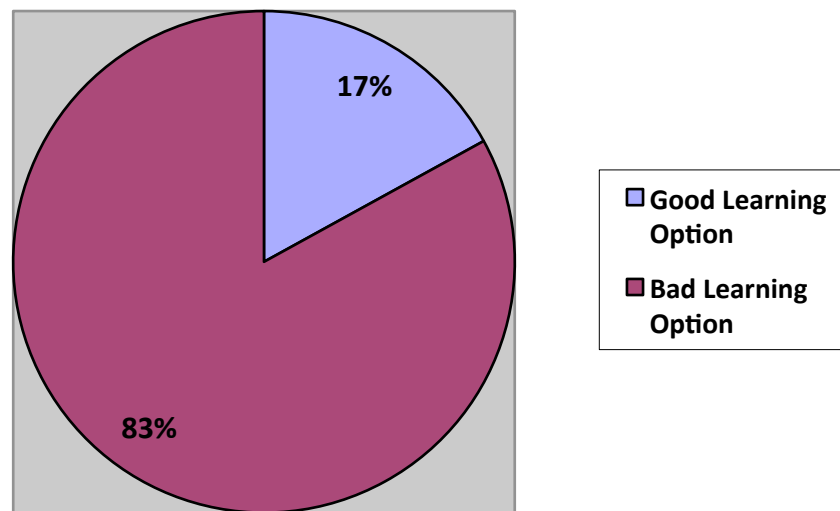


Figure 4. Perception of Deaf Students to Distance Learning

The expectations and hesitations of participants prior to studying the online course were noted as main influential factors regarding their assessment with the distance learning experience. One respondent expressed that he or she had qualms about using a new method for study, particularly one which required more technological use for seeking information. Another reason behind the dissatisfied responses was the difficulty experienced in the transition from a traditional classroom set-up to a distance learning environment. This view was expressed by several participants who had faced difficulties in making the transition. One respondent said, “I had to reinvent all the schemes that the traditional system of teaching brings,” (Participant E,

Interview, 4 October2013) while another cited difficulties in “develop[ing] communication in writing and [using] the technological media” (Participant O, Interview, 4 October2013).

Other negative experiences by participants, which led to dissatisfaction were the unavailability of resources and the lack of clarity regarding course requirements. Listed below are some of the responses concerning their dissatisfaction:

1. “At the beginning, the use of the technology to obtain information was a challenge. Guidelines of tutors were contradictory and at times, did not offer the specific instructions to carry out tasks with clarity.” (Participant A, Interview, 2 October2013).
2. “It was difficult to have to do tasks based on guidelines that I did not understand. In several instances, even communication with the professor did not clarify instructions.”(Participant F, Interview, 2 October2013).

The above two responses state that there was a lack of or, rather, one-sided communication in the case of distance learning. This limited the student’s ability to understand the study material and restricted them from asking questions. One particularly dissatisfied respondent said, “Challenging, at times frustrating because our doubts aren’t addressed quickly. Sometimes, I think that one bothers the professor when calling. To a certain extent there are even fears when communication with the professor is needed” (Participant D, Interview, 2 November2013).

These latter comments are congruent with the technological perspective of distance education on the postmodern world. Usher and Edwards (2003) noted an important issue with regards to the technological impact of online learning on education. They held that although the learning content can be delivered through using new technological application, students cannot

learn from the delivered information unless trained to use information technology. They also need training on how to make independent decisions about learning, since these decisions were conventionally made by the teacher. Thus, if the student has difficulty in using the technology to convey the learning information and if the teacher is ineffective in guiding the student in how to learn from this new method, distance education can be challenging and can cause lack of communication. This also creates a gap in the student-teacher relationship that negatively affects the abilities of students to learn from them. Furthermore, the students' independent decisions about learning, usually influenced by self-motivation and personal organization, can lead to dissatisfaction with the distance learning experience.

On the other hand, the participants that were satisfied with the online learning perceived the online education program as a good learning option. More than half the participants cited distance learning as a good choice due to their completion of the online program. One described the rate of completion of the program as "the best evidence" of distance learning as a positive choice (Participant A, Interview, 6 November 2013). Another participant stated that distance learning "gave me the opportunity to reach a goal that otherwise had been impossible" (Participant B, Interview, 6 November 2013).

One very important benefit of online learning that positively affected the satisfaction of participants was "convenience." "[It was] Refreshing and different to what was usual. It was convenient to be able to do all coursework online. Studying by distance was essential for the work I do" (Participant I, Interview, 4 October 2013). The response indicates that the online-learning program was convenient for those who had other obligations and was better suited for those who were studying simultaneously with their jobs. Participants also cited cost savings, flexibility, convenience, and their ability to balance their family and professional responsibilities

as positive implications of the program.

The satisfied reactions match the impact of online education through an economic perspective in the postmodern era. One important financial dimension of distance education is the shift from traditional tuition fees to the current system of student financing, which enabled students to avoid spending their money on libraries, parking lots, and study areas (Voorhees, 2001). In addition, since more students desire and require schedules that are non-traditional and flexible, the technological advancements utilized in distance learning has the capacity to fulfill their needs in a more cost effective manner and in much lesser time than traditional classroom learning (Morrison, 1996).

One common issue that was observed between the dissatisfied and satisfied participants was their different perceptions regarding the exchange of communication with the professor. While the participants that were dissatisfied preferred more communication and perceived its lack as a learning deficiency, satisfied participants perceived it as a learning opportunity and preferred the method of being “*self-taught*.” Below are some responses from the participants concerning this issue:

1. “I consider this as an experience in the personal learning process that has transformed me into a better professional on my career.” (Participant B, Interview, 6 November2013).
2. “I learned to be self-taught, developing greater independence upon seeking information. I have acquired new tools, and ways to seek and to obtain information.” (Participant K, Interview, 6 November2013).
3. “It was enriching and challenging because one have to be self-taught in some sense.” (Participant D, Interview, 6 October2013).

The three responses show that all participants differ in the manner they viewed and reacted to the

distance learning process, even if they were studying the same course materials and underwent the same process. Similar to the traditional classroom set-up, some students required more personal attention from the teacher than other students did. In the case of distance learning, such personal investment is unlikely since each student is given the same amount of resources and materials regardless of their learning capacities.

The fact that students' satisfactory experiences greatly outweighed the dissatisfactory ones with the distance learning experience indicates that a small number of inadequacies within the program could have influenced the negative experiences. As outlined in the literature review (Arbaugh, 2004; Pribeshet al., 2007; Glass & Sue, 2008; Kritt & Winegar, 2007; Braun, 2008; Hines, 2008; Larreamendy-Joerns & Leinhardt, 2006), these inadequacies could be in the form of resources or problems in the distance learning program, both caused by personal deficits of the students and/or the program. The following table summarizes the general comments on distance education by the participants.

Table 3
Reasons for Negative and Positive Feedback

Reasons for Negative Feedback	Reasons for Positive Feedback
<ul style="list-style-type: none"> - Hesitations - Adjustment - Unavailability of resources 	<ul style="list-style-type: none"> - Cost saving - Flexibility - Convenience - Balance social and academic life - Self-taught

In general, Deaf students prefer distance education rather than the traditional classroom set-up. Despite the problems cited by the participants, the benefits provided through distance education pull many Deaf students to enroll in distance learning. All Deaf students also agreed that distance education helped them to cope with their disability. For example, five participants mentioned that the technologies utilized through distance education helped them to understand their lessons better. For instance, digital readings allow the Deaf students to self-study as opposed to traditional classroom set-up where they sit with hearing students. In the distance learning scenario, nothing is compromised. The Deaf students can study and learn the way the hearing students do through the help of technology. It is important to note that all participants asserted that they chose distance learning, not because of their disability problem, but because they believe that it is more practical than traditional classroom.

Benefits of Online Degree Program

There are various benefits gained in the process of pursuing an education online, including saving time and money (Gottwald, 2005; Groulx&Hernly, 2010; Thompson, 2004). Each respondent, having a unique environment, had a different perception of the benefits of an online degree. The three main advantages of pursuing an education online included convenience in studies and work-related functions, gaining online research skills, and having flexible timing in scholarly operations. Of those who cited convenience as an advantage, the majority felt that the acquisition of increased academic knowledge was the most valuable effect. One participant in particular named several benefits, saying that the program “increase[d] my knowledge on concepts of teaching and learning process” (Participant M, Interview, 6October2013). Online studies also deliver technological benefits. One student shared that the experience encouraged

“diverse skills in the search for knowledge through technological resources.” (Participant G, Interview, 12 October2013).

Participants also strongly preferred the convenience and flexibility of pursuing a degree online, which allowed them to study “in the comfort of home” and still tend to domestic and professional responsibilities. Of the few who valued the skills for online searching, the analysis showed that they primarily experienced an increased capacity in teaching. The researcher observed that the students enjoyed the flexibility that they received in distance learning. They were learning on their own terms and chosen time and did not have to commit to a rigid schedule that may have affected other factors in their lives. Some of these benefits mentioned were:

1. Comfort, convenience, the professional can complete higher education.
2. Flexibility and time planning is beneficial.
3. Flexibility in time management is useful.
4. “There is a chance to think for oneself, and to define my own pace to achieve my goals.”(Participant I, Interview, 6 October2013).
5. “There is no need to travel to a university, is great to have classroom in my home.”(Participant O, Interview, 6 October2013).
6. Time management, one can be organized according to available time.
7. Being able to study in a flexible time.
8. Studying in the comfort of home allowed me to incorporate family to my studies.

There is better access to professors by a variety of means, such as telephone, email and other online methods.

The responses show that convenience was a major factor that the participants gave for choosing distance learning. This was an appreciated benefit, due to the stressful system experienced in

traditional classroom set-ups which follow pre-set schedules that are not flexible to student's needs. Distance learning provided participants with the freedom to work and study simultaneously, and on their own terms.

The technological aspect of distance learning also attracted many of the participants. One respondent cited "access to technology and to online academic resources" as a benefit that they experienced during their course of online study (Participant L, Interview, 12 October 2013). Another respondent claimed that it had even improved his technological abilities, saying, "Diverse skills in the search for knowledge through technological resources are acquired, such as computer, Internet, etc" (Participant C, Interview, 6 October 2013). The participants' responses support the viewpoint that technological innovations in the post-modern era made it possible for unforeseen instructive and logistical advantages, including convenience and accessibility of information in any location and time. The innovations are truly beneficial in the area of independent learning and learning effectiveness (Ary et al., 2010).

According to Cowen (2008), employers are more comfortable working with well-rounded individuals rather than individuals who are only skilled towards certain aspects of teaching. Employers like to see individuals who are competent in many elements that shape both the career and life of a professional. While the amount and variety of technology in schools continues to expand, most companies also seek to tap into the potential of professionals who possess innovative ideas and creative minds (Ary et al., 2010). In this regard, online education students have an advantage, as they are much more marketable when they possess additional knowledge in handling technology within their respective fields.

Since technology is expected to become the platform on which all academic content is built, the current job market is in great need of individuals who have learned and appreciated the

role of technology in running and automating tasks within their career areas. This does not mean that all education is going through distance learning, but distance education is an example of this growing trend. The future of online education is seen as an incorporation of the increased use of technology and tech-savvy individuals in accomplishing tasks as well as activities in courses. Therefore, current distance learning students would act as a pilot group for the diverse opportunities that online education graduates have. Most importantly, proper governance of distance learning programs requires the opinion of students who have gone through online education courses, and requires different approaches than traditionally used in higher education.

Most Beneficial Areas in Learning Experience

It was evident that participants benefited from distance education mostly in terms of their interactive gain of knowledge. Participants mentioned being “brought up to date” regarding their field of study and being exposed to a “wide variety of up-to-date writings and research in education,” including the concept of andragogy. Malcolm Knowles, an influential adult educator, has explained the term andragogy as an “approach based on a humanistic conception of self-directed and autonomous learners and teachers as facilitators of learning” (Knowles, 1989).

The other significant impact of online learning that benefited Deaf students was an increase in technological skills, ability to handle the classroom environment, and capacity to handle the actual language terminology on pedagogical field. One participant confirmed that online learning “put me in contact with technological resources by which I had not been related voluntarily,” while another cited increased ability to “obtain access to education books and other resources online” (Participant H, Interview, 6 October 2013).

This same respondent mentioned that his learning experiences “helped me to strengthen learning practices with other deaf students,” supporting an increased capacity to learn. Another

participant stated that the process of studying online “has influenced my educational practice in a positive way because [it] allowed me to reflect on the daily process of teaching and learning and to collect students’ feelings and needs” (Participant F, Interview, 12 October 2013). Others mentioned specifically “modifying” and “renewing” their educational practices. One respondent stated that “Learning became an extension of distance education,” as the subject matter being studied could be immediately implemented in the classroom (Participant K, Interview, 4 November 2013). This increased capacity, along with improved communication skills, to which participants also confirmed, are deemed essential for them. These experiences in the developed systems and ways of operating in the contemporary world create a platform for multiple innovations that are directed towards better curriculum development.

Overall, the online learning platform creates an ideal environment not just for attaining positive learning results, but also for effectively implementing learned ideas in the classroom. The participants’ were motivated by several factors including peer-pressure, incentives, and the need for professional growth. Thus, the resultant benefits derived by most participants depended upon the expectation and goals that they had set for themselves before applying for distance learning. Apart from professional growth, participants also experienced personal growth through distance learning. One respondent stated, “I have developed my reflexive, critical, and analytical thought in a better way. Being able to analyze, criticize, and to reflect on academic writings through the coursework” (Participant C, Interview, 12 October 2013).

Another respondent expressed similar views. “[The course has benefited me by] Improving my capacities to write-edit and discovering research methods in the dissertation” (Participant E, Interview, 12 October 2013). The above two responses indicate that personal experience and an increase in personal capacity were factors that affected their satisfaction

positively. This factor perhaps affects distance learning students more than traditional classroom students due to the feeling of being “self-taught,” which was observed in the perceptions of these students. This feeling creates a sense of personal accomplishment when students independently achieve their goals.

It is crucial that educators know the factors that shape student expectations of distance learning. The overall understanding of the benefits of distance education increased the propensity to enroll in such online courses recently. At the same time, the benefits students experienced varied depending on their orientation, thoughts, interests, and common beliefs about the courses they sought to take. The accessibility and convenience helped students in balancing personal matters such as family and professional responsibilities. At the same time, the accessibility and convenience of the academic content was another major benefit students accrued in online courses. Participants noted that the educational field is ever changing, bringing more knowledge and technology to the mode of learning, which Samaras, Freese, and Beck (2008) also noted. The table below summarizes the benefits of distance learning for deaf students according to their responses.

Table 4

List of Benefits of Distance Learning

Benefits of Distance Learning to Deaf Students
a) Interactive gain of knowledge
b) Increasing technological skills
c) Improved communication skills
d) Professional growth

Equally important to note is the effects of distance learning to the reading and writing skills of Deaf students enrolled. Fifteen out of 16 participants believed that distance learning had helped them to improve their reading skills while 11 claimed that their writing skills had improved. The reasons cited by the participants vary. One respondent claimed that, “Distance learning allows the students to read more because of the absence of teachers who will supervise us from time to time.” (Participant D, Interview, 6 November 2013). Another respondent echoed this claim saying “distance learning students are expected to read more than listen” (Participant M, Interview, 6 November 2013). Online students are expected to self-teach rather than be taught by a supervisor. All participants agreed that it is easier to learn through reading than writing. This is the reason why there are more participants who claimed that they had improved in reading skills than in writing skills. This supported the study by Bochner and Bochner (2009) that was cited earlier in the literature review. A student’s loss of hearing does not affect the reading achievement by much.

Perception of Distance Learning by Dropped Out Deaf Students

As mentioned earlier, six among the eight Deaf participants who dropped out did not express dissatisfaction with the distance learning. These six participants stated different life instances that led to them enrolling in an online school. As mentioned again earlier, these six participants believed that distance learning is indeed an effective way of learning for Deaf students like them. One particular respondent answered, “I have improved my reading skills in just one year and a half. The materials used in distance learning are updated and relevant” (Participant B, Interview, 16 October 2013). Another respondent also said that, “Reading skill is the most honed skill when I started to study through distance learning. This is due to the fact that in the absence of a facilitator, we are tasked to read and study our own

lessons” (Participant C, Interview, 16 October2013). Another respondent claimed that reading skills improve more than writing skills because “It is easier to learn because of the lesser rules to follow. You know, being a deaf student allows me to devise a special means to learn”(Participant E, Interview, 16October2013). The remaining participants agreed with this student as far as which skill improves the most while learning online. The salient problem they encountered, aside from personal reasons such as lack of time and financial problemsis the adjustment period. According to one respondent, “Adjustment means suiting yourself to the new virtual environment” (Participant M, Interview, 12 October2013). Adjustment refers to the period when they have to adjust from the traditional classroom set-up to the online environment. According to them, adjusting takes several weeks simply because “we are not used to this kind of learning.” Aside from adjustment, some other noticeable problems included technical problems like the unavailability of websites. Despite these issues, the six participants believed that the benefits of distance learning outweigh the difficulties.

Hence, the researcher opted to probe the two participants who answered that distance learning is not an effective means of schooling and the one who said that distance learning is neither effective nor ineffective. The respondent who expressed his dissatisfaction with distance learning had one major concern, which was the lack of competence in distance learning. He said that, “Unlike the traditional classroom set-up, distance education does not boost my confidence”(Participant 7, Interview, 16 October2013). Then he continued by saying that distance education was like learning in an empty classroom with no teacher, no peers, and no classmates. Hence, he did not feel motivated by distance learning. He refused to answer whether distance learning helped him improve his reading and writing skills. On the other hand, the other respondent claimed that the reason he dropped out was because of his uncertainty of the major he

had chosen. It can be inferred, therefore, that his decision to drop out had nothing to do with distance learning.

The results of the study showed that Deaf students who dropped out had various reasons for enrolling in distance education. Among the reasons stated during the interviews and observations was the fact that Deaf students are usually discriminated against inside the traditional classroom. Some participants said that in a traditional classroom, they felt inferior to the rest of the class. Many of the participants that dropped out claimed that it was not just their teachers and classmates, but also the interpreter that made them feel different. They could not participate much in class because participation usually involved talking. Instead of dealing with the problem with their interpreter, these interpreters usually deal with the teachers. Deaf students, therefore, felt that something was wrong with them and that mixing with the mainstream students was not a good choice. Dropping out of school did not feel like a choice because Deaf students felt that the whole class was compromised because of their presence. For example, if a teacher asked a Deaf student to speak with the help of their interpreter, the speech is time-consuming since the student has to use sign language and the interpreter has to translate. In some instances, the words of the Deaf student are not translated well by their interpreter. This finding is quite disturbing due to the fact that there have been numerous laws enacted by the government which protect the rights of students with disabilities. Another finding of the study is that these Deaf students learned English as a second language. Therefore, mixing them in a class with students who are native English speakers puts extra pressure on the Deaf students. They usually feel that they are lagging in class because of their disability and their non-fluent English skills.

Distance Education as Post-Modernism Outcome

Based on the interview results, the experiences gained by Deaf students while in pursuit of their degrees were found to be diverse. This was primarily due to the content and structure of such online programs and their study environment. The study participants' positive and negative experiences resulted in three different perceptions of online learning. The participants who gained positive experiences in the online program perceived online learning as a good learning option, while those who had negative experiences had an opposite perception. Accordingly, those with positive learning experiences viewed some of the weaknesses, such as the lack of communication with the professor, as a learning opportunity. They specifically perceived online learning as a tool for independent learning. Meanwhile, those with negative learning experiences perceived online learning as a learning deficiency.

In this light, the impact of online education as an outcome of postmodernism was significantly realized in several perspectives including the technological perspective, the political perspective, the socio-cultural perspective, and the economic perspective. Analyzing the impact of online learning through these perspectives and through the experiences of the participants helped provide an understanding of how online learning affects Deaf students. For instance, the participants' satisfied reactions match the impact of online education through an economic perspective in the postmodern era. One important financial dimension of online education is the shift from traditional tuition fees to the current system of student financing, which enabled students to avoid spending their money at libraries, parking lots, and study areas (Voorhees, 2001). In addition, since more students desire and require schedules that are non-traditional and flexible, the technological advancements utilized in online learning has the capacity to fulfill their needs in a more cost-effective manner and in much less time than traditional classroom

learning (Morrison, 1996).

Summary

In this chapter, an introduction provided the analysis of the trends and patterns in the collected data, followed by a description of the research findings in narrative form. The results showed the kinds of experiences participants gained while pursuing their degrees and focused on the motivational factors that led to the choice of a distance learning program. The results also discussed the effects of the online program on professional practice, the students' perceptions of the efficacy of online education, and the challenges students faced when using online distance learning tools.

As consistently shown in this chapter, many of the factors that contributed to the choice of distance education for the different teachers also determined the probable experience gained by these teachers. The study participants were from varied levels of teaching and had different levels of education. Most had degrees, with a small number having attained a doctorate-level education. Their experiences did not differ much from each other, and pointed toward their increased capacity and ability in teaching and in handling aspects of education that they gained as students in an online program.

The absence of multiple concurrent case studies assisted in focusing this research on specialized information regarding the occurrence and overall distribution of attributes within the population. This section is crucial for adding to the current body of knowledge in the field of higher learning through the mode of distance learning.

To summarize the respondent's perceptions on distance learning, the perception of online education as a bad learning option were due to hesitation prior to engaging with distance education. Their negative perceptions were also due to difficulties faced in the transition from a

traditional classroom set-up to online learning environment and other negative experiences such as unavailability of resources and the lack of clarity regarding course requirements.

On the other hand, the perception of online education as a good learning option was conceived because of the higher rates of completion, convenience, cost-savings, flexibility, and the ability to balance professional and family time with school. Meanwhile, participants perceived the lack of communication with the professor as a learning deficiency, and some perceived it as a learning opportunity.

It should be noted that although the reasons the participants stated were varied, personal enhancement and financial motivation were the common factors observed to influence enrollment for distance education. Participants also strongly preferred the convenience and flexibility of pursuing a degree online, which allowed them to study at home and gave them the capability to balance their domestic and professional responsibilities. Most importantly, participants benefited from distance learning mostly in enhancement of their teaching skills and capabilities. Overall, the distance learning programs create an ideal environment not just for attaining positive learning results, but also for effectively implementing learned ideas in the classroom.

The next chapter contains a summary of the study and a conclusion, as well as implications of the study for practice, future trends, and recommendations. Finally, it is also worth noting that distance education programs bring in elements of inquiry-based learning and liberal learning patterns. These elements, in turn, assist in the expression of better academic ideas and better ways of handling time spent in the distance learning programs. For this reason, students had a better understanding of the technology. The use of technology for value addition in education is equally promoted, and Deaf students can now have multiple teaching aids for

upgrading their knowledge in the field.

CHAPTER FIVE: CONCLUSION, RECOMMENDATIONS

This dissertation has taken a phenomenological approach to studying the effects of online learning for Deaf college students; an alternative to learning in a mainstream classroom setting. These effects have been highlighted in a specific way to identify phenomena through the perception of the students involved. As shown in this dissertation, this type of research approach involves gathering information and perceptions by utilizing inductive and qualitative methods. It gathers and translates information from the deep thoughts of the students involved through in-depth interviews and discussions, as well as through participant observation. Results are then represented from the perspective of the research participants. This is because phenomenology studies experiences from the perspective of the individual, assumptions that are usually taken for granted and methods of perceiving by the individuals.

In addition, the personal knowledge of individuals has been taken into account, subjectively in this dissertation, in order to accentuate how important personal perspective is, as well as the significance of interpretation. This allows the researcher to gain clear awareness and understanding of the individuals' subjective experiences, by getting insight into their minds, motivations and their actions. This research has done just that. In addition, this phenomenological study has been effective in highlighting individuals' experiences and their perceptions, based on their own personal experiences and perspectives. This serves to challenge normative assumptions. In addition, interpretation of the phenomenological research can be achieved to enable its use as a basis in practical theory research. This will allow for informational support for various research participants or for challenging specific policies, actions and research assumptions.

This research has explored the experiences of Deaf students who study via distance

learning through online or computer-mediated education have been the subject of much research into whether online education provides adequate instruction to students with difficulties. These difficulties may include long geographical distances from colleges and universities, time constraints, family constraints, transportation issues, professional obligations, and of course, disabilities. Online education allows students to access instruction from home via computer, video conferencing, the Internet, DVD, intranet/extranet, satellite broadcast, interactive television, or a combination of these and other electronic methods. As shown, in this dissertation, online education has grown significantly in the United States over the last two decades, and this has been reviewed through relevant literature in this dissertation.

The reviewed literature infers that several factors—geographical distances, flexibility in schedules, availability of transportation, professional obligations, disabilities, or other issues—contribute to the inception of distance education (Janes, 2006; Schiffman, Vignare, & Geigh, 2007; Zembylas, 2008). However, among the numerous perceptions on the necessity for online education, the argument of Burns (2006) that online education is growing because of the flexibility of modes of instruction concurs with the current study's perception on distance education. Among the reviewed literature, the theoretical frameworks that stood out were those by Glesne (2011) and Brann (1992), where postmodernism was referred to as “a historical period of time marked, in part, by globalization, industrialization, and the proliferation of technologies” (Glesne, 2011, p. 12) and as not something that comes after modernity but something that comes as a reaction to modernity (Brann, 1992). Thus, online education is viewed as an outcome of the era of globalization and advancement of technology, particularly in information and communication.

The research above was based on the inference from some reviewed literatures that the

advent of new and better technologies contributes to the increasing preference of students to engage in online education for most of the courses undertaken in degree programs (Allen & Seaman, 2007; Hebert, 2007). This led to an exploration of the experiences Deaf students who had chosen to pursue a degree through distance learning. Through the lens of postmodernism and on the philosophy of Constructivism, an understanding of distance education as a learning option for students was explored. The current study recognizes online education as a technology-based system that has developed over time where individuals can participate without being physically present in a traditional classroom set-up.

As previously mentioned, online learning allows students who are restricted by time, distance, or other factors to attend institutions of higher education around the world. However, a search of the literature failed to locate any empirical research study that explored the views of Deaf students about the effectiveness of online classes in higher education. For the data collection, a qualitative method specifically the use of interviews was utilized, which allowed the researcher to gain in-depth information from the participants and an opportunity to quickly validate and confirm the answers. The experiences of the participants were analyzed through coding using the NVivo software and were presented in a narrative format.

Challenges Experienced

The research shows that new technologies have served as a challenge for the notion that students should only learn in traditional classroom settings particularly for deaf students, this has been seen as the most viable by some critics of online learning (Toffler, 1991). Since deaf college students are a continuously growing population in the United States, the challenge of whether or not they should only learn in traditional classroom settings is in question. The Americans with Disabilities Act (ADA) of 1990 mandates legislation that entitles all persons

with disabilities to equal access to the facilities, goods, services and accommodations of all private and public entities and establishments in the United States, and this includes all types of schools and educational institutions. The current study explored how deaf online college students experienced attending three Conviron Colleges located in Northeast Florida. It was particularly important to understand how these students and their instructors were affected by the online learning experience. Additionally, the study focused on how online teaching tools affected the overall learning skills of deaf students, how prelingually deaf students developed English language proficiency and how deaf students from non-English speaking countries got along in class.

Recent and rapid technological developments may have kept pace with the new and affordable applications of communications technology, and the changing educational needs of a learning society but questions still arise on the effect of distance education on the quality of learning. The greatest challenge experienced in the study is the role of teachers in service. Most participants agreed that teachers in service are lacking in knowledge about Deaf students; how should they handle classes involving Deaf students, laws about students with disabilities, and how can they teach effectively in classes with Deaf students?

Another challenge of online courses made some Deaf students participating in this study more inclined toward traditional face-to-face educational methods as they found it difficult to navigate what one called “an unexplored educational process.” As observed, participants mostly faced challenges regarding two aspects of the course of study, namely: 1) challenges with handling technologies; and 2) challenges with the overall online degree in the program. Regarding technological issues, the most common challenge was that participants did not initially know how to operate the technology. One respondent specifically stated, “To know and

develop dominion of online programs was challenging at the beginning” (Participant G, Interview, 12 October2013) while another cited, “Using the computer program (software) caused me much difficulty in the first phases of studying” and added that “establishing an agile Internet network . . . is essential” (Participant C, Interview, 12 October2013). Other technological issues that participants felt caused hindrances were that they were facing difficulties in searching for information that was relevant to their course of study online. One respondent stated, “It was hard for me to decide to sit down to seek for information and to write in the computer.” (Participant A, Interview, 12 October2013). These problems caused much frustration for the students who did not have the guidance that would help them adjust to this new method of learning.

On a related note, connectivity problems contributed to technological difficulties, with a large number of participants specifically citing internet service interruptions as troublesome. Another challenge with the overall program was the unavailability of professors and resources. Although this factor was one of the least significant challenges that participants cited, one participant did admit that this lack of availability was “intimidating.” Other participants mentioned that finding resources in the online library was challenging, with one respondent specifically calling it “a headache.” The fact that most students needed resources in Spanish simply added to the difficulty. If participants could not find such resources, they felt “limited” or had to rely on translating the resources into Spanish, which, one respondent stated, “Delayed my course of studies” (Participant G, Interview, 12 October2013).

Although these issues are important, the issues related to technology were a greater challenge. One respondent said, “Communication with professors [was a problem]. They could not be available when I contact them; that was intimidating to me. I felt limited when not finding needed resources delivered online”(Participant B, Interview, 6 November2013). As

previously mentioned, although enhanced technological applications are used in delivering the learning content, students cannot effectively learn unless they already know or are trained to use the technology. The role of the teacher therefore needs to change with this technological advancement. The teacher's main responsibility is to guide the students in this new method of learning and that includes providing content for learning and adopting the technological applications (Aylesworth, 2010).

The salient disadvantages within the sample group included the technological gap, reduced direct interaction with professors and other students, a need for self-motivation, and a reduced practical ability to present analysis. The most prevalent disadvantage was reduced direct interaction between professors and students, cited by a majority of the participants. One participant specifically stated, "Group meetings and class discussion are necessary to promote learning from experiences of other students" and found these lacking in the online education experience (Participant A, Interview, 16 October 2013).

Reduced practical ability in studies followed and was also cited by a substantial number of participants, several of whom pointed out specific classes that should be taught face-to-face, because showing auditory work in an online environment was difficult. In other words, the distance between the learner and the instructor in this subject does not seem to have an appreciable effect on the quality of teaching and learning.

Overall, the data distribution is skewed toward the focus on availability of resources, especially when addressing the issue of unavailability of professors or course instructors. However, this is understandably acceptable, judging from the fact that multiple students stated that they prefer face-to-face interaction with their professors and instructors rather than online-automated content. One respondent acknowledged that online-learning programs are "tailored to

the needs and accessibility of working adults” but also maintained “some courses would require other resources to be enhanced. Online education program should not be exclusively off-campus” (Participant J, Interview, 16 October 2013). Another respondent also admitted the value of distance education for Deaf students proposed “a hybrid program” that combined face-to-face courses with online courses. Similarly, another respondent stated that some courses “are not designed for impersonal contact; ‘hands-on’ is an important piece” (Participant N, Interview, 16 October 2013).

These revelations from the participants are valuable, as they will help with careful and practical shaping of the course framework to overcome the salient challenges of an online education program. Institutions can use the distribution of data in order to develop course procedures and content that may address these issues. The challenges in online education may necessitate restructuring the framework of the distance-learning program by offering counteractive measures that eliminate or otherwise reduce the challenges.

Experiences Gained

This section discusses the assessment on the experiences gained by the participants based on the factors surrounding their experience and their comments on their experience with distance learning. These surrounding factors included the age, level of teaching, and years of experience of each Deaf student, as well as the highest degree attained. A combination of these factors provided the best platform for understanding these students’ experiences in an online degree program.

A certain age gap between various participants changed the way they perceived the experience and, therefore, gained different things from it. The oldest respondent in the study was aged 24, whereas the youngest was 18 years old. In addition, several mentioned their learning

experience helped them better understand each student's individual learning needs, with one respondent specifically referring to learning deficiencies: "I learned new strategies for detecting learning problems in classroom, and on how to solve them" (Participant J, Interview, 12 October2013).

The experiences gained by participants focused on aspects that could be directly implemented into their careers and changed or affected their teaching strategies. The main reasons due to which participants chose online education were; curiosity about the distance learning system, lack of a geographically close degree program, and other factors related to family and professional lifestyle. Among the participants, the major positive experiences gained were increased capacity in handling technological aspects of education, increased knowledge, increased capacity in teaching, and enhanced communication. Among those who joined the online program due to family and professional lifestyle or commitment, a majority found that they mainly gained increased knowledge and better technological skills, more so than did any other group or cluster. This finding attributed to the fact that most of the individuals in this category were older than the rest of the sample.

Technological skills learned are often of great aid to older individuals that did not have prior technological knowledge. By acquisition of these new skills, they are better able to access information regarding the latest trends. One participant stated that the "online studies system maximizes the possibility to obtain resources that we can put in practice then in classroom," thus improving teaching (Participant H, Interview, 12 October2013). Another stated similarly that he could "transfer to classroom what I learned about the use of technological resources to teach" (Participant P, Interview, 12 October2013). Regarding the technological aspect of the course another respondent said, "It caused me to modify several of my educational practices and to

make more use of technology” (Participant I, Interview, 12 October2013). As a result, the participants appreciated not only the knowledge gained but also their learned technological capacity.

The only other group that appreciated this increase of capacity in learning was those who took online courses to save money and time. The trend among those who were curious contributed to the knowledge that most have experienced traditional face-to-face classroom instruction, and the introduction of other teaching methods increased their ability through online applications or through some other computerized means.

1. “I could implement in classroom immediately what I was studying” (Participant M, Interview, 12 October2013).
2. “I applied information learned in course readings to my classroom” (Participant D, Interview, 12 October2013).
3. “It had an impact, being active in teaching allowed me to transfer acquired knowledge immediately” (Participant B, Interview, 12 October2013).
4. “I could apply acquired knowledge in classroom. Teaching became an extension of distance education” (Participant F, Interview, 12 October2013).
5. “It has influenced my educational practice in a positive way because allowed me to reflect on the daily process of teaching and learning, and to collect students’ feelings and needs”(Participant A, Interview, 12 October2013).

There were other instances where participants expressed the same feelings as previously cited. Implementation of the practices learnt during the course of the online study not only satisfied the participants academically, but also professionally, as they were able to introduce new practices into their style of teaching.

This study's results also established that online courses are much cheaper than traditional courses that involve additional expenses for traveling, library space, accommodations, fees for additional activities on campus, and an overall sustenance fee, as shown in the literature of Ryan and Deci (2004) cited earlier in Chapter 1. One respondent specifically mentioned that studying online saved money on travel expenses, while another cited not having to purchase food on-campus as another cost-savings. The respondent said that he was able to "avoid trips to a center of study," which saved time and expenses (Participant E, Interview, 16 November2013).

A deaf student may find paying such fees to be financially difficult; since time for education means time not at work, significant savings need to be accrued in advance of admission to a traditional program. In addition, online degree programs are flexible and can run parallel to normal teaching tasks, a benefit that several participants cited. One respondent noted in particular that distance learning "allows us to establish a structure of studies in terms of time planning but adjusted to personal reality," which could include family, job, etc. (Participant I, Interview, 16 November2013).

Another respondent said, "I achieved my goal in the time proposed, and I did not neglect the family aspect. Besides, I saved me a lot of money upon doing it from my home." (Participant C, Interview, 16 November2013). While another cited, "It was the right choice because I did not have to sacrifice responsibilities to achieve my goal." (Participant N, Interview, 16 November2013).

Better communication abilities were also experienced by a small number of Deaf students who chose online courses due to a lack of schools or institutions close to where they lived. The increase in the speed of information transmission brought by distance education is a significant characteristic of the postmodern age, and opens up doors for knowledge exchange, as individuals

can selectively gain the appropriate elements for their condition and situation (Lyotard, 1984). It appeared that the experiences gained by Deaf students were influenced primarily by each individual's motivational factor, as well as those factors that contributed to the choice of online education. It is also worth noting that the diversity in the sample aids in knowing the current trends and motivational factors that led to students opting for an online method of learning as opposed to a traditional classroom set-up. The overall experiences were positive for a majority of participants as they overwhelmingly described their experiences as “intellectually enriching,” “good,” and “refreshing.” One notable response was, “It was a good and demanding experience of growth in the educational aspect” (Participant D, Interview, 16 November 2013). While another respondent commented that distance learning was, “Refreshing and different to what was usual” and “It was an extraordinary experience of growth” (Participant B, Interview, 6 November 2013).

These positive reactions provide an understanding to the growing number of admissions to online education programs, despite the challenges and limitations of the online method of learning. The benefits offered by distance learning attributes to an increase in technological awareness in schools and education institutions, an increase in the use of online education at lower levels of education, the effective marketing of online courses, and the proliferation of institutions that offer online education in a variety of subjects.

Distance Education Impact to Deaf Students

No doubt, Deaf and hard of hearing students may find themselves socially and/or geographically isolated and this may be even more pronounced for them when participating in distance learning. Distance education is steadily becoming more popular in the general population and this trend is being more favored in programs for students and teaching

professional involved with deaf education. Deaf and hard of hearing students are impacted by distance education in different ways than hearing students, but this is only limited to the level of technology-aided instruction capability given to them. As shown in this dissertation, with distance education, instructors and students are physically separated but this does not have to be a barrier to distance education for the deaf students any more than it is for the hearing students.

In the perspective of Deaf college students who are enrolled and who dropped out, online classes affect their writing skills. For motivational and educational purposes, the study revealed that it is necessary to provide sufficient time to Deaf students to pass from the written sentence text under analysis to the video or chat. Online tutors play a vital role in the completion of in-class sessions, which entail blended learning and multilingual educational setting. The provision of further flexibility to the contents of the course, which are designed for the specific needs of individual students, is included in the duties of online tutors. Since they are online while developing educational tasks means, online tutors can supervise the class progress in terms of the contents of the course and every student can ask questions regarding these contents. At the same time, these online tutors can supervise the community discussion of the students to facilitate and improve learning in specific subjects.

In the perspective of Deaf college students who are enrolled and who dropped out, online class improve their reading skills. Within the course management system, there are sufficient tools to be utilized owing to the extensive range of reading materials that can be conveyed through the Internet. Online teachers and students can access video and audio links from the internet to multimedia that can be used for activities for reading skills development. Materials can be visually presented through multimedia and sign-using software, which even schools on narrow budgets can afford. With various technologies, teachers can access reading materials with

the elements of audio, video, and multimedia enabling content to be delivered through print, sign, and spoken language in asynchronous and synchronous settings.

Online classes affect their social and academic satisfaction in myriad ways, in the perspective of Deaf college students who are enrolled and who dropped out. From the participants' experiences, it was ascertained that distant learning programs may suit the needs for accessibility and convenience of working adults. However, it is important to note that the challenge of online courses made some Deaf students participating in this study more inclined toward traditional face-to-face educational methods as they found the program difficult to navigate.

The participants' positive reactions provide an understanding to the growing number of admissions to online programs, despite the challenges and limitations of the online method of learning. The benefits offered by distance learning contribute to an increase in technological awareness in schools and education institutions, an increase in the use of online education at lower levels of education, the effective marketing of online courses, and the proliferation of institutions that offer online education in a variety of subjects.

In the perspective of Deaf college students who are enrolled and who dropped out, online class met their specific learning needs. Several factors lead to the perception of online education as a good learning option including higher chances of course completion, convenience and flexibility in time and location, cost-saving opportunities, and the benefitted ability to balance academic and family time. On the other hand, the factors that lead to the perception of online education as a bad learning option included hesitation prior to engaging with the online education, difficulties faced in the transition from traditional classroom set-up to online learning

environment, and other negative experiences such as unavailability of resources and the lack of clarity regarding course requirements.

Most Beneficial Areas in Learning Experience

Since the participants had varied learning environments, they also differed in their perception regarding the benefits of an online degree. The participants' perceived the main benefits in pursuing an online education program as: convenience and flexibility in studies and work-related functions, saving time and money, and gaining online research skills. Online education usually becomes a part-time activity (Gottwald, 2005). As McMahon (2009) indicated, online education is most commonly utilized as a tool that aids in completion of multiple activities within the same period and at the greatest convenience. The participants significantly indicated that the online program provided an opportunity for learning on their own terms and chosen time in contrast to the necessity to commit to the traditional classroom schedule. The participants also strongly preferred the convenience and flexibility of pursuing a degree online, which allowed them to study at home and gave them the capability to balance their domestic and professional responsibilities.

In addition, the most beneficial areas in the participants' learning experience were in terms of studying and the interactive gain of knowledge. The study participants experienced increased capacity in studying, increased knowledge, better communication skills, and increased capability in handling technological issues. Montgomery (2000) claimed that technological advancement has introduced new and better ways of teaching and learning. Through the online program, some participants indicated gaining more awareness on their field of study through exposure to a wider variety of up-to-date writings and research in education, and access to education books and other resources online. The opportunity to study online was viewed by

other participants as a positive influence on their educational practice since it allowed them to reflect on the daily process of teaching and learning as well as reflect on the students' feelings and needs. Moreover, the result of the study suggested that distance learning positively affects the reading and writing skills of the Deaf students. However, it should be noted that there is a significant difference between the effects of distance learning to reading and writing of the Deaf students. The reason behind the difference is the fact that reading does not account much for the reading achievement of a student.

Challenges in Distance Learning

There are specific challenges that deaf students may face with online education verses students who are not hard of hearing face. Deaf and hard of hearing students may find these challenges to be qualities they may not have or think they may not have, which makes online education more difficult for them (Terrell, 2005). For example, deaf students studying online may have difficulties in contributing to class discussions or may find out the online learning environment possess a challenge to their usual modes of learning and knowledge retention (O'Malley & McGraw, 1999). As stated, deaf students may also have concerns about isolation and limited access to library resources. They may also experience technology problems and find that instructors may not be flexible and sensitive to their needs. However, even with these issues, online education programs offer all the opportunities to earn college degrees from home or anywhere they choose to attend their online classes, just not in the physical classroom environment.

Nevertheless, although technological developments may have kept pace with the new and changing educational needs of society, questions still emerge on the effect of online education on the quality of learning. Ironically, the most common challenge that the participants experienced

in the online program was the technological aspect of distance learning. Some participants encountered difficulties in operating the technology and with the accessibility of the internet, which greatly matters in the success of the program. Most people participating in online education are adult learners, and many of them begin using computers only when they begin online courses. This barrier obstructs their understanding of web-based courses (Bowman, 2006; Mancuso, 2008). The technological problems caused much frustration for the students with a large number of participants specifically citing internet service interruptions as troublesome.

Another challenge with the overall program was the unavailability of professors and guidance, with some participants citing this challenge as “intimidating.” Although enhanced technological applications or software were used in delivering the learning content, students are not expected to effectively learn unless they already know or are trained to use the technology. Furthermore, the challenge of lesser direct interaction between professors and students was cited as a disadvantage, which had a significant impact to most participants. Some study participants noted the lack of group meetings and class discussions, which are deemed necessary to promote learning from experiences of other students. A substantial number of participants also cited the reduced practical ability, particularly in studies since some classes should be taught face-to-face as pointed out by the participants, and learning and demonstrating auditory work in an online learning setting was found to be difficult. Therefore, the distance between the learner and the instructor in these particular subjects does not seem to have a practical effect on the quality of teaching and learning.

Overall, the distance-learning program creates an ideal environment not just for attaining positive learning results but also for effectively implementing learned ideas in the classroom. Implementation of the practices learned during the course of the online study not only satisfied

the participants academically, but also professionally, as they were able to introduce new practices into their style of learning.

Interviewer Experiences

In this section, the interviewer wants to share her personal experiences with the case considering the context and circumstances that have influenced her experience. Self-reflection serves as a personal statement to discuss the role of the researcher during the study (Marshall & Rossman, 2006), allowing a look back as a student. Although the study was focused on describing experiences of the participants, the researcher is prompted to comment based on self-reflection.

The researcher was enrolled in a Masters of Deaf Education degree program because of a personal desire to excel, to become better prepared in the field of teaching, and to acquire expert knowledge. While the degree could have been pursued via traditional degree programs, The researcher instead chose to participate in a distance-learning program for the same reasons that many students choose distance education. First, there were no traditional options for pursuing a master's degree close to home. In addition, the researcher had multiple roles, including student, wife, mother, and employee, which made the flexibility of distance learning an attractive option. Distance education turned out to be a good choice because the program allowed the creation of a scheme of studies that fit a busy schedule that was also easily adjustable. The researcher is bilingual and ASL is his first language; he has personal experience in this subject area (hence the chosen topic).

The distance learning experience was an enriching and challenging one. Through self-reliance and self-motivation, I became acquainted with current trends in the field and with research on distance learning programs in general. The most valuable benefit of the program

was that it required development of analytical thinking and reflection on theoretical writings presented in the course work. My capacities to write, edit, and learn about research methods also improved through completing the dissertation. In terms of learning practice, better ways were learned with which to create and implement lesson plans and expand knowledge on how to incorporate material with other academic subjects. In addition, distance education allowed reflection on the daily process of studying and learning, and improved methods with which to transfer the acquired knowledge to students.

The experience did have its frustrations, however. For example, it was frustrating to receive contradictory guidance from tutors. At times, tutors did not offer detailed instructions to carry out tasks efficiently or effectively and it was difficult to perform tasks based on such imprecise guidelines. In addition, finding resources beyond the ones offered by professors and learning to synthesize information based on understanding what professors required, were both difficult tasks. Despite these frustrations, completing the program was a suitable, but demanding experience of growth in the educational aspect. As far as distance education is concerned, I would suggest creating space in the program to teach some courses face-to-face, especially those that require technical elements and/or direct interaction. This would be a hybrid program that adapted instructive components to other courses.

In one instance, one of the female students (Participant K) that I interviewed spoke about a particular history class she took last term. She had an interpreter in this class as she did in all of her face-to-face classes. When interpreting from ASL to English, there is always a slight delay in relaying information from teacher to student. That being said, the student had several questions in this class and would use the interpreter to ask her questions to the teacher. Due to the slight delay in interpretation, the student's question would come a moment or two after the instructor

had moved on to something else. By the time the interpreter would ask the question to the instructor, he would become agitated because the rest of the class had moved on to a different discussion. At one point during her questioning, the instructor asked the interpreter to please ask the student to hold all of her questions until the end of class because she was holding everyone else back from moving forward.

As a bilingual person, the researcher knows from experience that the Deaf student is not aware of the delay in interpretation. This is a violation of the American with Disabilities Act which states that all persons with disabilities should enjoy facilities, accommodations, goods and services of all private and public entities equally as able persons do. This includes fair service and treatment in every academic institution. The student had every right to participate in the class lecture as the other hearing students. As a deaf student, she is entitled to some accommodations and it is not right or fair for the instructor to request the student not to participate in class lectures by holding her questions until the end of the class. This student pays the same tuition as the other hearing students and is entitled to the same treatment. The student expressed this situation as one of the reasons she preferred online instruction.

In another instance, one of the male participants in the study told me of an experience he had in his speech class. During the class, his interpreter would voice all of his questions; however, when it came test time, the students were required to stand in front of the class and give their speech. The professor informed the Deaf student that he would not be allowed to use his interpreter to help him. Although some deaf students voice (meaning speak while they sign) this particular student never used his voice and relied on his interpreter to voice for him. As per stipulation of the ADA, students with disabilities like deafness have the right to be guided and helped accordingly by their interpreters. The interpreter served as the extension of their voice

since they cannot talk the way the mainstream students do. In that case, the interpreter in the classroom, knowing the students rights, went straight to the vice president of the college and demanded the situation be addressed to the instructor. In the end, the instructor was told to allow the interpreter to serve as the student's voice in the classroom.

This type of experience is upsetting for different reasons. Because I am bilingual and have Deaf parents, it is frustrating to hear that professional educators do not know the rights of their deaf students and do not have a better understanding of the interpreter's role in the classroom. Secondly, I have interpreted at the college level and would personally never accept an instructor treating a deaf student differently than any of the other hearing students in the classroom. As a professional in the field, I had a hard time accepting the lack of instructor awareness of ADA and equal and fair treatment of deaf students.

Another experience shared, one of the female students in the participants struggled in English grammar (as many English as second language learners do). In an English composition class, the deaf student would notice the interpreter speaking to the instructor alone after class. From experience, I can attest to the interpreter serving as the students' voice in the classroom and nothing more. This means that at no time should the interpreter speak to the instructor without interpreting for the student. After class, the instructor for this English Composition class would tell the interpreter that the Deaf student was really struggling and they need to learn how to use the online component to the class to help with spelling errors and minor grammatical issues. Then, the teacher would ask the interpreter personal questions regarding the student, such as "Has she ever taken an English class before" and "The student is a very poor writer, how is she doing in her other classes?"

This is highly inappropriate and disturbing. The interpreter is not taking the class; the

Deaf student is taking the class and the instructor needs to speak directly to the student not the interpreter. This is also a concern for future research. Instructors need to be told on the first day of class that they are to always speak to the student, not the interpreter. In most educational settings, the interpreter is hired by the institution and is an employee of that institution, not of the students. This being the case, the interpreter usually meets the student on the first day of class for the first time and is not privy to any of their personal information.

Implications of the Study

The qualitative phenomenological research approach of this study served to investigate the effects of online learning for deaf and hard of hearing college students, as compared to their experiences in the mainstream classroom setting. The analysis of how online learning affects the writing and reading skills of deaf students, as well as the development of the English language proficiency of prelingually deaf students and those from non-English speaking countries. The current study focused on the use of online teaching tools and their effects on significantly improving postsecondary education for deaf students in the United States. This phenomenological study was conducted to evaluate the efficacy of the investigation and to express the perspectives of deaf college students regarding the topic. Participants were deaf online college students who use American Sign Language (ASL) as their native tongue and who attend online classes in one of the three Conviron Colleges in Northeast Florida.

The findings of this study have a number of important implications for future practice. The research findings are particularly important in understanding the types of challenges experienced, and perceptions of Deaf students in the course of pursuing their degrees through online programs. The results of this study can provide prospective students and educators within the higher education sector a better understanding of the experiences of Deaf students in a

distance-learning program.

An examination on the viewpoints of students in the online program offers an insider's view, which is important for uncovering the benefits and disadvantages of online learning for students, institutions, and the profession. Results of the present study may assist instructors in improving curriculum content and strategies for teaching and learning, thus enabling a greater understanding of the factors that motivate students to pursue a degree through the mode of online learning. Moreover, the findings of the current study provide an opportunity for potential distant learning students to understand the implications of online learning before their actual participation.

This study goes beyond academic boundaries and provides insight into the requisite technological capacity and capabilities for the proper functioning of online education. The support of the environment is critical to the success of the online education process, and this research mainly incorporates the qualitative value that is added to the education process.

The qualitative aspects such as increased knowledge and the increased ability to handle syllabi and material related to learning will be of great benefit. In any field, educational content is dynamic and the syllabus and teaching design must change to accommodate new content presented to elementary and high school students. The creation of proper timelines also aids teachers in implementing the acquired information for their students and/or to private students. This rapid learning and increase in knowledge makes teachers more sought-after in the job market and generally leads to better credentials.

The impact of this study's results is potentially high among students who have yet to enroll in online degree programs. The study, therefore, acts as a guide to the most important aspects of distance education that these students are bound to encounter as they enroll in online

programs. Noteworthy is the fact that the identified challenges affect a majority of students. In addition, this study's results will aid the regulatory services that moderate online courses in different countries. Through this study's findings, such regulatory bodies can readily forge proper infrastructure and educational content building to equip distance-learning students to overcome the challenges of online education. The overall effect is the creation of a well-organized and well-structured platform that can be utilized across various institutions.

Researcher Bias/Self-Reflection

In this chapter, an explanation about my own experiences with the case is included. This is considered the context and circumstances that have influenced my involvement in online education. This kind of self-reflection serves as a personal statement to discuss my role during the study (Marshall & Rossman, 2006). Although the study is focused on describing experiences of the participants, as a bilingual researcher, I make assertions based on my individual experience on the case. Thus, I was mindful about the way by which my own experiences are introduced within the context of this study.

Conclusion

Grounded on the post-modernism view of distance education, the technological evolution and the global change in society affected the educational approaches and the evolution of distance education. Through a qualitative research approach, the current study explored the experiences of Deaf students who had chosen to pursue a degree through distance learning, to provide a response for the four primary questions guiding this research.

The first question this research attempts to answer is why Deaf students choose to pursue a degree through distance learning. Personal success through skills enhancement and attainment of additional knowledge and incentives were ascertained as the main reasons behind the

participants' enrolment for the online program. Other reasons for joining online distance learning include; the lack of a geographically closer option, professional and/or family lifestyles, and availability of sponsorship, peer pressure, and the attractiveness of learning in a different learning environment. Another question guiding this research is: what are the benefits of online learning found as significant to the Deaf students' environment? The main benefits in pursuing an online program were convenience and flexibility in studies and work-related functions, saving time and money, and gaining online research skills. In terms of learning experience gained in an online learning program, the most beneficial areas were the learning skills and the interactive gain of knowledge. The online program resulted to an increased capacity in teaching, increased knowledge, better communication skills, and increased capability in handling technological issues to Deaf students. The research findings also prove the viewpoint that technological innovations are beneficial in the realization of independent learning and better learning effectiveness.

In terms of the attitudes and perceptions gained from attendance in the online program, Deaf students increased theoretical understanding of the field, enhanced communication skills, and increased capability in handling technological issues. In addition, three different perceptions on distance learning were ascertained. Positive experiences in the online program led to the perception of distance learning as a good learning option while negative experiences resulted to an opposite perception. The challenges experienced in the online learning program such as reduced professor and student interaction and technological difficulties were perceived as a learning opportunity for those who had positive experiences, specifically perceiving distance learning as a tool for independent learning; meanwhile those with negative learning experiences perceived online learning as a learning deficiency. Apart from professional growth, distance

learning also leads to the development of reflexive, critical, and analytical thought on academic writings through the coursework. Furthermore, distance learning creates a sense of personal accomplishment when students independently achieve their goals.

There is currently a rapid change in schools in terms of classroom settings, student demographics, and the roles of deaf education teachers. With the number of deaf students attending public community colleges, and four-year universities increasing, online and inclusive/traditional classroom settings need to address equal access to communication for such students in online and blended learning courses. The need for hard-of-hearing students to participate in the mainstream student population is increasing, and the regulation on the privacy of student data has become stricter along with the incorporation of federal laws and greater criticism on the basis of human protection.

The qualitative phenomenological research approach of this study served to investigate the effects of online learning for deaf and hard of hearing college students, as compared to their experiences in the mainstream classroom setting. The study made an analysis of how online learning affects the writing and reading skills of deaf students, as well as the development of the English language proficiency of prelingually deaf students and those from non-English speaking countries. The current study's hypothesis focused on the use of online teaching tools and their effects on significantly improving postsecondary education for deaf students in the United States. This phenomenological study was conducted to evaluate the efficacy of the hypothesis and to express the perspectives of deaf college students regarding the topic. Participants were deaf online college students who use American Sign Language (ASL) as their native tongue and who attend online classes in one of the three Conviron Colleges in Northeast Florida.

Finally, the current study aimed at exploring the challenges that Deaf students encounter

in completing an online program. The most common challenges experienced in distance learning include: technological gap, lesser direct interaction between instructor and students, and reduced practical ability, where learning and demonstrating work in an online learning setting proved to be especially difficult. Distance learning programs may suit the needs for accessibility and convenience of working adults; however, in the case of Deaf students, some courses would require other resources to be enhanced.

Scope and Limitations

American Sign Language is the only form of sign language accepted and will exclude the Deaf participants who use other forms of sign language. Although the three campuses I have chosen for my research sites are separated by distance, the Deaf population in Northeast Florida is a supportive community. The probability is high that I will personally know some of the participants from Deaf events, functions, or social activities.

Research previously conducted has addressed many of the concerns involving students with disabilities in the postsecondary environment (Slike et al., 2008). Many important Deaf education scholars have contributed to what is known about Deaf learning styles and patterns of success (Toscano, McKee, & Lepoutre, 2002). Although past literature of Deaf studies and Deaf education is immense, the study of online learning in the education of the Deaf is limited, and obstacles in understanding have not been addressed.

A major limitation was that participants were either deaf or had difficulty in hearing. For this reason, interviews could only be done through the use of sign language (American Sign Language) and the help of interpreter. These limitations did not degrade the quality of research because the procedures and requirements of the research are well defined. However, these limitations led to the consumption of additional time and resources for the research work. The

extra information that was gained about participants' experiences in online education created a wealth of knowledge essential to the entire research.

A major limitation in the data recording and analysis was the fact that most of the responses that participants gave were coded in general terms that, at times, might obscure the finer points of the response. For example, the motivation toward online learning was as varied as the number of participants. Additionally, a single participant could offer more than one response to a particular question, but the cases could only accommodate a single attribute per case. Moreover, the use and incorporation of multiple responses to the casebook were limited, and the trends for a single attribute could not be expressed as percentages. Manifestation of researcher's bias may be present since this research is a personal interest of the researcher. Researcher's bias can affect the selection of sources. It can be highly selective to confirm one's belief. In order to address this limitation, the researcher attempted to use a wide range of primary and secondary data. Wrenn, Stevens, and Loudon (2002) noted that primary data is important in research since data is collected from the field and used in answering the study questions. They defined primary data as the type of information which the researcher identified for the first time when conducting the research. There are various ways of collecting primary information. For example, one can use observation and collect information from the participants through interviews or administering questionnaires which can be carried out through the use of e-mail, telephone, or face-face interviews. Existing data that is helpful to the researcher is referred to as secondary data. It is important that secondary data is examined before collecting primary data because this type of data will help to understand the research problem and lay a good foundation prior to conducting the study. In addition to the potential problem of selection of sources, it should also be noted that

not all survey instruments and information collected was used. The researcher only coded the relevant answers given by the participants.

Future Trends and Recommendations

The future seems bright for online learning due to the exponential growth in technological capacity and capabilities, institutional systems, and students' overall understanding of computers and technology. However, these influences should not be taken for granted. At the same time, these influences form an ideal environment for the online transfer of knowledge and skills corresponding to the demands and pressures within the population of learners worldwide. The challenges and benefits encountered by students enrolled in distance learning are topics worthy of being explored in further research. The current study recommends that distance education programs, particularly for Deaf students should not be exclusively off-campus and institutions may consider a specialized program that may combine face-to-face courses with online courses.

With the salient limitations of distance education, it is important for institutions to introduce mentored learning systems for the transfer of critical knowledge to students. In mentored learning systems, the moderator or instructor is charged with pre-recording live classroom situations and posting these recordings in the online course so that students can view them. The students then assimilate the knowledge at a later time or date. If any concerns or questions arise, students can post them through the same platform and receive feedback in the shortest time possible. This type of learning helps alleviate the issue of unavailability of professors that students currently experience in many online courses. Additionally, there is a dire need for the creation of a platform over which students can be taught practical skills.

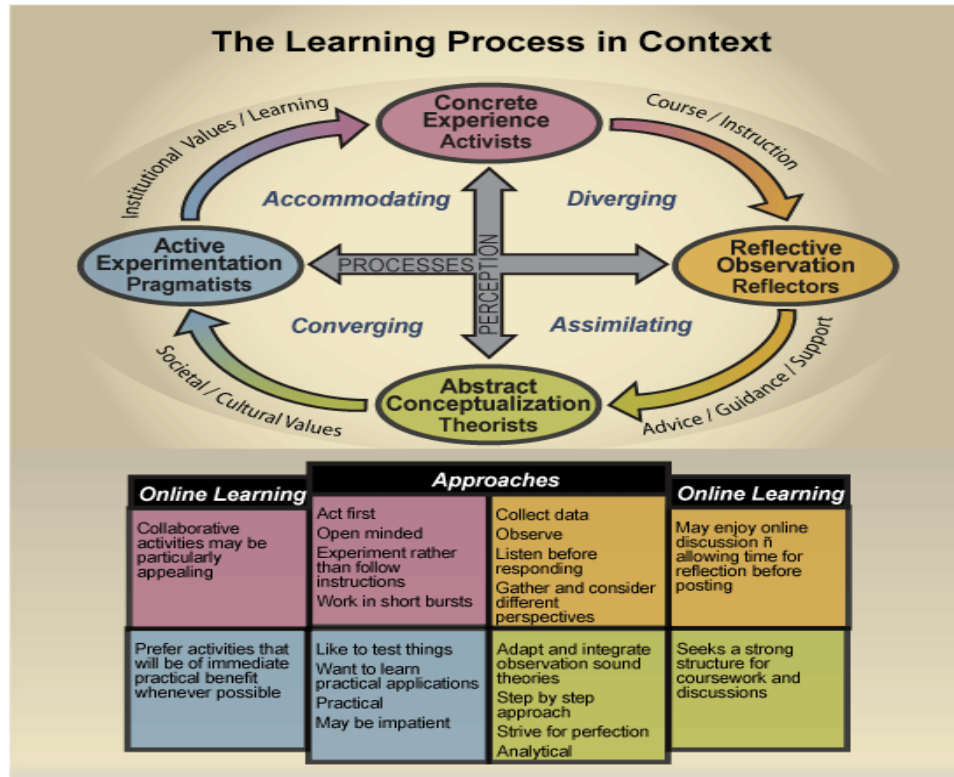
An additional recommendation that should be incorporated into online courses is the

ability to organize all the material within the system on a standalone platform such as a PC.

Doing so would aid students in the continuation of course work when connectivity to the server is not available or is congested by the number of users logged in. The student would feel independent in the administration of the course work, and course requirements could be completed at the student's pace and speed. Additional care must be taken in the administration of the coursework, and guidance and examinations should be supervised and closely monitored by course moderators or instructors. Through the incorporation of such models of operation, online education could reduce the number of challenges and complaints that arise from students, as seen in this study. The students' benefit and the institution boosts its admissions.

Regarding the marketability of online courses, it is very important to increase the factors influencing students to enroll in such programs. Most participants in this study only enrolled due to curiosity and the need for a flexible and comfortable life. Creating student awareness of all the benefits of online courses over traditional learning methods might strongly influence students to enroll in distance learning programs. This also shapes the expectations of the students and in a way reduce the over-expectations that leads to disappointments and bad perception of distance learning courses.

Figure 5. Depicting the Distance Education Learning Cycle (Kolb, 1984; Mumford, 2006)



The diagram above shows the model and kind of structure that distance education is expected to fit into in the foreseeable future. It must be remembered that the dynamic nature of distance education and the field of education in the contemporary world creates room for well outlined online leaning approaches and cycles. This all converges towards offering high quality education to the students and further adding value to the job market or employers’ institutions.

The representation above therefore eliminates the unclear structure and unclear understanding of the future trends by depicting clear channels for the online collaboration in line with education system and requirements. The reflective conceptual and active experimentation processes are all linked together with the concrete experiences in the perception process. This assists in the study to pin-point the link between perceptions and experiences as seen in the

recorded data and analysis thereafter.

The perception process leads to the characteristics of online learning being more streamlined and well elaborated. The approaches too are quite simplistic and to the point. Notably the level of collaborative activities in the online learning environment were greatly increased. Such collaborative activities are aimed at gaining immediate practical benefit and experience over a period of time. This can be attributed to the fact that most online education would be done concurrently with the practice in education e.g., teachers would spend part of their time in class teaching students especially when they are not engaged in the distance learning program.

As a result, this produces a higher level of enjoyment of the distance learning discussion and activities and the students would also seek for a stronger course framework and structure as seen at the bottom right hand side of the diagram. As depicted in the analysis area, the increased technological understanding is expected to create better discussion forum for the distance learning students through online interactions. This can further be fostered by a stronger course structure for the distance learning program. Approaches such as the adaption of observation sound theories as shown in the diagram.

The overall picture as shown by the diagram is that distance learning is expected to build an environment in which all stakeholders' concerns are taken into consideration during the process of knowledge transfer from the instructor to the students (McPherson & Nunes, 2009). The completeness of the environment determines the success rate and effectiveness of the distance learning program right from the inception and the sustenance. The various aspects of the environment such as sponsorship, job market, and the technological advancement are all supposed to fit into this model and be well accommodated so as to contribute towards continued

success of the distance learning program.

The future belongs to the institutions that offer online education while addressing the concerns raised by students who have gone through the system. Addressing these concerns creates an environment in which online courses continue to improve and the effectiveness of such courses for the students and the hosting institution continue to increase.

In the case of Deaf students, the following recommendation should be considered. Online education is prone to creating negative experiences for students who are not well prepared and do not know what to expect from the coursework. This situation creates a need for proper awareness among Deaf students and those who are in private practice so that when they make the decision to enroll in online courses, they will receive a value education for the money and time they invest. To reduce the number of dropouts, orientation and guidance should be adequate upon admission. These factors would significantly increase the overall quality of the professionals produced through distance learning.

According to the Learning Needs and Evaluation Center, an organization catering the needs of Deaf and hard of hearing students, students who are in this category should be accommodated according to their preferred communication mode, experience, and degree of loss of hearing. Hence, an institution may consider the following types of service providers to help the Deaf students cope with his situation:

1. Sign Language Interpreter – This service allows the student to understand what is being said or discussed by the teacher through English or American Sign Language interpretation.
2. Oral Interpreters – as opposed to Sign Language Interpreters, oral interpreters aim to “present what is being said in class on their lips (i.e., mouthing), possibly substituting

similar words that are more easily distinguishable on the lips” (Learning Needs and Evaluation Center, 2006, p. 3).

3. Cued Speech Transliterators (CST) – this technology helps the teacher to present what is being discussed and taught in a class by combining a hand signal and oral interpretation.
4. Computer-Assisted Realtime Transcription (CART) – This service provider uses a laptop or stenography machine that key in what is being said and discussed in class. It is usually positioned in front of the Deaf students to let them read what is being written on the screen.
5. C-Print/TypeWell Transcription/Computer-Assisted Note taking System Reporters – This service provider also works like CART; however, it only uses laptop computer or regular keyboard to key in what is being discussed in a class.

It has been proven that deafness is no longer a barrier when it comes to schooling.

Students who are deaf or have difficulty in hearing can resort to distance education with the aid of assistive technologies and other aids to communication. Distance education provides a venue for Deaf students to acquire knowledge as much as the mainstream students do. As opposed to traditional classroom set-up where Deaf students are mixed with hearing students, distance education gives an impression to the Deaf students that they can also learn regardless of their condition. Understanding the needs of the Deaf students will allow the policy makers to design better learning policies in the future.

One thing I found interesting is that none of the student participants in the study mentioned anything about the interpreter component, or lack thereof, in the online learning environment. There are key components in the face-to-face classroom environment that are missed when taking online classes. First, in the classroom all Deaf students were accompanied

by an ASL interpreter. This means that the interpreter would translate the English spoken word into the grammatical format and structure of American Sign Language. This is a very important component that none of the participants in the study pointed out. As a second language learner, I still rely on ASL structure for proper interpretation in many education settings. It is disappointing to see that none of the participants pointed this crucial fact out when analyzing the differences between face-to-face class structure versus online formatting. The college or institutional ways pays for the interpreter for each individual student. With this knowledge, one must ask why the Deaf students cannot get the same interpreter accommodation online. Why can the institution not pay for an interpreter to interpret the online component for each deaf student? This would even save money if there were more than one deaf student in each class. Having an interpreter that will translate each written lecture into American Sign Language on the bottom of the screen would allow more comprehension and added accommodation to each Deaf student.

Secondly, one of the benefits of face-to-face classroom lectures is the discussion that arises from the random questions that are brought forth during the class lecture. Often, the online format is structured in a way that does not allow open discussion, which carries over to other issues or topics of interest to the student. Although most online classes do have a discussion section and forum, the discussion in a “live” format typically bring forth more in-depth conversation. This is something that cannot be captured in an online format without an open discussion period where students participate at a set period of time. Lastly, this study recommends that instructor awareness on deaf student rights need to be further explored. Teacher training should be given of high primacy because reviewing the comments, suggestions, and answers of the students, teachers are lacking in knowledge on laws, guidelines, and ways to handle classes with Deaf students.

Research Suggestions

This study points to the need for further research in deaf education and higher education in general. A quantitative study using a larger group could help quantify the needed accommodations by looking at colleges centered around the Deaf population and bringing such trends over into the hearing sector. More focus on the language aspect of the culture should be researched to glean a better understanding of the true barriers deaf students face in an online learning format. Possibly introducing ASL gloss in place of English sentences would aid in comprehension. Keeping language as the center focal point would also help ease the transition into higher levels of learning.

Research studies show promise that distance learning is a viable option for deaf and hard-of-hearing students. As stated, Deaf learners are a heterogeneous group that consists of individuals with varying backgrounds, cultures and skill sets. These students may need special accommodations to participate in distance learning, but they are capable. Technology tools are capable of enhancements to accommodate ASL communication, for instance. This is particularly true if the students are on a satisfactory level of language proficiency. Future research can aim at finding out and using the input of the deaf students for developing new technologies to assist them in the online classroom environment. With this, educational institutions and facilities would be better equipped to handle the growing number of deaf and hard-of-hearing students wanting to attend online school. This would be a positive outcome for the deaf students, as well as their interpreters and instructors.

It is evident that the deaf community is a group that is continually expanding and seeking out higher education, and accommodating their specific needs is both legally and morally justifiable. As defined above, “deaf” only means that a person has auditory dysfunction or

hearing loss. This does not mean that they are any less entitled to equal treatment and equal access to quality education, no matter if they choose the traditional classroom setting or online distance learning. With advancements in technology and the continual growth of the Internet, challenges faced by deaf students can be increasingly eliminated. It is no doubt that the future holds great rewards for people with disabilities in the areas of education and career pursuit. The rest of the world just needs to understand the deaf community's lived experiences, as well as their perceptions so that disparities in learning opportunities are eradicated.

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Appendix A: Informed Consent Form

Dear _____,

My name is ...

The purpose of this hermeneutical phenomenological study is to provide a better understanding of how deaf students perceive online learning by researching lived experiences and bringing attention to needed accommodations that might bring online learning up to an equal learning standard for both the hearing and deaf student body. In general, this study aims to investigate the advantages deaf college students enjoy from online learning over the mainstream classroom setting. In particular, three skills of deaf college students, which are writing, reading, and English literacy, will be explored on the basis of the impacts of online learning on twenty-first century postsecondary education for deaf students. This study will use multiple sources of evidence to create a framework for understanding from survey, interviews, and student focus groups.

Your participation will involve answering questions on a questionnaire and participating in a recorded interview. Your participation in this study is voluntary. Whether or not you take part in this study is your choice. There will be no penalty before, during, or after the study is over if you decide not to be in the study. If you decide not to be in the study, you will not lose any benefits you are otherwise owed. You are free to withdraw from this research study at any time. Your choice to leave the study will not affect your relationship with this institution or your grade (if applicable).

Because you are a student, taking part in this research is not a part of your institutional class work or duties. You can refuse to enroll, or withdraw after enrolling at any time before the study is over or after it has been completed but not published, without any effect on your class standing or grades. You will not be offered or receive any special consideration if you take part in this research.

To withdraw, simply contact the researcher by email or phone and your name will be immediately withdrawn from the study.

The results of the research study may be published but your identity will remain confidential and your name will not be disclosed to any outside party.

In this research, there are no foreseeable risks to you. Although there may be no direct benefit to you, a possible benefit of your participation is helpful in creating a stronger more effective pre-service teacher education program within the metropolitan area.

If you have any questions concerning the research study or want to withdraw from the study, please call me at _____ or _____@_____.

As a participant in this study, you should understand the following:

1. You may decline to participate or withdraw from participation at any time without consequences.
2. Your identity will be kept confidential.
3. The researcher has thoroughly explained the parameters of the research study and all of your questions and concerns have been addressed.

4. In signing this consent form, you are granting permission for the researcher to digitally record the interview. You understand that the information from the recorded interviews may be transcribed. The researcher will structure a coding process to assure that anonymity of your name is protected. If you do not give permission for your responses to be digitally recorded, DO NOT sign this consent form.
5. Data will be stored in a secure and locked area. The data will be held for a period of three years, and then destroyed by shredding documents and erasing digital recordings.
6. The research results will be used for publication.

As a student participating in this research study, you are allowed access to the personal information and opinions. Information specific to student colleagues from the focus group is strictly confidential. It is expected that students of the School shall respect and preserve privacy, confidentiality and security of confidential information. Violations of this policy include, but are not limited to:

1. sharing confidential information that is not within the scope of the focus group conversation;
2. misusing, disclosing without proper authorization, or altering confidential information;
3. disclosing to another person discussion during the focus group including names of participants, ages, opinions or questions stated;
4. failing to take proper precautions for preventing unintentional disclosure of confidential information;
5. posting or discussing confidential information via text messages, electronic mail, and/or any electronic social network sites (e.g., Facebook, Twitter, etc.)

Unauthorized release of confidential information may also subject the violator to personal, civil, and/or criminal liability and legal penalty.

“By signing this form you acknowledge that you understand the nature of the study, the potential risks to you as a participant, and the means by which your identity will be kept confidential.

Your signature on this form also indicates that you are 18 years old or older and that you give your permission to voluntarily serve as a participant in the study described.”

Signature of the interviewee _____ Date _____

Signature of the researcher _____ Date _____

Appendix B: Survey Questions*Survey for Deaf college students:*

	Enrolled in Online Learning	Dropped out of online learning
1. Which educational setting helps you develop your writing skills more efficiently?		
2. Which educational setting helps you develop your reading skills more efficiently?		
3. Which educational setting helps you achieve more social acceptance?		
4. Which educational setting enhances your academic performance more efficiently?		
5. Which educational setting meets the specific needs of the twenty-first century deaf college students more efficiently?		

Appendix C: Interview Questions

1. Where do you physically reside when participating in class activities or assignments? (ex – at home, in the library, on campus, etc.).
2. What kind of atmosphere do you prefer while studying? (ex – quiet with limited visual distractions, in a busy and crowded mall, in the privacy of your bedroom, etc.).
3. What role does the online instructor play during the class? (ex – as the facilitator, as an active participate, just someone that grades assignments).
4. What negative experiences do you face in online learning?
5. What perception of an online learning environment does a Deaf student perceive as positive?
6. What do you perceive they are missing academically in class?
7. How do feelings of social isolation in an online environment impact your class involvement?
8. Based upon experience, what would you recommend for improving online learning?

Appendix D: Focus Group Questions

1. What are the factors important for learning? Does online learning satisfy these?
2. What are the factors that instructors of online classes need to consider?
3. What are the factors that online learning offers that traditional classroom does not?
4. What are the factors needed for a good online learning experiences?
5. What are the factors that can foster good student-teacher relationship in an online learning classroom?
6. What are the factors that make online learning unsatisfactory?
7. What are the factors that make online learning satisfactory?
8. What are the necessary preparations do Deaf students need to make to undergo online classes?
9. What do deaf students expect to get from online classes?
10. How do deaf students foster good relationship with other deaf students through online classes?

Appendix E: Components of the Interview

Components of the Interview:

Introduction (5-10 minutes)

Review confidentiality and read consent statement

Create a relaxed environment

Dialogue

Question: Have you received my introductory recruitment email explaining my research and the format that will be used?

Question: Are there any questions?

Explain the purpose of the interview.

The purpose of this interview is to explore your experiences and perceptions on distance learning in education, which you have completed at _____. During the time we have together, I would like to get an understanding of your insights and observations pertinent to the subject matter of the study.

The open-ended questions are intended to obtain your personal experience and perceptions. I would encourage you to answer these questions as explicitly as possible. I will look forward to hearing openly from you about learning experiences you have gained while pursuing your degree in education through distance learning. Please try to recall and describe specific instances and examples that illustrate your responses. For example, you can share detailed stories of your experiences using online distance learning tools such as computers, software, and other technological learning equipment. Besides, on your perceptions related to the accessibility of online learning environment.

Ask permission to record interview

I would like to record this interview on a cassette tape for easy transcribing and to get an inclusive record of what is said, since the notes I take will not be as comprehensive as I will require. Your anonymity and confidentiality will be preserved; no one other than I will listen to anything you say to me. The interview time may take about one hour. If you agree to volunteer and participate in the research process, please read this consent statement prior to the interview. The research results will describe what you and others have said predominantly in summation. No responses will be ascribed to you by name.

Please, do you have any objections with regard to recording this interview?

Would you give me permission to tape the interview?

Do you have any questions before we begin?

Appendix F: Interview Questions

1. What are your motivations in choosing to study through online education?
2. What are the factors that led to your decision to participate in distance learning?
3. On reflection, is distance learning the right choice for you? If so why? If not, why?
4. How will you describe your overall distance learning experience?
5. What is/are your most valuable learning experiences while being a distance learning student?
6. What is/are your most difficult learning experiences while being a distance learning student?
7. What are the advantages and/or disadvantages of pursuing a degree through distance learning?
8. What specific information learned from the online program do you identify as important and relevant?
9. Has your studying practice been affected by the process of studying online? (If yes, please indicate in what ways).
10. What are the significant challenges for you during your online studying?
11. What obstacles or difficulties do you face while working with distance learning tools, including technology?
12. Is there anything else you would like to add?

The primary research questions and associated interview questions that guided the interviews follow.

- Research Question 1: Why do deaf students choose to pursue an online course through distance learning degree program, as opposed to pursuing the same at a traditional university?
 - Interview Question 1: What were your motivations in choosing to study your course in online education?
 - Interview Question 2: What were the factors that led to your decision to participate in a distance learning student in online education?
 - Interview Question 3: On reflection, was distance learning the right choice for you? If so why? If not, why not?
- Research Question 2: What positive experiences do deaf students report as a result of enrolling in an online school distance learning degree program?
 - Interview Question 4: How would you describe your overall distance learning experience?
 - Interview Question 5: What was/were your most valuable learning experiences while being a distance learning student?
 - Interview Question 7: What are the advantages and/or disadvantages of pursuing a degree through distance learning?
- Research Question 3: What challenges do students report as a result of enrolling in an online school distance learning degree program?
 - Interview Question 6: What was/were your most difficult learning experiences while being a distance learning student?

- Interview Question 10: What were the significant challenges for you during your online education?
- Interview Question 11: What obstacles or difficulties did you face while working with distance learning tools, including technology?
- Research Question 4: What learning experiences do deaf students attending an online school distance learning degree program find significant for their profession and teaching environments?
- Interview Question 8: What specific information learned from the online program do you identify as important and relevant to your studying practice?
- Interview Question 9: Has your studying practice been affected by the process of studying online? (If yes, please indicate in what ways).
- Final Interview Question: Is there anything else you would like to add?

Appendix G: Interview Protocol

Part I: Notes for the Interviewer

Overview

Tape-record the interviews if permission is granted

Interview in a neutral setting

Each interview lasted 60 to 75 minutes

Interview Methodology

Interviews were implemented with a customized approach allowing for an in-depth investigation. Follow-up questions were used to stimulate interviewee memory. The interviewer used a semi-structured question design (Part III). Interview contained:

A predetermined set of 12 questions

All predetermined questions were the same for participants

Designation of Interviewee: _____

Location of Interview: _____

Date: _____

Start Time: _____

Finish Time: _____