# Demographics and Preparation Levels of K-12 Online Teachers

by

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ABSTRACT

This study collected and examined information on K-12 teachers currently involved in online education in the United States. The purposes of this study included defining the demographics of these teachers, determining the extent to which they were formally educated and/or trained to teach online, and to compare these findings to those from a similar study conducted six years earlier. A web-based survey, including questions in both open and closed form, was used to gather data from 325 participants currently teaching at least one online class at publicly funded K-12 online schools nationwide. Survey questions covered the following six domains: a) personal demographics, b) educational background and experience, c) pre-service training, d) in-service training, and e) current online teaching assignments. The results of this study indicate that those currently teaching online to K-12 students have demographic characteristics that are similar to face-to-face teachers, particularly in terms of gender, age, and ethnicity/race; however, the online teachers generally had higher levels of educational attainment, more years of teaching experience, and were significantly more likely to teach on a part-time basis. It was found that teachers working with K-12 students online are self-motivated, place a high value on learning and education, and enjoy the challenge and process of using technology for this purpose. Based on findings, only a limited number of university-based teacher preparation programs address any aspect of the methods and techniques required for teaching online, and even fewer offer online field placement opportunities for pre-service teachers. For the most part, current online teachers were found to have received training after graduation, while working in the field. Further research is needed to specifically define and empirically validate the methods and

techniques required for effective online teaching at the K-12 levels so that formal educational and training programs can be further developed to effectively prepare future K-12 online teachers.

DEDICATION

This work is dedicated to the teachers in my life,

who have supported me each step of the way.

My first and most influential teachers, my parents,

Sam and Anne;

My most patient and inspirational teacher, my husband,

Scott;

and

My youngest and most enlightening teachers, my children,

Van, Finn and India

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# INTRODUCTION

## Overview

Online education at the K-12 level is in the early stage of an exponential growth pattern that will ultimately result in an entirely new educational paradigm (Miller & Ribble, 2010). The need for highly qualified classroom teachers has always been critical, but now such teachers must also be trained to meet the challenges of conveying knowledge to students that are separated in space and time (Charania, 2010). Moreover, this new category of teachers must be capable of teaching without face-to-face contact, designing and developing course content in a technology-based environment and delivering content in a way that will both engage the remote student and assure that the content is actually learned. Unfortunately, there is a significant disconnect between the expanding scope of online education and the training of teachers expected to teach in this uniquely different format. While some form of online learning is now available in every state in the United States (Watson, Murin, Vashaw, Gemin, & Rapp, 2011), only a small minority of current K-12 online teachers have actually received formal training on how to teach in this challenging environment during the course of their teacher education program (Archambault, 2011; Dawley, Rice, & Hinks, 2010). Accordingly, the current status of online K-12 education must be viewed against a background of relevant teacher training that is extremely limited or, in some cases, non-existent.

## Current Status of K-12 Online and Blended Learning

During the 2012-2013 school year, 31 states had at least one fully-online, statewide school (Watson, Murin, Vashaw, Gemin, & Rapp, 2012). Enrollment in K-12

courses offered by online schools has increased from 50,000 course enrollments in 2000 (Clark, 2001) to over 2 million in 2009 (Patrick & Dawley, 2009). Watson et al. (2012) report that about 5% of all K-12 students in the United States are enrolled in at least one online class. Queen, Lewis and Coopersmith (2011) found that 55% of public school districts were offering some form of online experience for their students during the 2009-2010 school year. Among those schools, 74% reported an interest in expanding the online opportunities being offered in the following years (Queen, Lewis, & Coopersmith, 2011).

There are many reasons for the increasing number of K-12 students who attend school online, including, for example, the ability to work at one's own pace and the ability to take courses that are otherwise unavailable. As of 2010, Advanced Placement (AP) or International Baccalaureate (IB) courses in common subjects were offered in fewer than 34% of public school districts (Lee, Edwards, Menson, & Rawls, 2011). Advanced courses as well as credit recovery are the most common reasons that school districts have made online offerings available to students (Lee et al., 2011).

Online programs have evolved over the past two decades through the efforts and largely independent actions of geographically and politically separated administrative structures. Several formats have been experimented with and refined, and in the process, different terminology has emerged. Only recently has there been a trend toward more unified and shared identification of the basic formats by which K-12 content is delivered, in whole or part, through the Internet.

As defined by Clark (2001), a virtual school is "an educational organization that offers K-12 courses through Internet or Web-based methods" (p.1). According to Watson et al. (2012), one of the fastest growing educational formats is blended learning, a

combination of face-to-face learning with online learning. The structures of blended learning models are themselves evolving to include different elements of communication and different proportions of face-to-face and digital delivery.

Online programs are also being categorized on the basis of the administrative structure by which the underlying program is sponsored, funded, or controlled. For example, an online program may be administered by a school district, a state-level entity, a consortium of schools or districts, or a post-secondary institution.

With the rapid growth in virtual schooling at the K-12 level, there is a corresponding growth in the need for qualified K-12 online teachers (Charania, 2010; Kennedy & Archambault, 2012b). Independent of the content being offered, the skills needed to effectively teach in an online environment are materially different from those learned in a traditional, teacher education program designed solely for face-to-face instruction (Barbour, 2012b). Interestingly, the vast majority of current research relating to online education is focused on the student and not the teacher. Very few teacher education programs include courses or training designed for the specific preparation of online teachers (Barbour, Siko, Gross, & Waddell, 2012). Furthermore, little is known about the relevant education and training of those currently teaching K-12 online students in the United States (Archambault, 2011). This lack of information, coupled with the gap in research on effective practices for teaching K-12 students online suggests a significant disconnect between the rapid expansion of online course offerings and the training of teachers in the design, preparation, and delivery of such courses.

## Definition of Terms

**Overview.** The extensive volume of literature pertaining to online learning and its relation to traditional and other forms of learning has produced a vast array of terms with divergent and sometimes inconsistent meanings and applications. This makes understanding and comparing studies and meaningfully defining the current status of these forms of education difficult. For purposes of the current study, an attempt was made to normalize and simplify definitions currently used in research, including the definitions developed by the Innosight Institute (Staker & Horn, 2012) and Keeping Pace with K-12 Online & Blended Learning (Watson et al., 2012). These definitions are presented in the following section.

There are three fundamental forms of modern learning that can be described and defined as (a) face-to-face learning, (b) online learning and (c) blended learning. Their definitional relation to one another is depicted in Figure 1.

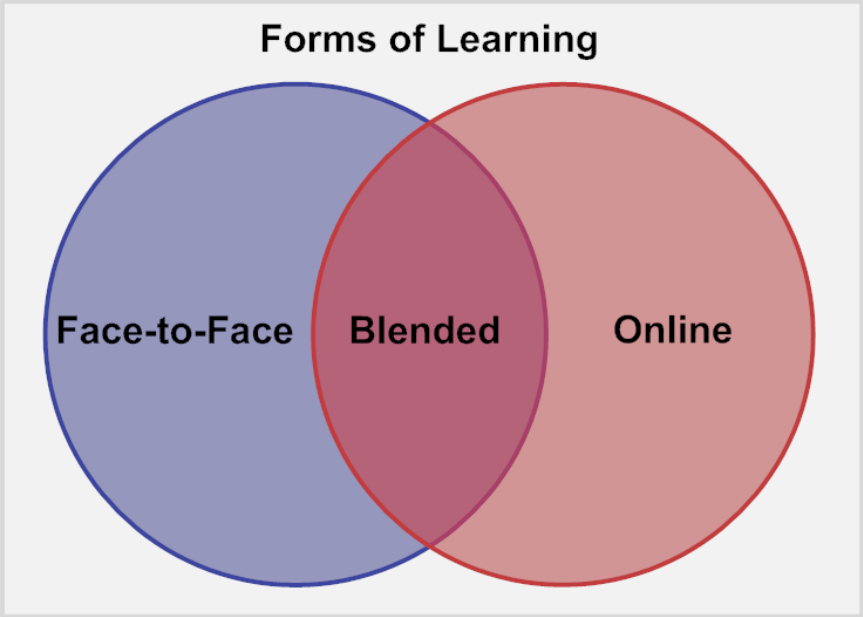


*Figure 1*. Forms of learning.

Figure 1 illustrates that face-to-face learning and online learning can each exist independently or can be combined to form blended learning, which incorporates elements from the other two categories. In the broadest sense, face-to-face learning involves a teacher directly delivering content to a student; online learning involves the student remotely obtaining content over the Internet; and blended learning involves an integration of elements from both face-to-face learning and online learning.

The following sections generally define and provide examples of each of these basic terms and subcategories. A table collecting and summarizing these definitions is included at the end of this section.

**Face-to-face learning.** Historically, learning has been delivered directly from an instructor to a student on a basis that is quite literally "face-to-face." This is sometimes referred to as the "brick and mortar" or "traditional learning" model. In this study, the term face-to-face learning is defined as education in which a student learns in a *formal educational* program, at a *central* location and *with an instructor*.

Face-to-face learning includes two major subcategories: *traditional* face-to-face learning, where content is delivered or led by the instructor and *technology-rich* face-to-face learning, where the instructor uses or manages technology to enhance or augment content delivery. Most public schools in the United States still deliver content in the *traditional* face-to-face format. Increasingly *technology-rich* learning is being implemented, where the school uses digital textbooks, devices, lesson plans, and the like while a teacher is present and directly delivers content and instruction to the student, as opposed to delivery over the Internet.

**Online learning.** With the advent of the Internet and the increasing availability of high-speed connections, a second important form of learning has emerged. This form is referred to as online learning and is defined as education in which a student learns in an educational program, through student-controlled Internet delivery of content and instruction. Online learning further breaks down into two major subcategories: *formal online learning*, where the educational program is structured and accredited; and, *informal online learning*, where the educational program is unstructured. Florida Virtual School is an example of a program that offers *formal online learning*. An example of *informal online learning* would be the use of educational games or specialty lessons to electively provide enhanced learning or tutoring to students.

**Blended learning.** Blended learning is increasingly being adopted by K-12 education with many different combinations of face-to-face and online learning. The term blended learning is defined in this study as education in which a student learns partially by *face-to-face* learning **and** partially by *formal online* learning. Innosight Institute (Staker & Horn, 2012) developed four different models to characterize the forms of blended learning currently being used in K-12 schools nationwide. Normalized definitions and examples of these four learning models are summarized below:

***The rotation model***. This model is an educational program in which the student in a particular course moves on a fixed schedule between face-to-face learning and at least one online element. This model further breaks down into four subcategories: Station-Rotation (e.g. KIPP LA Empower Academy (Aaron, 2012)), Lab-Rotation (e.g. Rocketship Education (Clayton Christensen Institute, 2012d)), Flipped Classroom (e.g. Stillwater Area Public Schools (Clayton Christensen Institute, 2012e)) and Individual-

Rotation (e.g. Carpe Diem Collegiate High School and Middle School (Clayton Christensen Institute, 2012b)).

***The flex model.*** This model is an educational program in which the student learns on a schedule that is individually defined and executed with the student moving between primarily online learning and varying types and degrees of face-to-face learning. The San Francisco Flex Academy (Clayton Christensen Institute, 2012c) is an example of a program following the *Flex* model.

***The self-blend model.*** This model is part of an educational program in which the student elects to pursue at least one formal online course in addition to his/her traditional, face-to-face program. Quakertown Community School District (Andrejko, 2012) follows the *Self-Blend* model.

***The enriched-virtual model.*** This model is an educational program in which a student within each of the courses learns almost entirely online with minimal face-to-face learning. A program that uses the *Enriched-Virtual* model is the Albuquerque eCADEMY (Clay Christensen Institute, 2012a).

The following table combines the forgoing definitions and examples to provide a definitional structure that allows for the categorization of almost any combination of current learning environments.

Table 1

*Types of Learning Environments*

| Types | Basic Learning Models | Sub-Categories | Definitions | Examples |
|---|---|---|---|---|
| Face-to-Face | *A form of education in which a student:*<br><br>Learns in a formal educational program at a central location with an instructor. | Traditional | Face-to-face learning where the content is delivered or led directly by the instructor. | Most public schools in the United States |
| | | Technology Rich | Traditional face-to-face learning where the instructor also uses or manages technology to enhance and/or augment the delivery of content. | Any school that uses digital textbooks, devices, lesson plans, or the like but still has content and instruction delivered by the teacher and not over the Internet. |
| Online | *A form of education in which a student:*<br><br>Learns in an educational program based on student-controlled online delivery of content and instruction. | Formal | Online learning where the educational program is structured and accredited. | Florida Virtual School |
| | | Informal | Online learning where the educational program is unstructured. | Educational games |
| Blended | *A form of education in which a student:*<br><br>Learns in an educational program that combines both:<br>Face-to-Face Learning<br>and<br>Formal Online Learning | Rotation Model | An educational program in which the student in a *particular course moves on a fixed schedule* between face-to-face learning and at least one online element. | KIPP LA Empower Academy (Station), Rocketship Education (Lab), Stillwater Area Public Schools (Flipped-Classroom) and Carpe Diem Collegiate High School and Middle School (Individual) |
| | | Flex Model | An educational program in which the student learns on a schedule that is *individually defined and executed* with the student moving between *primarily* online learning with *varying types and degrees* of face-to-face learning. | San Francisco Flex Academy |
| | | Self-Blend Model | An educational program in which the *student elects* to pursue at *least one formal* online course in addition to their traditional, face-to-face program. | Quakertown Community School District |
| | | Enriched-Virtual Model | An educational program in which the student learns *almost entirely* online with *minimal* face-to-face learning within each of the courses. | Albuquerque eCADEMY |

**Hybrid forms.** The Clayton Christensen Institute further examines how the various blended learning models they defined fall into different hybrid forms (Christensen, Horn & Staker, 2013). Christensen et al. (2013) define a hybrid as "a combination of the new, disruptive technology with the old technology and represents a sustaining innovation relative to the old technology" (p. 4). The types of sustaining hybrid innovation that are characterized by combining the benefits of both online learning with face-to-face learning can be found in the Station Rotation, Lab Rotation and Flipped Classroom blended learning models. In contrast, the remaining blended learning models (Flex, Self-Blend, Enriched Virtual and Individual Rotation) offer experiences that do not include the main features of face-to-face learning. In fact, very little of what is known as a traditional classroom is included in these models. Students are in control of the pace of the content and often the place in which it is delivered (Christensen et al., 2013).

Although there are many variations on the basic learning environments summarized in Table 1, this study will focus only on those in which learning occurs in a *formal online* learning program for K-12 students in the United States. This particular model is depicted in Figure 2, where face-to-face, blended and informal online learning models are graphically excluded from the strictly online model.

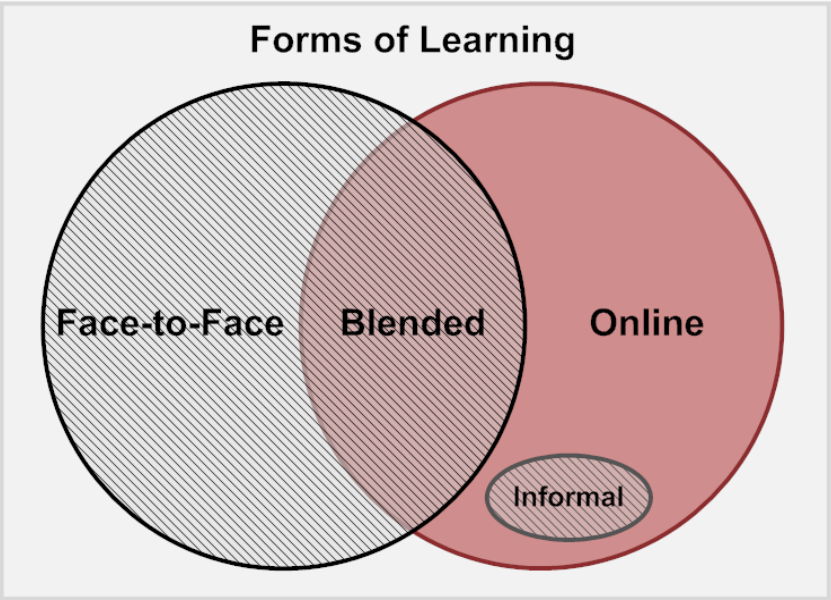


*Figure 2.* Formal online learning (excluded areas crosshatched).

**Administrative Structures of Online Programs**

**Overview.** There is a wide variety of online programs currently being offered to K-12 students across the United States. These programs combine several key elements into different administrative structures. Some of the factors defining these structures are based on a diagram adapted from *A Primer on Virtual Charter Schools: Mapping the Electronic Frontier* (Vanourek, 2006). The defining factors result in a spectrum where different administrative structures are arrayed in terms that include comprehensiveness, grade level, governance, geographical range, funding sources, and responsibility for course fees. A particular administrative structure may offer courses that range from a single, supplemental course to a full-time, comprehensive program. Although most programs distinguish between grade levels (elementary, middle, and high school), increasingly, the sharp boundaries between grade levels are disappearing with students allowed to take courses that match their personal attainment levels. Also disappearing are

the geographical limits that have historically limited student attendance. With high speed communications, there is little difference between attending a locally produced course or one that is offered thousands of miles away. Each administrative structure uniquely provides for its own management and governance, funding sources, course acquisition, course delivery, assessment of fees and attendance/completion requirements (Watson et al., 2012).

There are four main types of administrative structures involved in the sponsorship, control and execution of K-12 online programs; these are identified by the descriptive terms "District," "State," "Consortium" and "Post-Secondary" (Watson et al., 2012). While many online programs are privately administered, this study will focus only on teachers who have acquired state-issued teaching credentials and have met other state-level requirements. Such requirements are not always a prerequisite to teaching in private schools and for this reason; the present study will not include privately administered online institutions.

**The single and multi-district structures.** District level online programs can include a single district that produces and offers online programs for its own students or multiple districts that work together to produce programs for common use within their combined districts.

***Single district programs.*** Single district programs represent the most rapidly expanding of the different administrative structures that offer online programs (Watson et al., 2012). These programs are created and offered by a single school district to the students within the district. A few non-district students may enroll, but they are the exception rather than the rule. The courses offered may be fully online, but most of the

courses provide supplemental online learning for students enrolled in topically related full-time courses offered within the district. Because these courses are often tailored to the perceived needs of students within the district and are typically offered as a supplement or adjunct to an existing course, data on these programs is not generally available. Many districts use outside providers to produce and deliver these supplemental courses, while others, like Deer Valley Unified School District eSchool, offer courses based on state standards and taught by their own instructors ("eSchool Student Guide", 2013).

***Multi-district full-time programs.*** Multi-district programs are usually completely online and available to all students within the state or multi-district jurisdiction. In many cases, these schools are organized as separate charter schools so data are available for study. Some multi-district programs are funded by grants or course fees, however, most operate using funds allocated to each student from state public education budgets. To ensure uniform accountability, student achievement in these programs is measured based on the same methods used in other public and charter schools within the same state. An example of a certified multi-district online school is ACHIEVEk12 in Colorado. Although this program is offered through Colorado Springs School District 11, all students residing in Colorado are eligible to enroll in ACHIEVEk12 (Colorado Springs School District 11, 2011).

**The state-level structure.** State-level online schools are sanctioned and governed pursuant to legislative initiatives that extend to all public schools. The state-level structure has been favored in the past and enjoyed an annual enrollment increase of 16% in 2012 (Watson et al., 2012); however, this format is starting to take a back seat to other

administrative structures. The larger state online schools--such as Florida Virtual School, North Carolina Virtual Public School and Georgia Virtual School--still remain prominent, but many state-level online schools are shrinking in size or have remained relatively small due to limited funding (Lynde, 2012). The initial acceptance of state-level programs is also being eroded by the growth of single-district, multi-district and private programs, along with programs offered by a variety of consortia. One example of a successful and growing state-level online school is the Michigan Virtual School, where enrollment has increased every year since it opened in 2000 (VanBeek, 2011).

**The consortium structure.** School districts that wish to offer online options to their students, but cannot afford the infrastructure and related costs, may choose to join a consortium. A consortium is a cooperative group of educational entities that share in the creation, distribution and related costs of courses that benefit their students. Individual member schools usually fund the courses and may recover associated costs by collecting course fees. The programs offered by the consortium can range from supplemental offerings to fully online courses and may be limited to students attending a consortium school or may be offered state-wide, nationally or on an international basis (Watson et al., 2012). The member schools provide the teachers and any authorized student can enroll in any of the courses offered. The Wisconsin eSchool Network is one of the original online consortiums. It consists of 16 school districts within the State of Wisconsin (Wisconsin eSchool Network, 2013). The Virtual High School Collaborative is an example of a consortium with an even broader reach. This very large group of schools works together to encompass 33 states and even enrolls students that attend from outside the United States (VHS Collaborative, 2012).

**The post-secondary structure.** A variety of online programs are developed and offered through postsecondary institutions. These university-based online schools are designed for K-12 students and are subject to some form of accreditation standard. Watson et al. (2012) defined three elements that lead to partnerships between online consortia and postsecondary institutions: a demand for dual credit courses, a need for expertise in online courses and programs, and a need for the professional development for teachers. Queen and Lewis (2011) found that universities are collectively the largest group of providers when it comes to supplemental online courses for school districts. According to the National Center for Education Statistics (Queen & Lewis, 2011), postsecondary institutions provided course offerings to half of all districts that have students enrolled online. The Independent High School at the University of Nebraska is an example of an accredited, postsecondary-affiliated program offering K-12 course work online. This university-affiliated school offers a wide variety of core, advanced placement and elective courses to students across the United States and in 135 foreign countries (University of Nebraska High School, 2013).

## K-12 Online Teacher Demographics

**Overview.** As online teaching for the K-12 student grows, it is important to understand the background of these teachers and the extent to which they have been educated or trained on how to teach in this very different educational environment (Davis, Roblyer, Charania, Ferdig, Harms, Compton & Cho, 2007; Miller & Ribble, 2010; Archambault, 2011). Although very little research exists that focuses on the specific differences between teaching online and face-to-face, there is agreement that there are differences (Barbour, 2012b). The online setting requires the teacher to use new

forms of communication, engagement and assessment (Searson, Jones, & Wold, 2011). Certain online teaching characteristics can even vary depending on the students. For example, there tends to be more instruction delivered online when the students are older and less for the younger students (Watson, Gemin, & Coffey, 2010). Easton (2003) found that online and face-to-face teachers require similar skill sets, yet an online teacher must also manage and engage students virtually and be more of an instructional designer and interaction facilitator. The fact is there is very little research available on the characteristics and preparation of K-12 online teachers, even though the field is one of the fastest expanding uses of technology in education (Means, Toyama, Murphy, Bakia, & Jones, 2010).

**Personal demographics.** In 2008, Archambault conducted a nationwide survey examining the demographics of K-12 online teachers. The survey included demographic questions such as age, gender, race/ethnicity, education levels, course format and teaching role. The results of this study showed those teaching in the K-12 online setting were 77% female and 23% male. Glick (2011) also conducted a study to compare the gender distribution of online teachers as compared to traditional teachers and found only a minor (2.25%) difference between the online and traditional populations. Because K-12 classrooms have been historically the domain of female teachers, it would not be surprising that this dominance carried over to the online environment. Interestingly, however, Glick (2011) speculates that the proportion of female online teachers may be even higher because it accommodates an "easier integration of traditional family roles like raising children." In terms of age, the range of K-12 online teachers falls predominately in the range of 26-45 years, with 34% of these teachers being between 26

and 35 years of age and 29% within the 36 to 45 age range (Archambault & Crippen, 2009). Race and ethnicity of those who were teaching online also closely mirror the national trends observed in the case of face-to-face teachers (Glick, 2011). Archambault and Crippen (2009) found that 91% of the K-12 online teacher population was White/Caucasian, while 3% was Hispanic, 2% was Black/African American, 1% was Asian/Pacific Islander, 2% was mixed racial background, less than 1% was Native American and about 3% were self-classified as "other/prefer not to answer." During the same school year covered by Archambault's study, the National Center for Education Statistics (2008b) reported the following characteristics for traditional public school teachers: 83% White, 7% Hispanic, 7% Black, 1% Asian, 1% mixed and under 1% Native American. Glick's 2011 study showed a much smaller difference in the distribution of White/Not Hispanic teachers as between the online (81.57%) and the face-to-face (83.10%) teaching environments.

**Education and experience.** As part of a research series that began in 2007, Dawley et al. (2010) conducted a follow-up national survey of online teachers to identify "the unique needs and status of professional development for K-12 online teachers" (p. 7). Of the teachers responding to the survey, 99% held a teaching credential and 60% held a Master's degree or higher (Dawley et al., 2010). Archambault also looked at what certificates, if any, were held by the online teachers. Although 43 of the 596 participants reported having some additional certification, only two were for an Online Teaching Certificate (Archambault & Crippen, 2009). When examining the number of years the respondents had been teaching (both face-to-face and online), the authors found that the average participant had 14 years of teaching experience. Dawley et al. (2010) reported in

the most recent Going Virtual! Research Series, that 73% of responding K-12 online teachers had been teaching for a total of six or more years. In a closer examination of online teaching experience, Archambault and Crippen (2009) reported that respondents had been working at their current online school for an average period of four years. The duration of online teaching experience ranged from being a first-time teacher to a teacher having 32 years of experience, some of which involved some form of distance education. As recently as 2010, Dawley et al. found that 12% of newer teachers did not have any face-to-face teaching experience before undertaking their current online teaching job. In addition, Kennedy and Archambault (2012b) found only 1.3% of all university level education programs offered field experiences and training in how to teach online.

**Teaching assignment.** There are many variables that must be considered when describing the actual functions that must be performed in the course of a K-12 online teaching assignment. Included among these variables is the geographical distribution and cultural backgrounds of students, the range of different course creation and delivery formats and technologies, the number and size of the classes taught and the grade level, and subject matter toward which the course material and teaching must be directed.

When studying the geographical distribution of online teaches, it is clear that certain states have more online teachers than others. Archambault and Crippen (2009) found that out of the 25 states that responded to the authors' survey the states having the greatest number of online teachers were Pennsylvania (14.4%), Idaho (13.6%), Arizona (10.2%) and Nevada (9.1%). Over half of the participants in this study were full-time teachers, while 36% were teaching part-time.

The actual course delivery format in the online K-12 setting can also vary. In some instances, courses are offered on a completely asynchronous basis, where the students are independent, self-paced and can attend the online course at any time (Barbour et al., 2012). Alternatively, the course may be offered on a synchronous basis, where the students and the instructors are all online at the same time. Courses offered on a synchronous basis tend to be the most similar to a traditional, face-to-face classroom setting (Barbour et al., 2012). Archambault and Crippen (2009) reported that 81% of the surveyed online teachers taught courses asynchronously. Stated differently, over 80% of the respondents teach in the format which is the "most dissimilar" to the traditional face-to-face environment for which they were educated and trained. There would seem to be an implicit assumption that if a teacher is competent to teach in the classroom, that competency carries over to teaching online. This apparent assumption is consistent with the fact that fewer than 2% of university education programs are preparing teachers by offering field experiences and formal courses involving the knowledge and processes one must have to successfully teach students who are separated in time and space (Kennedy & Archambault, 2012a).

In most cases, the teacher assigned to a class of students was not the person who actually created the online course (Archambault & Crippen, 2009). Forty-two percent of online teachers use texts and course materials that were created by a content provider. A slightly smaller percentage (38%) report the teacher as the primary creator of the materials used in the class they taught online (Archambault & Crippen, 2009). Queen and Lewis (2011) found that courses developed by outside organizations were used in 75% of districts that offer their students online classes.

As to the course titles and subject matter being taught online, there is not one particular subject that is being offered online to an extent that is substantially greater than other widely offered subjects. Archambault and Crippen (2009) found a fairly consistent distribution of respondents teaching in the areas of Math (14%), Science (14%), Language Arts/Reading (17%), Social Studies (14%) and Humanities (12%). Within this survey, teachers who were not teaching within one of these areas selected "Other" to indicate they were teaching a course that was not listed, such as Physical Education or Business or a more general area such as multiple subjects, special education, or a combination of classes.

In Archambault's study, the questions were based upon how many total students each teacher had and how many separate groups or classes of students each teacher had. The total number of students ranged from no students at the time of the study to 2000 students, with the average being 97 students. Twenty-eight percent of the teachers reported teaching one class, while 22% reported teaching seven or more separate groups of students (Archambault & Crippen, 2009). Finally, although the study included teachers in all grades from pre-kindergarten through twelfth grade, the large majority of the online courses were offered at the high school level.

## K-12 Online Teacher Preparation

**Overview.** There is no question as to the pressing need for more and better-prepared K-12 teachers; and, this need is only amplified in the emerging specialty of online teaching (Miller & Ribble, 2010). The qualities and skills that have characterized successful K-12 teachers are necessary, but not sufficient to achieve an equivalent level of proficiency when teaching students who are learning at a different place and a different

time. Online teachers require skills and knowledge that traditional teachers simply do not need when dealing with students on a face-to-face basis (Davis et al., 2007). The problem is these skills have not been properly defined, evaluated or verified through empirical research (Barbour, 2012b). Additional research is needed to determine a better understanding of the skill set that is actually required to effectively and efficiently transfer knowledge through an intervening wall of digital technology.

It is widely, but inaccurately, perceived that the skills necessary for traditional teaching are essentially the same as those required for online teaching. In the simplest terms, it is thought that a good classroom teacher automatically will be an equally effective online teacher (Archambault, 2010). The different or additional skills thought to be necessary for teaching online have been discussed by many authors in the context of many different programs. Barbour et al. (2012) note that some of the additional elements believed necessary for online teaching may actually cause more harm than good. This is thought to occur through the introduction of what the authors refer to as "faulty methods" within teacher education programs. The focus of the present study is on how teachers are currently being trained to teach online, in an environment where the student and teacher are not communicating on a face-to-face basis.

It is generally recognized that somewhat different skills are required of those who teach at the K through 8 grade levels as compared to the 9 through 12 grade levels. These differences are dictated by the fact that the two student groups encompass materially different students in terms of age, experience, knowledge, discipline, learning skills and socialization. For different reasons, there are significant differences between teaching online and teaching face-to-face. These differences are dictated by the fact that the

teacher and the student are physically separated from one another and both must proceed without the continual expressive interchange and feedback which has been at the heart of the student-teacher connection throughout history. Unfortunately, there is essentially no credible, research-based definition of the skills and techniques necessary to convert knowledge into learning while delivering the same through technologies that limit or preclude any real-time expressive interchange between the teacher and the student (Barbour et al., 2012). The effects of this technological barrier may be attenuated as the age of the targeted students increase and as the teaching content becomes more narrowly defined and sophisticated, but these effects are clearly most challenging at the K-12 levels.

Against this background, the question is how and to what extent do educators currently learn the processes of and best practices for teaching online? As in the case of traditional teacher training, there are two basic ways by which new or experienced teachers can learn how to teach online. The first way is through a formal pre-service educational program and the second is on an in-service basis, as part of a professional development or on-the-job training program. There is a desperate need for research in both of these areas (Charania, 2010). In the following two sections, the current status of these two modes of teacher training will be reviewed in the context of an increasing need for online teachers; a need that is being driven by the widely held perception and expectation that online education will result in a K-12 system where students learn more subjects on a more efficient, effective, convenient and rewarding basis (Dillon & Tucker, 2011).

**Pre-service training.** As K-12 educational programs expand into online formats, the need for teachers who are prepared to teach in this new and different environment is also expanding. This major transition raises the foundational question "How and to what extent are teachers currently being educated and trained to teach online?" The answer to this question, as derived from the most recent literature, is summarized in this section on the status of pre-service training and the following section on the status of in-service training.

Typically, a teacher obtains certification at the K-12 level by completing a university-based course of study to obtain a Bachelor's or more advanced degree (Arizona Department of Education, 2013). These educational programs almost always include a student teaching experience in an existing classroom environment under the supervision and guidance of an experienced teacher. Ideally, students training to become certified K-12 teachers would also receive training on the methods and principled practices involved in teaching online, that is, training that would be delivered through formal coursework and by way of a supervised online teaching practicum (Compton, Davis, & Mackey, 2009). The fact is, most experienced classroom teachers have received no formal training in online teaching because they were certified before online learning became possible or even marginally implemented (Archambault, 2011). The literature indicates that only a small number of those certified since the 1990s have been exposed to this form of teacher training, simply because no such training was included in the curriculum. This lack of available training in the case of teachers having over 10 years of experience is understandable. What is surprising, however, is that only 1.3% of current pre-service teachers in formal education programs are even offered a field experience that

involves teaching online, let alone formal course work (Kennedy & Archambault, 2012b).

New teachers, who are well-prepared to teach in a traditional face-to-face setting, are not prepared to teach online. Because the demand for K-12 online teachers exceeds even the demand for classroom teachers, the first teaching opportunity offered to a new graduate may be in the online environment for which they probably will not be adequately prepared (Archambault, 2011). Dawley et al. (2010) conducted a national survey of those teaching online and reported that of the most recently hired online teachers, 12% had never taught in a face-to-face classroom, let alone online.

To equip new K-12 teachers with the skills necessary to be effective online, teacher preparation programs must include classes in the emerging techniques, strategies and technologies for teaching at a distance, along with field experiences that allow the teacher to apply these methods in a practical setting. Zeichner (2010) noted the traditional importance of closely integrating coursework with field placement and training. This is equally important in the process of training teachers to effectively educate students online. For example, it would be ideal to provide a teacher-in-training with not only coursework including instructional design, new technologies, online pedagogy and communication techniques, but also to provide a real experience in the preparation and delivery of online classes intended for the K-12 learners (Kennedy, Cavanaugh & Dawson, 2013).

Barbour (2012a) suggests that the only difference between a traditional, face-to-face field experience and an online field experience is some form of initial technical training. An "orientation" of this type would expose pre-service teachers to the different

online tools available and increase their general comfort level with the online environment itself. However, this kind of introduction alone cannot provide a meaningful understanding of the complex psychological, engagement, discipline and feedback challenges that uniquely characterize online teaching.

Unfortunately, teacher education programs face several barriers that limit the expansion of their curriculum to include courses involving methods for creating and delivering educational content online. Often there are misconceptions about the career prospects for teaching online. Pre-service teachers have a widespread belief that an increase in online courses will lead to fewer positions for traditional teachers (Compton, Davis, & Correia, 2010). In addition, pre-service teachers may never have taken (let alone created) a high-quality online course (Compton et al., 2010); and, for this reason, they may have the perception that online courses are inferior to face-to-face classroom presentations (Barbour & Unger, 2009; Miller & Ribble, 2010). An increasing number of states are now making it a high school graduation requirement that all students complete at least one online course (Watson et al., 2012). For this reason, an increasing number of those studying to be teachers do have at least some experience in online courses (Kennedy et al., 2013). Unfortunately, these early experiences online may have been modeled on poor teaching methods or lack any meaningful interaction or may demonstrate ineffective instructional design (Kennedy et al., 2013).

University faculty members can impede the offering of new courses specifically directed to the process of teaching online. Numerous reasons have been given for their reluctance to teach online courses, including a burdensome increase in workload, problems with changes in the instructor's role, lack of institutional support, a perceived

sacrifice of class quality and negative reactions by colleagues (Miller & Ribble, 2010). The modeling of quality online teaching in a teacher training program is crucial to teaching these skills (Compton et al., 2010). However, it is difficult to change or supplement teaching methods because educators tend to teach the way they themselves were taught (Miller & Ribble, 2010; Barbour, 2012b). Jo Wagner, a teacher, mentor and instructional program manager at the Florida Virtual School, writes "... the first year of teaching online is similar in many ways to the first year of teaching in the traditional classroom; however, there are many new skills to learn" (Wagner et al., 2012, p.39).

Kennedy and Archambault (2012a) found that some teacher education program personnel perceived that their pre-service teachers were being prepared to teach online simply because part of the teacher education program is delivered online. These pre-service teachers may have experienced an online environment, but they did so only as a student and not as a teacher. It is one thing to watch a good teacher; it is something else to become one.

Some teacher training programs seek to facilitate the process of online teaching by providing informative websites and instructional specialists to aid faculty members in setting up online classes (Miller & Ribble, 2010). Such efforts can be part of an overall program, but taken alone, are simply inadequate. It is imperative that colleges of education adjust their curriculum and requirements to meet the growing needs of teachers entering the workforce today. Searson et al. (2011) stress the importance for universities and colleges to re-evaluate their teacher education programs to ensure they include the skills that are really needed to teach online. The first step is to define what these skills are, and equally important, to confirm the effectiveness of these skills through empirical

testing. Even after these skills are identified and validated, it is still necessary to define the best way to teach the skills and provide training on the implementation of the skills within the context of K-12 education (Barbour, 2012b).

One response to inconsistency among teacher education programs has been to provide a set of standards for those involved in training teachers. In 2011, the International Association for K-12 Online Learning (iNACOL) revised their 2008 online teaching standards to include eleven standards outlining the skills needed to teach online (iNACOL, 2011). These standards have been widely adopted by organizations to train and evaluate online teachers. However, Barbour (2012b) indicates that these standards are not based on research, have not been verified, and "provide little systematic guidance for teaching online" (p. 505). If there are to be standards for training and ultimately for certification of online teachers, then the underlying skills required must not only be defined, they must also be empirically shown to produce measurable learning outcomes in the targeted online students. A "wish list" is not the same as a set of industry standards.

It should not be surprising that there are very few existing models of teacher education programs which prepare K-12 teachers to teach online, given the insufficient and inconsistent identification of what skills are even needed to teach online, compounded by the lack of research in support of the standards that have been suggested (Barbour et al., 2012). Examining and comparing the few models that are available and encouraging the implementation and testing of new models should ultimately lead to more consistent and coherent pre-service training programs from which more rigorous standards can emerge (Kennedy & Archambault, 2012b).

Online education and training programs for pre-service teachers can benefit from cooperative ventures between universities and K-12 online programs (Barbour et al., 2012). Kennedy and Archambault (2012b) examined existing teacher education program models across the United States. Almost 79% of the programs reported that they did not include any form of pre-service field experience in online teaching while half (49%) felt that they should offer such field experiences.

Two research-based initiatives of pre-service teacher education programs that do include elements of online teaching are the Teacher Education Goes Into Virtual Schooling (TEGIVS) project at Iowa State University and partnerships between Florida Virtual School (FLVS) and several Florida universities (Barbour et al., 2012). The relevant characteristics of these programs are summarized in the following section.

***Teacher Education Goes Into Virtual Schooling (TEGIVS).*** Iowa State University's Center for Technology in Learning and Teaching, along with three other universities, have addressed the demand for prepared K-12 online teachers by incorporating new elements into their teacher training program. To provide a meaningful introduction to the potential for online learning, an online seminar was added to the existing pre-service teaching class and an online field experience was offered early in the teacher training curriculum (Compton et al., 2010). This project sought to orient pre-service teachers to the online teacher's role of Designer, Teacher and Facilitator and to model effective online teaching practices (Davis et al., 2007).

***Florida Virtual School (FLVS).*** A second example of a program that involves preparing pre-service teachers to teach virtually is found at the Florida Virtual School (FLVS). Because FLVS has been successful in their K-12 online courses, it is an ideal

laboratory for training teachers and allowing opportunities for pre-service teachers to experience this growing setting (Barbour et al., 2012). Partnerships between FLVS and several Florida universities have been formed to offer field experiences in K-12 online courses. These internships are offered year-round through the FLVS and typically last two semesters. The program through the University of Central Florida offers two student teaching internships that last seven weeks, during the first semester. Pre-service teachers have the option to complete one of these internships in a virtual setting. Regardless of which type of internship was completed in the first semester, during the second semester, the students have the choice between a 14-week student teaching experience either in a face-to-face classroom or an online version (Barbour, 2012b).

Over the years, the FLVS internship experience for pre-service teachers has evolved to include more mentoring support. Once the university candidates are fingerprinted and background checked, they are placed with a specified subject area, state-certified teacher (Wagner et al., 2012).

Kennedy (2010) studied the virtual field experiences of three volunteer pre-service teachers placed at the FLVS through the University of Florida. While these pre-service teachers were assigned to an online teacher for a four-week period along with created activities for this experience, they were not simultaneously enrolled in a corresponding course at the university. Kennedy et al. (2013) suggest offering a related course that might include reflection on pre-service teachers' past online experiences would alleviate some misconceptions. Although this online field experience gave the pre-service teachers a clearer picture of what virtual schools can offer K-12 students, they felt that it was too short and hard to stay motivated since it was voluntary (Kennedy et al.,

2013). Currently, the FLVS is looking into working with additional Florida universities, as well as universities in other states, to offer virtual field experiences (Barbour, 2012b).

**In-service training.** As shown in the preceding sections, there are few examples of universities that offer courses and field experiences that meaningfully prepare pre-service teachers to successfully function in the online environment. Accordingly, what training is available to teachers is derived from in-service training (Barbour, 2012b). As Dawley et al. (2010) discovered, 94% of online teachers received their related teacher training from the online school that employed them and only 30% learned from teacher education programs at a university. Surprisingly, there was no training at all given to 25% of first-year online teachers. Many virtual schools, such as the Virtual High School Global Consortium, not only offer courses in online pedagogy, they require such training be taken by all newly hired teachers prior to teaching online (Barbour, 2012b).

The Florida Virtual School (FLVS) has trained new online teachers since the beginning but their training has evolved over the years to include more mentoring. The mentors are given fewer students and mentor less than 10 new teachers at a time. The new teachers complete an orientation and receive eight follow-up calls from their mentors, which are allocated on the basis of content area (Wagner et al., 2012).

The Georgia Virtual School (GaVS) is another example of an online school that has developed teacher training and mentoring for their teachers. Their training program is divided into four different parts, in which mentoring is included as an integral component. For newly hired teachers there is a New Instructor Preparation Course, which meets once a week for 14 weeks. Because not all newly hired GaVS teachers have experience teaching in an online environment, this course is designed to help them

become more familiar with this format. The content, discussions, and assessments are delivered online and the same late policies enforced on future students are modeled and expected by the new hires. During the last four weeks of this course the new hire is assigned to a mentoring teacher and acts as a student teacher in a live class. The next phase of the training, called "Just-In-Time training," allows the teacher to be in charge of up to five students while still working with a mentor. Even veteran faculty is offered mentoring opportunities by enrolling in a colleague's class as a "Visiting Educator." There are several other mentoring programs for current, full-time teachers that include support in attending conferences to Leadership Track opportunities for those interested. There are also mentoring options for those seeking an Online Teaching Endorsement or Graduate Certificate which require field experience (Cozart, 2012).

Another popular trend to receiving training in online teaching is by obtaining a graduate certificate in Online Teaching. Although many of these certificates are not specifically geared toward K-12 online learning, several of the programs do include options for focus in this area. For example, the state of Georgia allows current teachers to add an online teaching endorsement by completing the graduate certificate program at either Georgia State University (Georgia State University, 2013) or Valdosta State University (Valdosta State University, 2013). Both of these certificate programs focus specifically on teaching K-12 online. Arizona State University also offers a graduate certificate in online teaching for grades K-12. The 15 required credit hours of graduate coursework includes an online teaching practicum. This certificate program focuses on instructional strategies and best practices for teaching online, along with emerging technologies used in the field (Arizona State University, 2013). Other graduate

certificates, such as the one offered by the University of Wisconsin-Stout (University of Wisconsin-Stout, 2012), is designed to prepare teachers to teach online and even meets the prerequisite to teach online in that state. (Barbour, 2012b). Because some virtual schools, such as Virtual High School Global Consortium, already have partnerships with universities and offer courses to prepare teaching online, these courses can lead to graduate credit and even a graduate certificate in Online Teaching and Learning. Another important course that VHS offers is a field experience where the teacher is paired with a current online teacher (Barbour et al., 2012).

Another option for in-service teachers to become more knowledgeable in the online environment would be to obtain a Continuing Education Certificate in Online Teaching. There are two universities in California (California State University, East Bay and University of California – Irvine) that offer this type of certificate. However, these continuing education programs are not as long as typical university courses and do not necessarily lead to degrees, as it is with the graduate certificates (Barbour et al., 2012).

On top of the standard teaching certificate required by all states to teach, several states are taking the next step and requiring an additional online teaching endorsement in order to teach in these environments (Kennedy et al., 2013). The training for these endorsements usually covers primarily how to use online tools, online course design and delivery, and less on pedagogy, since the participants already have a teaching certificate. Georgia, the first state to offer an online teaching endorsement, has three participating universities offering endorsements that all require a field experience. An initiative for an online teaching endorsement was passed in Idaho in 2011 which also requires the teacher to hold a teaching certificate before beginning the program (Barbour et al., 2012).

Barbour et al. (2012) argue that the training offered in these online teaching endorsement programs would even benefit the teacher in the traditional classroom.

**A Disconnect Between Training and Teaching**

A careful review of the literature suggests a significant disconnect between (a) growing expectations for the expansion of online education at the K-12 levels and (b) the manner and extent to which teachers have been prepared to function in this new educational paradigm. Most current studies, dating back over five years, indicate that very few university-based education programs offer formal courses or clinical programs directed to the methods and best practices required for successfully conveying knowledge to online K-12 students (Compton, Davis, & Mackey, 2009). Training, if any, has mostly been through in-service mechanisms such as self-teaching, on-the-job training, and mentoring. The current literature also indicates a need for research into and the empirical validation of those teaching methods and practices that will produce optimal results for K-12 students (Charania, 2010; Searson et al., 2011; Barbour, 2012b).

**Purpose of Current Study**

There are great expectations that online programs will enhance the quality, efficiency, and effectiveness of K-12 education. Clearly, the number and coverage of K-12 online courses is rapidly expanding. However, the hope and excitement that surrounds these new programs may mask an underlying deficiency in how and the extent to which K-12 teachers are being educated in the myriad complexities of conveying knowledge over time and space, especially to young students who have yet to develop their own method and discipline for learning.

There is little research on the level of experience held by K-12 online teachers or how they were prepared to work in the online environment (Archambault, 2011). Much of the current research is focused on the online student or the quality of the online program itself (Rice, 2006), rather than on the teacher and the relevance of that teacher's education and training in the process of effectively teaching online courses to K-12 students.

With the growth of online education at the elementary and secondary levels, there will be only continued and expanding demand for educated and competent teachers in this area. Training for educators at the K-12 level has historically been provided through colleges of education housed within a university setting. If these programs do not begin to include content on online pedagogy, many newly certified teachers will be thrown into an environment where they simply are unprepared (Archambault, 2011).

The purpose of this study is to gather relevant information on current K-12 online teachers in the United States who are teaching at least one online class and to define the demographics of these teachers and the extent to which they were formally educated and/or trained to teach in this environment. The data collected will aid in answering the following research questions:

*Research Questions*

1. What are the current demographic characteristics of K-12 online teachers in the United States and how do they compare to six years ago?
2. How and to what extent have current K-12 online teachers prepared for this form of teaching?

# CHAPTER 2

# METHODOLOGY

## Overview

There is very little known about the backgrounds, qualifications and training of those who teach online to K-12 students (Archambault, 2009). Many authors have expressed the need for additional research into the characteristics of K-12 online teachers to provide a more consistent, effective and efficient model for training (Barbour, 2012b). With the rapid expansion of K-12 online education, it is critical to understand who is entering or already serving in this field, and how they are being prepared to teach in this challenging environment. Beyond the educational and training backgrounds of online teachers, it is also critical to understand whether there are differences in the characteristics and capabilities of those who teach online as compared to those who teach in a face-to-face classroom (Archambault & Crippen, 2009).

Although there has been a great deal of political interest in the quality of teachers in this country, very little attention has been given to the process and quality of teacher preparation (National Council on Teacher Quality, 2013). There is even less discussion, awareness, and examples that exist regarding the preparation of teachers who are or who plan to teach online. Accordingly, few educators, administrators, politicians, or parents are aware that most newly certified teachers are entering online classrooms with no knowledge of how to successfully teach in these settings (Kennedy, 2013; Kennedy & Archambault, 2012b). Since there is a limited number of teacher education programs that include courses and field placement on the processes and techniques involved in teaching

online, the vast majority of teachers who do teach online learn to do so through in-service professional development (Dawley, Rice & Hinks, 2010; Barbour, 2012b).

The purpose of this study was to survey and describe the demographics and preparation levels of current K-12 online teachers and compare these findings to a baseline survey that was performed six years ago by Dr. Archambault (2008). This study involved both quantitative and qualitative methods. A web-based survey, including both closed and open form questions, was used (Appendix A). A survey was an appropriate methodology for this study because a large data set and wide geographic reach was necessary to capture the relevant population of teachers (Blair & Czaja, 2013). Included in this chapter is a description of the underlying research questions, an overview of the survey participants, a discussion of the design and validation of the survey instrument, the data collection procedures, and the methods used for data analysis.

To examine the current demographics and training of K-12 online teachers across the United States and to compare current findings to those from six years ago, this study gathered data on the following domains as they relate to K-12 online teaching: a) personal demographics, b) educational background and experience, c) pre-service training, d) in-service training, and e) current online teaching assignments. These five areas were measured by a web-based survey to answer the following research questions:

1. What are the current demographic characteristics of K-12 online teachers in the United States and how do they compare to six years ago?
2. How and to what extent have current K-12 online teachers prepared for this form of teaching?

**Participants**

Participation in the web-based survey involved 325 K-12 teachers across the United States who were responsible for teaching one or more online courses offered through a state-sanctioned virtual school. The participants for this study were drawn mostly from the membership of the International Association for K-12 Online Learning (iNACOL). As noted in the iNACOL membership brochure (2012), its members make up "the largest, most inclusive non-profit association of online and blended learning practitioners, advocates and providers" (p.14). Program administrators and teachers represent the largest segments within the iNACOL membership. Of the 4,400 programs associated with iNACOL, there are 3,500 "Educator Members" that include teachers, staff members, and administrators who work at either public, private, charter, or independent online schools. Because the database of email addresses of all members is not available to the public, a link to the web-based survey was posted on the iNACOL General Forum. Since all iNACOL members automatically subscribe to this forum, the survey was available to 4,400 K-12 online programs. However, not all iNACOL members teach K-12 online. The invitation to participate requested that the survey be distributed specifically to those teaching at least one K-12 online class within the members' programs.

In addition to the online teacher participants gathered through the iNACOL Membership General Forum, the survey was sent directly to various virtual school contacts, not necessarily members of iNACOL. These contacts and referrals included schools in Arizona (Deer Valley eSchool, Arizona Virtual Academy, pvOnline, and Scottsdale Online Learning), Nebraska (University of Nebraska High School), Indiana

(Indiana Online Academy and Indiana University High School), South Carolina (South Carolina Whitmore School), Nevada (Virtual High School), Virginia (Virtual Virginia), Wisconsin (eAchieve Academy), Texas (Virtual Arts and Science Academy), California (Riverside Virtual School), Montana (Montana Digital Academy), Arkansas (Virtual Arkansas), Colorado (Colorado Online Learning), and Utah (Utah Online School K12). This expansion of recruitment was included to not only increase the number of participants, but also to achieve the most representative sample possible from across the country.

After reaching out to K-12 online teachers through iNACOL and following up on any referrals and contacts, further recruiting was necessary to increase the overall number of responses to reach the goal of 300 participants. Because Florida Virtual School (FLVS) is the largest state-sanctioned virtual school in the country, and the fact that this school has various partnerships with university teacher preparation programs, a research request proposal was submitted for access to survey the 951 online teachers currently working at this school. The FLVS Research Committee provisionally accepted the proposal, with one concern over the wording of Question 30: "What is the total number of students you teach online? Count each student only once." FLVS has a rolling enrollment, so the wording of Question 30 could be confusing for most of the teachers and responses might not reflect the intent of the question, which is the teacher's day-to-day student load. As suggested, the wording was changed to read, "On any given day, how many students are active in your course, on average?" Because of this change in question wording, a separate survey link was created for sole distribution to the FLVS teachers. With the changed wording for Question 30, the FLVS Research Committee sent

the Research Approval Letter (Appendix B), and agreed to distribute the survey to the online teachers at the school.

This study focused only on those teaching at publicly funded online schools. This limitation helped to assure comparability with face-to-face teachers subject to the same requirements, licensure, and standards. Although iNACOL membership surveyed does include teachers at privately funded virtual schools, this population of teachers was not encompassed by the present study. The publicly funded virtual schools included in the study are those that are sponsored by school districts, states, consortiums or post-secondary institutions. Like traditional schools, these publically supported virtual schools expect teachers to hold a teaching credential and meet other state requirements.

The No Child Left Behind (NCLB) standards require teachers to hold a bachelor's degree, full state certification, and proof of subject knowledge to be considered highly qualified. To demonstrate subject-matter competency, middle and high school teachers can major in the subject, complete equivalent credits in the subject, pass a state-developed test, complete an advanced certification, or earn a graduate degree. Current teachers can also demonstrate competency through teaching experience, professional development and knowledge gained on the job. These additional options used to show proof of subject-matter knowledge are called High, Objective, Uniform State Standard of Evaluation (HOUSSE). Meeting these conditions helps to create consistency between current and future teachers (U.S. Department of Education, 2004).

Because the salience of the survey content in regards to the participants can greatly influence the response rate (Borg & Gall, 1989), a non-random, purposeful sample was used. This type of sampling utilizes information-rich cases to help shed light

on the issues related to the current study (Patton, 2002; Gall, Gall & Borg, 2002). In order to collect data from the target population, the use of criterion sampling helped to narrow the participants to those who have taught or are currently teaching at least one K-12 online class at a publicly funded online school. The survey was sent to members of iNACOL, along with teachers from Florida Virtual School and other online schools that have the predetermined characteristics of teaching online to K-12 students in a single stage sampling procedure.

An invitation asking for teachers to participate in the study was posted on the iNACOL General Forum, which is subscribed to by all members. Because not all iNACOL members are K-12 online teachers, the posting requested members to distribute the survey information to those that teach online. Individual email invitations were sent internally to all Florida Virtual teachers, asking for participation in the study. Additional emails were sent directly to any other online teacher contacts/referrals.

There are no statistics on the number of teachers currently teaching K-12 students online in the United States. Accordingly, it is difficult to estimate the appropriate sample size (Borg & Gall, 1989). Sudman (1976) suggests a minimum of 100 participants for an adequate sample size when conducting survey research. In order to embody a better cross-section of K-12 online teachers, a goal was set to collect data from at least 300 participants.

**Design**

This study employed a descriptive research design in order to collect data on K-12 online teachers across the United States. An underlying survey methodology was used to collect information on the demographics of those currently teaching online to K-12

students along with information on how and to what extent these teachers were actually trained to teach in this environment.

After considering the factors of resource, questionnaire, and data-quality issues suggested by Blair & Czaja (2013), it was decided that a web-based survey would be the most convenient, effective, and efficient method for data collection. The concurrent mixed-methods design that was used captures both qualitative and quantitative data at the same time, with the qualitative thread of inquiry embedded within an otherwise quantitative survey (Creswell, 2013). This design yielded a clearer understanding of who is teaching online to K-12 students and exactly how they have been prepared for this very challenging job (Creswell, Plano Clark, Gutmann, & Hanson, 2003). Approval by the Arizona State University's Institutional Review Board to conduct this study was granted on September 16, 2013 (Appendix C).

Use of a web-based survey includes many significant benefits including: the low cost of distribution and retrieval, a short data collection period, and a very wide geographical reach (Blair & Czaja, 2013). The web-based survey software "Survey Monkey," was used in collecting data for this study. This well-recognized web-based platform makes it possible to utilize skip-logic within the text of the survey itself, allowing the participant to omit or "skip" those portions of the survey that are not relevant based on the participant's prior responses. It also allows the researcher to elicit further information based on affirmative responses. This form of electronic survey can be completed in significantly less time, since it automatically includes all secondary or tertiary questions that are logically determined to be relevant to each specific survey participant. It can also eliminate those deemed to be irrelevant. Before submitting the

survey, participants were allowed to review and verify their responses to the questions. After all survey participants had submitted their responses, the survey software collected and collated all of the results and then provided a variety of export options for use in subsequent documentation and data analysis.

**Limitations and advantages.** There are some limitations and validity issues when using this type of survey method to collect data. For example, the extent to which results can be generalized depends on the absolute and percentage response rate. Since the survey was directed only to iNACOL members, Florida Virtual School teachers and other contacts and referrals, the survey did not include the entire K-12 online teaching population. However, iNACOL members do represent a substantial majority of the target population and Florida Virtual School is the largest state virtual school in the country. Although the web-based survey format allowed participants to describe experiences without researcher interference or bias, this format can introduce self-report bias. An effort was made to eliminate bias and improve accuracy and validity by avoiding leading questions, including open questions and carefully reinforcing confidentiality, particularly within the text of the consent information. Upon accessing the survey link, a consent form (Appendix D) displayed first to provide confidentiality information, along with the nature, requirements, benefits and any risks of participation in the study. Participants were informed that by clicking "next" and completing the survey, they would be giving consent.

The questions in the underlying survey were adapted and expanded, with permission, from the web-based survey used in Dr. Archambault's study (Archambault, 2008) and the data collected were compared to her baseline results. To further enhance

the reliability of the survey, questions that were unclear or ambiguous were reformulated on the basis of feedback from expert reviewers and "Think Aloud" exchanges with teachers that have been actively involved in K-12 online education. (Dillman, Smyth, & Christian, 2009).

**Expert reviews.** The survey used in this study was reviewed by three educational technology experts with a view toward improving the content, clarity and validity of the survey. First to review was Dr. Leanna Archambault, Assistant Professor in the Mary Lou Fulton Teachers College at Arizona State University. Her feedback included recommended changes to eight of the survey questions.

To make certain responses more specific, the question on asking the participant's age was changed from soliciting a response within specified age ranges to a text box to collect the participant's exact age. Similarly, where participants were asked the year in which they obtained their teaching certificate, the use of a text box was replaced with a drop down list of specific years. In addition, rather than seeking each year in which a respondent obtained a teaching certificate, the corresponding question was altered to read "What year did you obtain your initial teaching certificate?"

The draft survey asked participants to identify all states that had granted the respondent a teaching certificate. This was changed to ask only which state granted the respondent's initial teaching certificate. A corresponding change in the data collection process involved switching from a text box to record the name of each state from which a certificate was received to a drop down menu of states from which to select where the recipient first obtained a teaching certificate. Similar changes were made in the case of

Question 10, asking for the state where the participant completed the teacher education program, and in Question 20, asking in which state the participant was currently teaching.

The modifier "online" was taken out of Question 14 to describe the specific type of field placement because this had already been defined in the previous question. As for the inquiry regarding the duration of formal training received on methods for teaching online in the course of employment as a K-12 teacher, the question and the answer options were both modified. Initially, responses were structured in terms of wide ranges of training hours (e.g., 0 to 10, 10 to 30, etc.). To solicit more focused responses, the question was reworded to read "Approximately how many hours of formal training on how to teach online did you receive in the course of your employment as a K-12 teacher?" A text box was added for the participant to answer.

Question 17 originally asked the participants to fill in what percentage of training involved orientation, workshops, or coursework and what percentage of training involved field experience in online teaching. This was clarified by adding a drop down menu next to each format with percentages ranging from 0% - 100% in 10% increments. When all of the forgoing changes were made to the survey, it was sent for review by the researcher's other co-chair, Dr. Wilhelmina Savenye, Professor in the Mary Lou Fulton Teachers College at Arizona State University. With additional minor corrections, Dr. Savenye approved the survey.

Finally, a third expert review was undertaken by Dr. Krista Glazewski, Associate Professor of Instructional Systems Technology at Indiana University, Bloomington. Dr. Glazewski questioned if the wording of the second survey item, asking about race/ethnicity, was accurate and suggested confirming with either the Department of

Labor or the Department of Civil Rights. Both the statistical standards of the National Center for Education Statistics (NCES) (2008) and the Office of Civil Rights in the U.S. Department of the Interior (2003) suggest using a two-question format to capture race and ethnicity. It is recommended to ask the participant's ethnicity first with two options of either Hispanic or Latino or Not Hispanic or Latino. The question of the participant's race follows by selecting one or more of the following choices: American Indian or Alaskan Native, Asian, Black or African American, Native Hawaiian or Other Pacific Islander and White. Totaling the ethnicity question, five race options and the option of selecting two or more races allows for seven reporting categories. Changes were made to the survey to reflect the most current and accurate method of collecting race and ethnicity data.

Dr. Glazewski asked whether Question 6 ("Do you hold a teaching certificate?") should also ask about alternative or emergency certification. Incorporating this detail was considered and discussed further during the third Think Aloud. Because most alternative certifications, such as the Teach America program, are tied with a university or institution that offers teacher training, it was decided to leave this question as it is written.

The phrase "online teaching" in Question 11, asking "Did your Teacher Education Program include any aspect of K-12 online teaching?" was assessed as unclear. It could be interpreted as asking if the participant had ever received content through online means, teaching a course online, or learning about teaching online. It was suggested to change the question wording to the following: "Did your Teacher Education Program include any preparation for design and delivery of online content with K-12 students?" This modification was made to the survey.

To further examine the nature of any training the participants received in their teacher preparation program, Question 12 provides the options of reading and writing assignments, course discussions, or other. Dr. Glazewski recommended adding "examples/demonstration" and "direct experience/modeling" as additional answer choices. This addition was also made to the survey.

In order to add more description to the types of training possibly received by participants from an employer, Dr. Glazewski proposed adding "development/project" to the first category "orientation, workshops, or coursework." This additional detail was added to Question 17 to read, "Orientation, workshops, development/project or coursework." Providing additional options for this type of training will allow the participants to consider every possible technique that was offered during employment as a K-12 teacher.

Another suggestion discussed with Dr. Glazewski was the possibility of creating a third "branch" under training. Besides the two existing areas of pre-service and in-service, a third area of self-taught could be added. After lengthy conversation on the matter, it was decided that this was a large enough area to warrant its own research in the future. This form of preparation is also included in the last open-ended question, "Describe how you were prepared or how you prepared yourself to teach online."

**Think Alouds.** Think Alouds were conducted with current K-12 online teachers to further test and improve the construct validity of the survey. This procedure helps to ensure that those taking the survey understand or interpret each question in the survey in the same way as was intended by the researcher, thereby minimizing error attributable to a lack of clarity in the questions.

The first Think Aloud was conducted on June 27, 2013, with Mr. Paul Fisko, Religious Studies Department Chair at Brophy College Preparatory. Although this study will not focus on private schools, feedback from this faculty member, who teaches high school courses online, was very helpful in clarifying several of the survey questions.

The researcher recorded the feedback provided as Mr. Fisko read through and verbalized his thoughts while answering each of the survey questions. His first comments involved a small typo and the rewording of a question to make it parallel. When asked, "Did your Teacher Education Program include any aspect of K-12 online teaching?" there was confusion as to whether the question was asking if he was being taught subjects online or if he was trained on how to be an online teacher teach. After a moment, he replied, "I guess my answer would be no either way." Because he obtained his teaching certificate in 1996, his teacher education program did not offer any classes online and certainly did not offer any training on how to teach online. In any case, this question was clarified to include specific examples (assignments, discussions, field experience, etc.) of how methods for teaching online might be included in pre-service training.

The next question that Mr. Fisko addressed was "How would you classify the school in which you currently teach online?" Although Brophy is considered a private school, Mr. Fisko hesitated to select that answer because reference to a "for profit virtual school" seems hyper-specific. In his situation, he has converted his face-to-face class to an online format but the school itself is not considered a virtual school. To remove this confusion, the "i.e." was changed to "e.g." in the question.

In the context of Question 24, "In the classes you currently teach approximately what amount of instruction takes place online?" Mr. Fisko replied, "I also teach 100%

face-to-face…seems the same as the previous question asking about the format of the classes I teach." In order to clarify the intent of this question, the word "online" was added to read, "In the classes you currently teach online…"

Mr. Fisko was also unsure how to answer the question on the format of his online teaching in regards to meeting with his students online. He stated that "my class starts in June and ends in August but they need to contact me by email to set up a time to take an oral exam via Skype…but no instruction, it is just an assessment…" To clear up this confusion, "or assessment" was added to the second answer choice. The question that asked about authorship of the content used for the class had "You" as the first answer choice. Mr. Fisko suggested I change that to read "Self" to be less awkward.

The final open-ended question asks the participant to "describe how you were prepared or prepared yourself to teach online. What training or preparation did you find to be the most helpful to teaching in this environment?" Mr. Fisko's first reaction was to answer, "I wasn't prepared…N/A" because he received no training from his pre-service teacher preparation program and no training from his current or past employers on how to teach online. Any preparation to teach his classes online was self-taught. To assure that participants having similar backgrounds were encompassed by the question, it was changed to read, "Describe how you were prepared or how you prepared yourself to teach online." All feedback and suggestions from this initial Think Aloud were incorporated in one form or another into the survey.

A second teacher volunteered on August 2, 2013 for a Think Aloud to improve the validity of the survey. Onowa Bjella, a Title 1 middle school reading teacher from Arizona Virtual Academy, provided valuable feedback and offered several suggestions

for clarification of the survey. Although Mrs. Bjella answered "no" to Question 11, asking if her teacher education program included any aspect of K-12 online teaching, she confirmed that the changes made to the question from the first Think Aloud feedback helped to interpret the meaning correctly. She said, "This question is asking if my teacher education program addressed anything about virtual schools or offered a practicum in a virtual classroom. I'd answer 'no' since the internet wasn't even invented!"

Based on feedback, a change was made to the wording of the answer for Question 17. The question asks participants to give an approximate percentage of total in-service training for "orientation, workshops or coursework" and "field experience in online teaching." Mrs. Bjella stated, "When I read 'field experience' I think of student teaching or a preliminary experience, such as viewing a class." Because many virtual schools offer mentoring to newer online teachers and to make the question clearer, the second type of training was changed to "field experience/mentoring in online teaching."

Mrs. Bjella shared her confusion on how to answer the question: "How would you classify the school in which you currently teach online?" Although Arizona Virtual Academy (AZVA) is a virtual charter school, they partner with the Portable Practical Education Preparation, Inc. (PPEP, Inc.), AZVA's charter holder. The answer choice "District" gave only the example of a public school district, which did not seem to fit in this case. To clarify, "virtual school operated in conjunction with a local education agency, etc." was added as another example for the District classification.

Although all of the classes taught by Mrs. Bjella were in online format, she questioned why there was an answer choice of "none of my classes are taught online." Generally, those that are not currently teaching online but have done so in the past would

select this answer. It was decided to eliminate this option because earlier questions in the survey define if the participant is currently teaching at least one online class and/or if they have taught one in the past.

Question 28 asks "Considering the content of your class(es), who is the primary author?" The AZVA uses the K12 Curriculum but the teachers are currently creating new curriculum to align with the Common Core curriculum. Mrs. Bjella also explained how teachers work with each other to create and share content, as well as utilizing web resources and standard textbooks. Since most teachers (both online and face-to-face) draw from various sources in addition to any curriculum provided, this question was changed to allow for multiple answers. One answer choice read "outside online content provider (e.g., Apex Learning, Virtual High School, etc.)" which added confusion because K12 Curriculum was not an "outside" online content provider, they are the parent company of AZVA. The word "outside" was deleted from the answer choice and "K12 Curriculum" was added as an example of an online content provider. The choices "Web resources" and "Textbook publishers" were also added to capture a more descriptive picture of authorship.

The third Think Aloud was conducted on August 5, 2013 with Kayrene Willis, a high school math teacher at Scottsdale Online Learning. The first comment was about the ethnicity question, which was reworded based on Dr. Glazewski's expert review. Although Ms. Willis did not suggest any change, she stated "I've never seen that before, where they ask Hispanic or Latino." This question might not be familiar to some of the survey participants; however, it is the current recommended format for collecting ethnic data by both NCES (2008) and the Office of Civil Rights (2003).

It did not take long for Ms. Willis to provide the approximate hours of formal training she received in the course of her employment as a K-12 teacher (Question 16), but she suggested changing the following question regarding time spent on each type of training. Changing the format of the question from asking the approximate percentage of each type of training to approximate hours of each type of training would be easier for those taking the survey because they would not have to calculate the answer. Changes were made to reflect this on Question 17.

**Summary of research questions, domains, and survey items.** This study was designed to address two related research questions, which are stated as follows:

*Research question 1*. What are the current demographic characteristics of K-12 online teachers in the United States and how do they compare to six years ago?

*Research question 2***.** How and to what extent have current K-12 online teachers prepared for this form of teaching?

The underlying survey included 37 total questions directed toward the collection of data in response to these research questions. Depending on how an individual survey participant responded to a particular question, the participant might be automatically presented with related sub-questions or automatically presented with the next basic question in the survey. There were four questions within the survey which contained skip logic and directed the participant to the next appropriate question, based on their answer. The basic questions and the response-dependent sub-questions can be clustered into domains or categories of topically related inquiry. The two tables that follow incorporate all of the questions included in the survey and separately collect these questions within domains of inquiry that relate to the two basic research questions.

Table 2

*Domains of Inquiry Relating to Research Question 1*

| Research Question 1:<br>What are the current demographic characteristics of K-12 online teachers in the United States and how do they compare to six years ago? | |
|---|---|
| **Domains of Inquiry** | **Corresponding Survey Questions [Number]** |
| Personal Demographics | What is your gender? [1]<br>Which is your ethnicity? [2]<br>What is your race? [3]<br>How old are you? [4] |
| Educational Background | Do you hold the following degrees or certificates? For each degree or certificate held, please list your major and minor fields of study. [5]<br>Do you hold a teaching certificate? [6]<br>What year did you obtain your initial teaching certificate? [7]<br>What state granted your initial teaching certificate? [8] |
| Experience | Have you in the past taught at least one K-12 class online? [18]<br>Are you currently teaching at least one K-12 class online? [19]<br>In which state do you currently teach? [20]<br>How would you classify the school in which you currently teach online? [21]<br>How do you classify your main assignment at the school where you currently teach online? [22]<br>Which of the following best describes the format of the classes you teach at your present school? [23]<br>In the classes you currently teach online, approximately what amount of instruction takes place online? [24]<br>Which of the following describes the format of your online teaching? [25]<br>What is your main teaching field at the school where you currently teach online? [26]<br>List the specific courses you teach online: [27]<br>Considering the content of your class(es), who is the primary author? [28]<br>How many total classes do you teach online? [29]<br>What is the number of students you teach online? [30]<br>How many years have you been employed as a teacher? [31]<br>How many years have you been employed as an online teacher? [32]<br>Which grade(s) do you currently teach at this school? [33] |
| Open-Ended Questions | Describe the career path that led you to teaching online. What were the dominant factors that influenced your decision to teach online? [34]<br>What do you think are the most important attributes a K-12 online teacher must have to be highly effective? [35] |

Table 3

*Domains of Inquiry Relating to Research Question 2*

| Research Question 2: How and to what extent have current K-12 online teachers prepared for this form of teaching? | |
|---|---|
| **Domains of Inquiry** | **Corresponding Survey Questions [Number]** |
| Pre-Service Training | What school or institution did you attend for your Teacher Education Program? [9]<br>In what state is this school or institution located? [10]<br>Did your Teacher Education Program include any preparation for design and delivery of online content with K-12 students? [11]<br>How was the content regarding K-12 online teaching included as a part of your pre-service coursework? [12]<br>Did you participate in a K-12 online field placement as part of your pre-service program? [13]<br>Please describe the nature and extent of your participation in the field placement. [14] |
| In-Service Training | In the course of your employment as a K-12 teacher, have you been provided with any form of formal training on how to teach online? [15]<br>Approximately how many hours of formal training on how to teach online did you receive in the course of your employment as a K-12 teacher? [16]<br>Approximately how many hours of your training involved: Orientation, workshops, development/project or coursework? Field experience/mentoring in online teaching? [17] |
| Open-Ended Questions | Describe how you were prepared or how you prepared yourself to teach online. What training or preparation did you find to be the most helpful to teaching in this environment? [36]<br>Based on your experience teaching online, what elements of training would be the most valuable in preparing new online teachers? [37] |

## Procedures

The K-12 online teachers that are members of iNACOL were contacted through a pre-notification posting on iNACOL's General Forum, which described the upcoming survey (Appendix E). As stated by Blair and Czaja (2013), "The purpose of the initial contact is to explain the purpose and importance of the survey, identify the sponsor, provide an assurance of confidentiality, and provide instructions for accessing the survey Web site" (p. 40). Because these educators are all members of iNACOL, they had direct access to this forum. Further, because they are actually teaching online, they were

comfortable using the Internet and responding to questions in a digital format. A second posting to the General Forum included instructions and a link to the self-administered, web-based survey (Appendix F). A follow-up posting to the General Forum reminded those who had not yet responded to the survey, while thanking those that had responded (Appendix G), and a final posting allowed the teachers one last chance to participate in the study (Appendix H). In addition to these postings on iNACOL's General Forum, the requests for participation were simultaneously posted by the Director of Research for iNACOL, Dr. Kennedy, on iNACOL's *Research in Review* blog, Dr. Barbour's *Virtual School Meanderings* blog, iNACOL's Facebook page and Twitter, and to around 2400 members in the iNACOL LinkedIn Community.

Because the Florida Virtual School online teachers are restricted from participating in any non-approved surveys, they were contacted via emails that were sent internally from Teresa King, Instructional Programs Manager for Florida Virtual School. Because these teachers were contacted directly, only two emails were sent: the FLVS Survey Invitation with Link Email (Appendix I), and the FLVS Survey Follow-Up Email (Appendix J). The survey link included in both of these emails was specific to those teaching at Florida Virtual School.

A more generic recruitment email was sent to the remaining teacher contacts (Appendix K). This email contained the original survey link that was distributed to all of the iNACOL members. Survey data entered by all of the participants was automatically collected and compiled through the Survey Monkey software before undertaking the process of data analysis.

## Plan for Data Analysis

**Quantitative.** Descriptive statistics was used for the items in the survey that are structured as closed-ended questions. The results are summarized in the text and reported in graphic and tabular form, as appropriate. The current version (22.0) of a widely used program for executing statistical analysis of this type (Statistical Package for Social Sciences or "SPSS"), was used in performing the basic quantitative analysis and tabulating the resulting values. These results are presented and evaluated in the following chapter.

**Qualitative.** The data collected from the open-ended questions in the survey were coded and analyzed for themes. As noted by Blair and Czaja (2013), "Coding respondents' answers to each question allows us to estimate characteristics or to look for patterns among variables" (p. 37). In the present survey, the first open-ended question asked the participant to: "Describe the career path that led you to teaching online. What were the dominant factors that influenced your decision to teach online?" This set of inquiries includes codes corresponding to responses such as: the ability to work from home, the result of being recruited, interest in a new teaching format, the ability to teach part-time, and prior online experience in teaching or a related field.

Next, the survey participants were asked the open-ended question, "What do you think are the most important attributes a K-12 online teacher must have to be highly effective?" Responses were categorized into themes such as strong communication skills, being organized and prepared, and the ability to connect with students.

The third open-ended question in the survey asked the participant to: "Describe how you were prepared or how you prepared yourself to teach online. What training or

preparation did you find to be the most helpful to teaching in this environment?" Once the data had been examined, results fell into categories such as: pre-service coursework, pre-service field experience, in-service training, in-service mentoring, and self instruction.

The fourth open-ended question asked "Based on your experience teaching online, what elements of training would be the most valuable in preparing new online teachers?" Identified themes were coded and characteristics included training in technology, communicating at a distance, and mentoring programs. The results of the qualitative content analysis are presented in the following chapter.

**Conclusion**

This study employed a mixed-methods approach, utilizing both quantitative and qualitative data to gather information for the purpose of providing a representative snapshot of who is currently teaching online to K-12 students across the United States and how they were educated, trained, or otherwise learned how to teach in this new and challenging environment. Because there is very little research or data available in this area, this study helped to provide a meaningful insight into the characteristics of this subset of K-12 teachers, how they learned to teach online and how the relevant data compares to the work reported by Dr. Archambault some six years ago. With the increase of K-12 online class offerings, the call by states for students to complete one or more online class to graduate high school (Kennedy & Archambault, 2012b), and with increasing numbers of K-12 students enrolling online, teacher preparation programs will need to examine how they are preparing teachers for this environment.

# CHAPTER 3

# RESULTS

## Overview of Statistical Procedures

The objective of this study was to describe the current demographics and preparation levels of K-12 online teachers and compare the results from six years ago (Archambault, 2008).

The data for this study was gathered from a nationwide survey and fell into six domains: a) personal demographics, b) educational background and experience, c) pre-service training, d) in-service training, and e) current online teaching assignments. The survey that was used was adapted, with permission, from Archambault's earlier work and targeted relevant information needed to discover who is currently teaching online to K-12 students, and how these teachers were prepared and trained to teach in the online environment. This chapter reports the findings gathered from K-12 online teachers from across the United States.

The survey for the current study included both quantitative and qualitative questions. Results from the quantitative questions were analyzed using descriptive statistics; the results from the qualitative questions were coded and analyzed for common themes. The findings from this mixed-methods approach were used to answer the following research questions:

*Research Question 1***.** What are the current demographic characteristics of K-12 online teachers in the United States and how do they compare to six years ago?

*Research Question 2.* How and to what extent have current K-12 online teachers prepared for this form of teaching?

## Response Rate

Because there is currently no reliable data on how many persons are currently teaching K-12 students online in the United States, the appropriate sample size for this study is difficult to estimate (Borg & Gall, 1989). Based on suggested survey research sample sizes (Sudman, 1976) and feedback from the dissertation committee, a goal of 300 participants was agreed upon. Invitations to participate in this study were sent to various contacts at K-12 online schools, including, for example, teachers at the Florida Virtual School. In addition, the survey was made available to all members of iNACOL. A total of 325 teachers responded to the web-based survey. This total was made up of 107 Florida Virtual School teachers, and 218 iNACOL members and teachers reached through various contacts.

## Research Question 1: Quantitative Results

**Overview.** Data pertaining to personal demographics, educational background and teaching experience were gathered to form an overall picture of those teaching online to K-12 students in response to the first research question:

*What are the current demographic characteristics of K-12 online teachers in the United States and how do they compare to six years ago?*

**Personal demographics.** This section of the web-based survey examined the personal demographics of the teachers, including gender, ethnicity, race and age.

***Gender.*** The results of the survey show that out of 325 current K-12 online teachers in the United States, 243 (74.8%) were female and 81 (24.9%) were male.

***Ethnicity and race.*** In terms of ethnicity, 306 (94.2%) categorized themselves as "Not Hispanic or Latino," while 15 (4.6%) self reported as being "Hispanic or Latino."

Most of the respondents were identified as being White, with 303 responses (93.2%), while the remaining participants were distributed as follows: 9 (2.8%) Asian; 8 (2.5%) Black or African American; 6 (1.8%), American Indian or Alaskan Native; and 2 (0.6%) Native Hawaiian or Other Pacific Islander. Out of those teachers that responded to this question, 6 (1.8%) reported being of mixed race.

***Age.*** The 325 responding teachers ranged in age from 22 to 77 with a mean age of 42.75 and a median age of 46 (3.1%) The largest single age group consisted of 18 teachers (5.6%) who were 33 years of age (Figure 3).

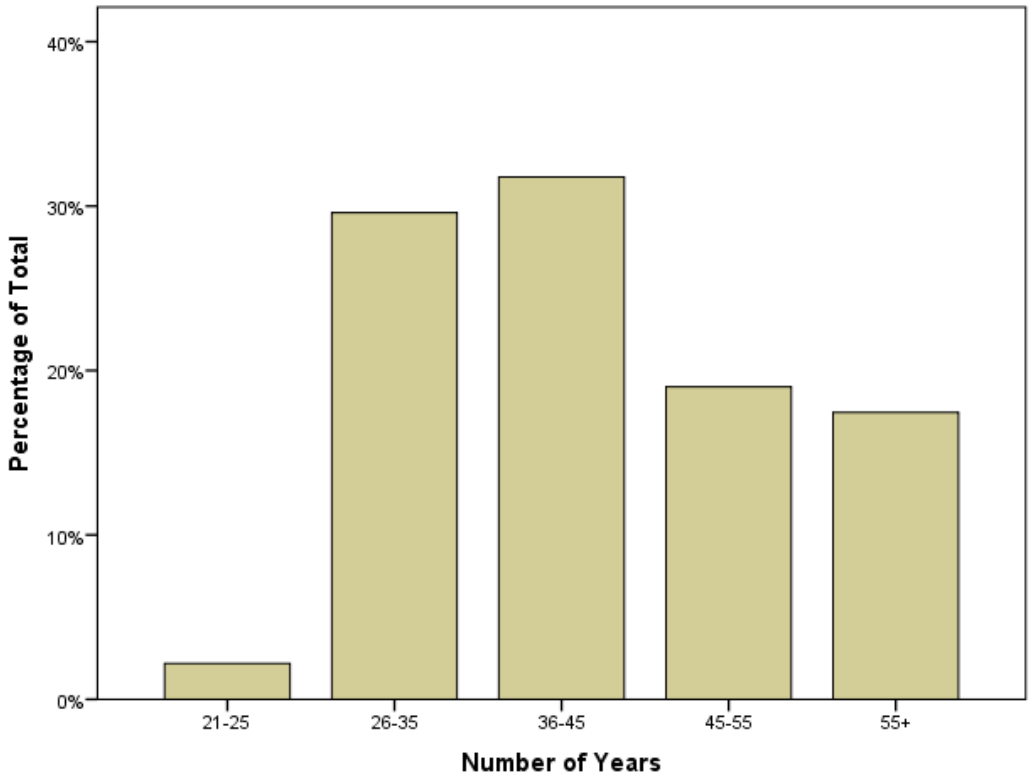


*Figure 3.* Age distribution.

**Educational background.** This section of the survey focused on the degrees or certifications held by the responding teachers.

***Bachelor's degrees.*** From the total of 325 survey participants, 314 (96.6%) of the teachers hold at least a Bachelor's degree. It is noted that 11 (3.4%) of the respondents did not answer the question regarding Bachelor's degrees. Over half of the teachers with Bachelor's degrees (59.4%) majored in a specific content area; 65 (20%) majored in secondary education; 32 (9.8%) majored in K-12 education; and, 24 (7.4%) majored in elementary education. Four of the elementary education majors also majored in special education.

A closer examination of the bachelor degrees and the associated content areas revealed that the main content areas included social sciences (psychology, sociology, history, political science, and counseling), science (biology, chemistry, zoology, geology, and physics), mathematics, and English (Figure 4).

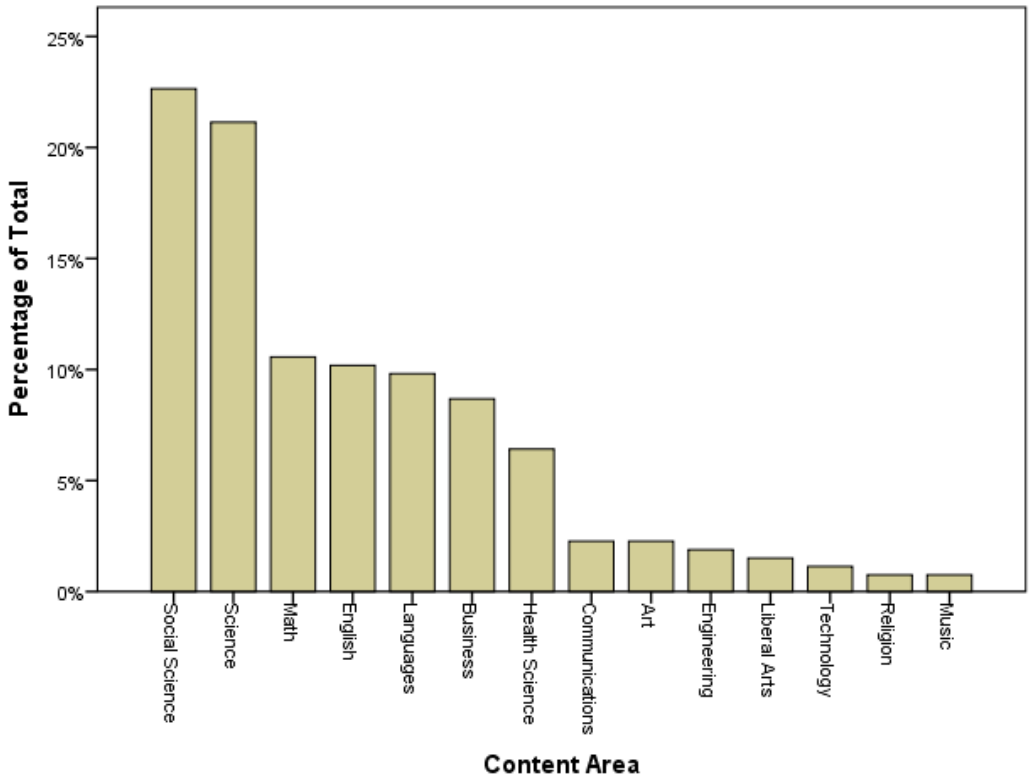


*Figure 4.* Bachelor degrees by content area.

***Master's degrees.*** The survey showed that 234 (72%) of the K-12 online teachers hold a Master's degree and that an additional 9 respondents (2.8%) were in the process of completing a Master's degree. Of the teachers holding a Master's degree, 87 (35.8%) were in education, (M.Ed., MAT, Curriculum and Instruction, Teaching and Learning); 60 of the Masters degrees (24.7%) were in a specific content area (biology, mathematics, business, history); 36 of the Masters degrees (14.8%) were in administration/educational leadership; and, 15 of the Masters degrees (6.2%) were in educational technology (Figure 5). Two of the education Master degrees included an emphasis in technology.

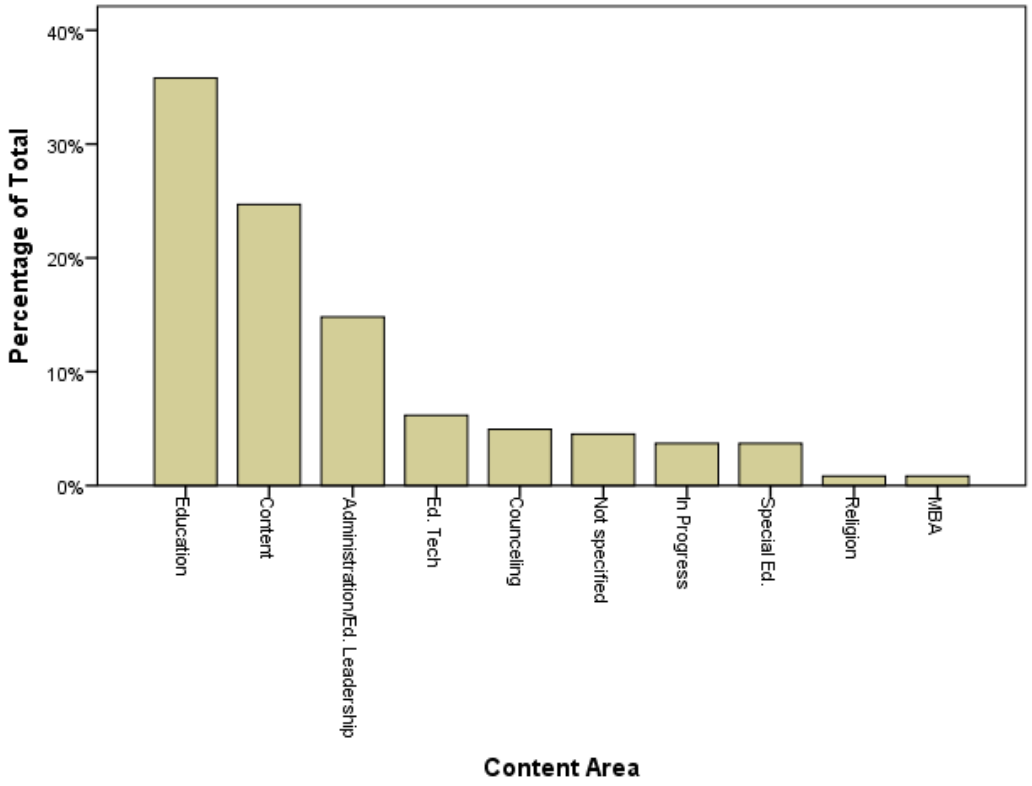


*Figure 5.* Master's degrees by content area.

***Doctorate degrees.*** Twelve (3.7%) of the K-12 online teachers participating in the survey hold a Doctoral degree, while an additional 9 (2.8%) are in the process of completing a doctorate. Although half of these respondents did not specify the particular area of the degree, 5 were in Educational Leadership, 4 were in Educational Technology, and 2 in both Chemistry and Curriculum and Instruction. One of the Educational Leadership Doctoral degrees additionally included a focus in Online Teaching.

***Other certificates or endorsements.*** Approximately one-third of the survey participants, 104 (32%), hold additional certificates and endorsements relating to education. These certifications fell into the areas of Ed.S, administration, ESOL/SEI and various content areas, including math, social sciences and reading. Of particular interest to the present study was the fact that 7 (2.2%) of the responding K-12 online teachers

hold separate certificates in online teaching. Individual teachers (<1%) reported that they held certificates in Distance Education or eLearning. One teacher holds an Instructional Technology Specialist endorsement and another holds a Graduate Certificate in Educational Technology.

***Teaching certificates.*** In addition to the various degrees and certificates mentioned above, 315 (96.9%) of the teachers surveyed hold a teaching certificate. The earliest year for obtaining an initial teaching certificate was 1962 and the most recent teaching certificate was obtained in 2013. The greatest numbers of teaching certificates were issued to responding teachers from the following states: Arizona (17), Florida (79), Indiana (26), Michigan (77), New Hampshire (11) and Pennsylvania (23).

**Past and current online teaching assignments.** This section of the survey gathered information on past and current online teaching assignments, including the type and location of the school where the instruction occurred, the format and content of courses taught, the number of courses and students taught by each instructor, the grade levels taught, and the number of years the respondent had been engaged in teaching (both online and total).

***Teaching experience.*** Participants provided data on their most recent involvement in teaching. Of this group 241 (74.2%) reported that they had taught at least one K-12 online class *in the past* and 47 (14.5%) reported that they had not. When asked if they were currently teaching at least one online K-12 class, 259 (79.7%) responded that they were and 26% (8%) indicated that they were not. However, those that are not currently teaching at least one online class have done so in the past. The remaining participants did not answer this particular question.

***Geographical distribution of online schools.*** Survey participants reported that they were teaching in a total of 23 different states, with over half of the respondents currently teaching in either Florida (31.1%) or in Michigan (25.5%). There were also notable numbers of online K-12 teachers working in Indiana (9.1%), New Hampshire (7%), Pennsylvania (7%), and Arizona (5.9%). Other states identified by the teachers surveyed included Alaska, Arkansas, California, Colorado, Connecticut, Maryland, Minnesota, Nevada, New Mexico, Ohio, Oregon, Pennsylvania, South Carolina, Texas, Utah, Virginia and Washington (Figure 6).

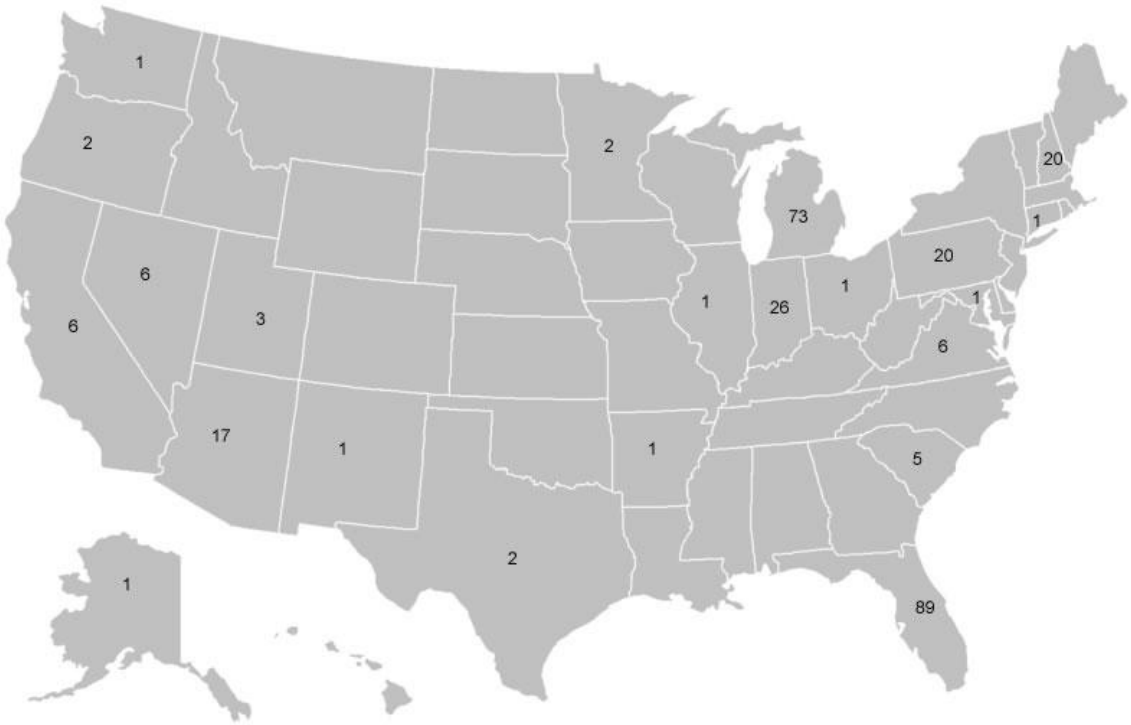


*Figure 6.* Number of responses per state.

***Type of online school.*** Survey participants were asked to classify the type of online school where they were currently teaching. The majority of the teachers (141, 43.4%) reported working at a state-sanctioned, state-funded virtual school. Ninety-five

(29.2%) of the respondents classified their school as a district-level virtual school. The remaining responses characterized the school as operated by a consortium (40, 12.3%), privately operated (10, 3.1%) or as a post-secondary school (2, <1%) (Figure 7).

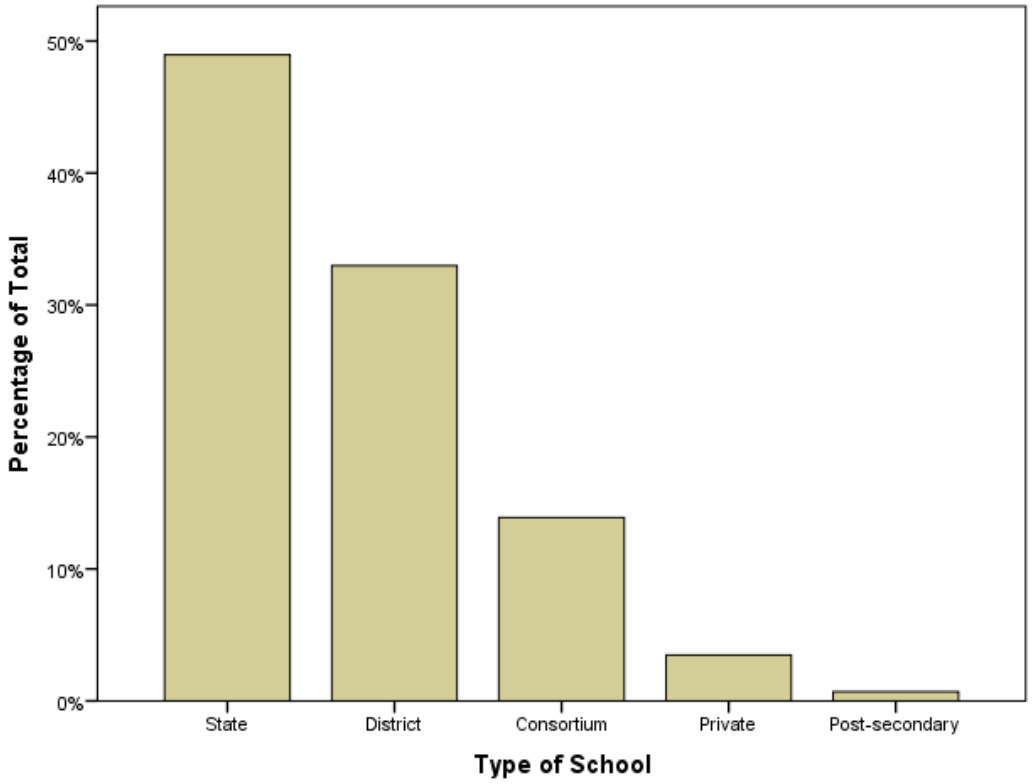


*Figure 7.* Classification of K-12 online schools.

***Allocation of teaching time.*** Half of the respondents were full-time teachers (143, 49.5%) while 130 (45%) were teaching part-time. Fourteen of the participants (4.8%) work in an additional role, such as a school administrator, curriculum specialist, library media specialist, instructional designer, or support staff member. Only two (<1%) teachers work as a combined teacher where they may teach at more than one school (Figure 8).

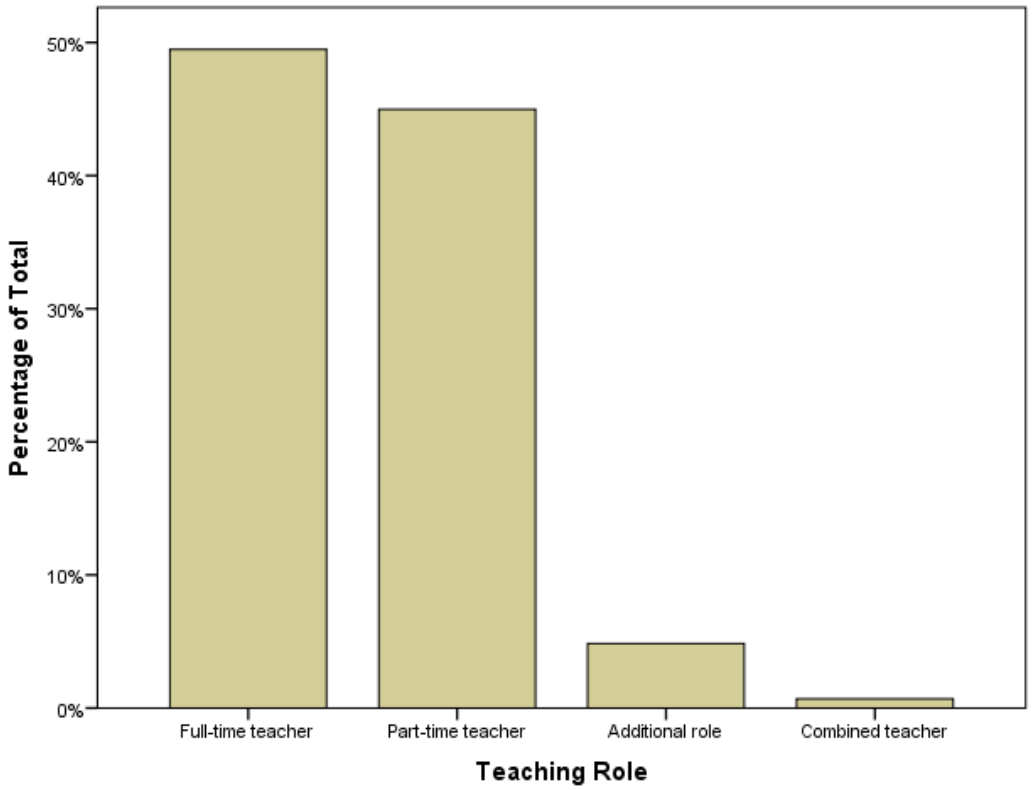


*Figure 8.* Allocation of teaching time.

***Online class structure.*** Various characteristics of the online classes taught by survey participants were captured by some of the survey questions, including, for example, the format of the class, the amount of time spent online, and the actual teaching format. The majority of respondents (249, 86.5%) stated that all of their classes are taught online. Ten participants (3.5%) reported about half of their classes were taught online while 29 (10.1%) teach less than half of their classes online.

When comparing the amount of instruction that occurs online, 254 (78.2%) of the respondents indicated that they provided instruction online between 80 and 100% of the time. Only 19 teachers reported teaching in a more hybrid manner with between 30 and

79% of the instruction occurring online. The balance of the respondents, 15 (4.6%), indicated that less than 30% of their teaching time involved online instruction.

The format of online teaching was mostly asynchronous (249, 76.6%) with no specific times required for the students to "attend" the online instruction. Thirty-two (9.8%) of the surveyed teachers require students to be online at certain specific times, but only for the purpose of receiving brief instruction or for assessments. Only 6 (1.8%) of the teachers teach in a synchronous manner, with all enrolled students logging in for instruction at predetermined times.

***Online course content.*** As to the fields of instruction most commonly found in K-12 online education, the most common (60%) were in the three fields of mathematics (57, 19.7%), social studies (56, 19.4%), and science (55, 19%). Humanities, including art, music and foreign languages, are also a frequent topic for online teaching, with 44 (15.2%) respondents teaching classes in this area. In addition, 34 (11.8%) taught language arts/reading, 18 (6.2%) taught topics relating to physical education/health, 10 (3.5%) taught technology/computers, and 3 (1%) taught elementary classes, including all of the core subjects. Twelve respondents indicated that they were teaching in "other" fields, which included special education, online education, multiple subjects (math, science and history), study skills, personal finance, leadership, career education, and business (Figure 9).

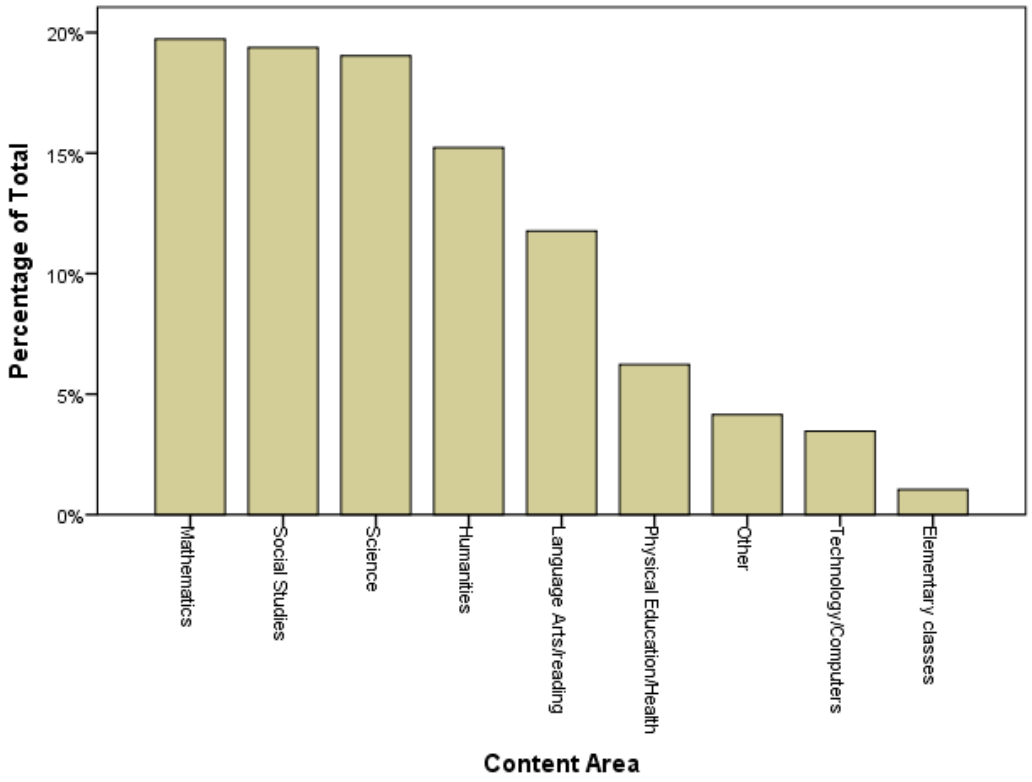


*Figure 9.* Primary teaching content area.

Those teaching elementary classes online typically teach all of the core subjects. Some teachers were also responsible for art and physical education at the elementary level. The humanities courses generally incorporated elements on music, art, photography and languages (Spanish, Latin, French, Chinese, German, Japanese and American Sign Language). Specific courses taught by survey participants in the language arts/reading category were English, social media, literature and composition, creative writing, American literature, and British literature. The field of mathematics included courses on algebra, geometry, calculus, statistics, trigonometry and even one called "The Mathematics of Baseball." Life management skills and personal fitness are examples of courses taught in the physical education/health field. Online science courses covered a

wide range, including biology, chemistry, physics, anatomy, microbiology, astronomy, oceanography, bioethics, environmental studies, marine biology, earth space, and forensic sciences. The online social studies courses encompassed topics such as psychology, history, government, economics, sociology, world history, legal studies, geography, global studies, civics, and Native American history. The technology courses covered topics such as computers, game design, digital imaging, HTML programming, web design, and Java programming.

***Authorship of online content.*** The K-12 online teachers who participated in the survey were asked to characterize the primary author of the course content presented to their students by selecting from a list of alternatives with the instruction that they should select all of the options that applied. Online content providers, such as Apex Learning, K12 Curriculum, or Virtual High School were cited as the author by about one-third of all respondents (116, 35.7%). Curriculum specialists were identified as the content source by 98 respondents (30.2%). Sixty-nine (21.2%) of the teachers reported creating the course content themselves, while 55 (16.9%) used content created by a colleague. Content created by software companies were used by 20 teachers (6.2%), 13 teachers (4%) used content authored by textbook publishers, and 12 teachers (3.7%) based their courses on resources available on the Internet. Three teachers (<1%) selected "other" and indicated they used an undefined combination of the sources listed in the survey question.

Very broadly, the online teachers surveyed can be clustered into three overlapping categories that characterize their participation in the creation of the course materials they use in their online classes. About one-fourth used materials that they had prepared

themselves or they had prepared in cooperation with another person or firm and about three-fourths used materials that were prepared entirely by someone else (Figure 10).

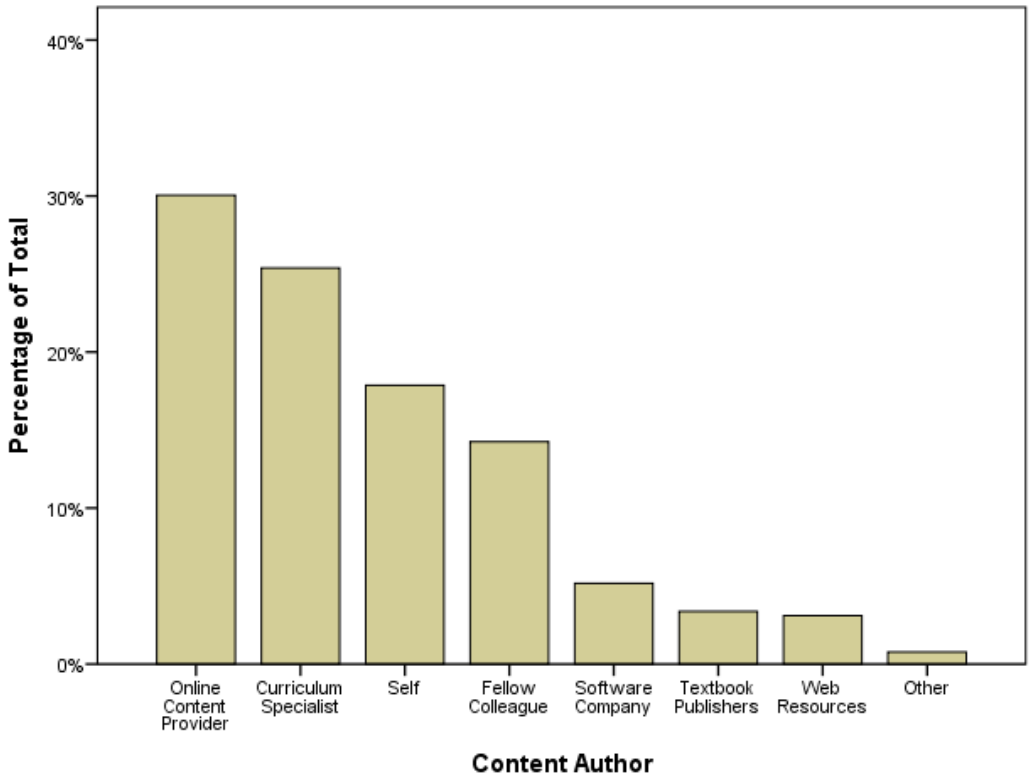


*Figure 10.* Authorship of online content.

***Online teaching load.*** The surveyed teachers were asked to state the total number of classes they currently taught online. It was explained that the teaching of two or more classes having the same subject matter were taught to different groups of students, these would be counted as separate classes. The largest group of respondents (87, 30%) reported teaching just one class online while 67 respondents (23%) reported teaching two classes. Forty of the teachers (14%) stated they taught seven or more different classes online. The remaining teachers reported teaching three (38, 13%), four (23, 8%), five (17, 6%), or six (15, 5%) classes online (Figure 11).

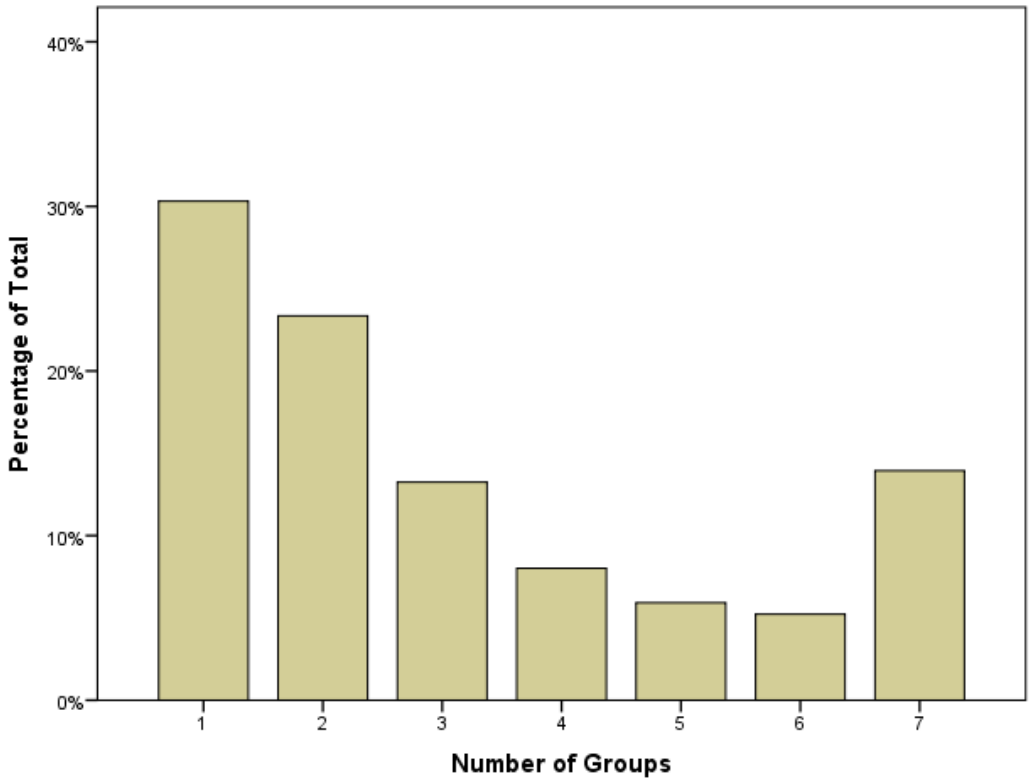


*Figure 11.* Online teaching load.

***Online student teacher ratio.*** In relation to their online courses, the K-12 teachers reported that they were responsible for an average of 100.5 students. The current number of online students per teacher varied dramatically from none to 1175. Two teachers stated that they were "not sure" of the number of students they had and others mentioned the difficulty in determining the number of students or that the number varied with time.

***Years of teaching experience.*** Participants were asked to indicate how many years they have been employed as a teacher, part-time or full-time, in public schools or private schools. The average number of total years teaching was 15, with a minimum of one and a maximum of 47. Five teachers (1.8%) indicated that this was their first year teaching in any environment. The average number of years the respondents had been

employed to teach online was 4.44 years. The current year was the first year teaching online for 41 (14.3%) of the teachers, while two of the teachers have taught online for 15 years.

***Grade levels for online courses.*** The survey sought to ascertain the extent to which content was taught online at the different grade levels. The high school levels (9th through 12th) had the greatest concentration of online courses. Middle school grades (6th through 8th) were next, and the elementary grades (Pre-Kindergarten to 5th grade) had the fewest online courses. As shown in Table 4 below, the concentration of online courses increases in a linear fashion with increasing grade level.

Table 4

*Percentage of Teachers by Grade Level Taught*

| Grade Level Taught | Number of Respondents | Percentage |
|---|---|---|
| Pre-Kindergarten | 0 | 0% |
| Kindergarten | 6 | 1.8% |
| 1st | 6 | 1.8% |
| 2nd | 6 | 1.8% |
| 3rd | 7 | 2.2% |
| 4th | 7 | 2.2% |
| 5th | 9 | 2.8% |
| 6th | 37 | 11.4% |
| 7th | 57 | 17.5% |
| 8th | 92 | 28.3% |
| 9th | 207 | 63.7% |
| 10th | 226 | 69.5% |
| 11th | 231 | 71.1% |
| 12th | 232 | 71.4% |

While the majority of online teachers reported that they only taught at the high school level (183, 56.3%), many of the respondents taught more than one grade and at more than one level. The range of teaching assignments is suggested by the following data: 67 respondents (20.6%) taught both middle school and high school; 5 teachers (1.5%) taught elementary, middle and high school; 3 teachers (0.9%) taught at both the elementary and middle school levels; and, 1 teacher taught elementary and high school, but not middle school.

**Research Question 1: Qualitative Results**

**Overview.** The previous sections dealt with the quantitative responses to those survey questions relating to the first basic research question. The following sections deal with the qualitative survey responses that relate to the first research question. These qualitative responses were given in response to two open-ended questions, including survey Question 34: "Describe the career path that led you to teaching online. What were the dominant factors that influenced your decision to teach online?" and Question 35: "What do you think are the most important attributes a K-12 online teacher must have to be highly effective?"

A content analysis approach was used to discover patterns and characteristics in the responses to these open-ended questions. The questions were coded, in accordance with grounded theory methods (Strauss & Corbin, 1998), based on common themes found in the varied responses. The corresponding codes grew in number as the numbers of distinct themes were revealed by a progressively deeper analysis of the data. Discussed in the following sections are the results and analysis derived from the responses to each of the two open-ended questions.

**Analysis of Question 34.** The first open-ended question asked the teachers surveyed: "Describe the career path that led you to teaching online. What were the dominant factors that influenced your decision to teach online?" This question sought information on the influences and primary reasons for the respondents' decision to teach K-12 students online. There were 258 responses to Question 34 and these responses were classified into 15 different codes.

Table 5 below includes a short title and brief description of each coded set of responses to Question 34, along with the number and percent of respondents indicating each factor influencing their decision to pursue online teaching. Following Table 5, Figure 12 arrays the 15 coded responses to Question 34 according to the percentage of teachers indicating that they were influenced by each of the corresponding factors.

Table 5

*Factors Influencing Decision to Teach Online*

| Coded Characteristic | Representative Elements of Coded Characteristic | Number of Responses | Percentage |
|---|---|---|---|
| Employment Opportunity | Chance to teach online presented itself, scarce classroom teaching jobs, school converted to online, needed job, recruited by others, friend taught online | 53 | 20.5% |
| New Teaching Model | Different way of teaching, new and interesting, wanted a change of pace, curiosity | 50 | 19.4% |
| Supplement Income | Summer job, supplement income, part-time work | 23 | 8.9% |
| Ability to Work from Home | Stay with kids, no travel time | 22 | 8.5% |
| Flexibility | Available for family, child w/special needs, flexibility for student schedules | 22 | 8.5% |
| Retirement | Plan for working during retirement | 12 | 4.7% |
| Student Benefits | individualized instruction, interaction w/students, parents, peer-to-peer, learning takes place any time/any place | 12 | 4.7% |
| Love of Technology and Teaching | Love technology and teaching, tech savvy, interested in teaching subject to more students | 12 | 4.7% |
| Frustration with F2F Teaching | Behavior issues, safety, district policies | 10 | 3.9% |
| Observed Online Students | Impressed with quality, home schooled students taking online classes | 9 | 3.5% |
| Locality | Moved for spouse's job, only certified in old state, able to teach anywhere | 9 | 3.5% |
| Graduate Work in Field | Masters in Ed. Tech or specializing in Instructional Technology, certificate to teach online | 7 | 2.7% |
| Personal | Poor health factors, parent was a teacher, owner of school, influential teachers and coaches | 7 | 2.7% |
| Experience as Online Student | Masters was all online, High School cyber student | 7 | 2.7% |
| Online Internship | Hired after internship in virtual school | 3 | 1.2% |

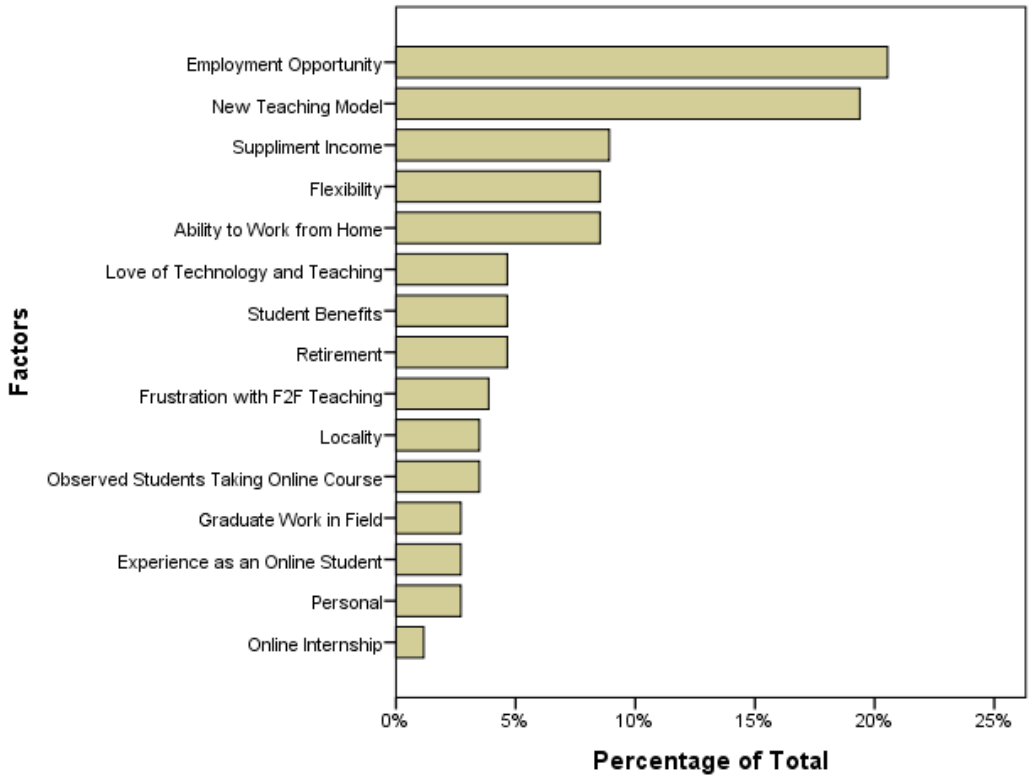


*Figure 12.* Dominant factors influencing choice to teach online.

***Employment opportunity.*** Employment opportunity was the most cited primary reason for teaching online (53, 20.5%). These teachers mentioned a need to work that coincided with an opportunity to teach online. In some cases, there was an opening to teach online, but not in a traditional classroom, as one respondent relayed, "I was out of college for over a year and had not found a teaching position. I noticed a job posting for a cyber-charter school and applied. I was called in for an interview and hired a week later."

Responding teachers noted that they had been referred by a co-worker or had a friend that taught online. One teacher described the process of deciding to teach online as "Friend taught online and I saw through her this was the path I wanted to take. I applied." Occasionally, the brick and mortar school where they worked was either starting to offer online classes or even completely converting to an online school:

> The face to face school I taught at was quickly dumping elective classes and switching to on-line. I signed up to teach on-line as my job was also "dumped" and switch to all on-line. It is much cheaper for a school to "dump" a teacher and save on salary and benefits. My attitude became, "If you can't beat 'em, join 'em!"

***New teaching model.*** Another frequent reason given by responding teachers for choosing to teach online was that they wanted to experience a new model of teaching (50, 19.4%). These teachers shared their desire to be a part of something "new and interesting" and teach in a "different way." Several of the respondents stated that they felt online teaching is the wave of the future in education, as one teacher explained, "This is where the future is headed, such great benefits to students, and the school I work for is a leader in the field." Some teachers had spent years in the classroom and wanted a "change of pace" or wanted a new challenge, as stated by one respondent, "It was an opportunity for a new challenge, to be creative and engage kids in a new way." One online teacher, also a principal, mentioned teaching online to gain a better understanding of the issues facing the online teachers at the school: "I took the position as Principal of an online school and decided I needed to teach a class to understand what the teachers were going through." Another teacher, who also taught face-to-face, explained the benefit of staying current with technology and even improved teaching in traditional settings:

> I feel that education is rapidly changing in the state of Michigan. I eventually see myself teaching only virtually and not in a face-to-face classroom. I love working with technology and working virtually keeps me up to date in the latest professional development using new tools. I feel that teaching online has also made me become a better teacher in my classroom as well.

***Supplement income.*** Twenty-three (8.9%) of the K-12 online teachers surveyed also mentioned working online as a source of part-time supplemental income. Because

online teaching can be done year-round, some classroom teachers with free time during the summer months use this block of time for online teaching activities, as one respondent explains, "Great summer job (most students take online over the summer) and supplemental through the school year (much fewer during the year)."

***Working from home.*** The ability to work from home is especially attractive for teachers who are also parents and responsible for young children. This was cited as the primary reason for teaching online by 22 (8.5%) respondents. Specifically, not having to pay for daycare, incurring no travel time, and the ability to raise a family while still being productively employed were given as reasons for teaching online. One teacher described two of the benefits enjoyed from being able to working from home: "No daily commute and I would get to spend more time with my two children."

***Flexible schedule.*** Achieving a flexible schedule for themselves and their family was a motivating factor for teaching online in the case of 22 (8.5%) of the survey respondents. The convenience of a flexible schedule was noted in the case of at least one teacher having a child with special needs: "I like the flexibility of online teaching for myself and my family. I have a diabetic child who needs me to be available during the day in case of emergency." One teacher also mentioned the advantages that flexibility provided to students attending online: "I loved the flexibility online education gave to the students, and I am able to implement good teaching practices such as individualized attention to my students."

***Retired.*** Twelve respondents (4.7%) expressed interest in teaching online after retiring from traditional, face-to-face teaching. One teacher started teaching online in preparation for an active retirement: "I wanted to broaden my horizons, update my

technology intelligence to cutting edge, and prepare for a retirement career that would allow continued employment regardless of location or physical health."

***Benefits to students.*** Twelve teachers cited the benefits realized by online students as a dominant factor for their teaching virtually. Many teachers in this category discussed having more genuine relationships with students and noticing more significant interaction between students online, compared to a traditional classroom. Other teachers were motivated by having one-on-one interaction with students and by providing more individualizing instruction. One respondent described the improved student interaction in an online environment:

> The one on one interaction I have with students. I talk on the phone or text with students daily. I feel I know more students better in an online environment. I never had the time in a physical school to have a 10 minutes conversation with every student. If students need help at 7pm, they can text me. Learning takes place at any time, not just restricted to a 6 hour period.

More actively engaging parents of the online students, even when this was not required, was also a motivation in switching to or becoming more involved in teaching online, as one respondent stated, "More involvement with parents – both required and impromptu." One teacher viewed the trend toward online education in terms of a broadened and more contemporary learning experience: "I strongly believe that online learning is beneficial for some students, and a great alternative to traditional school. It provides students the opportunity to learn in a digital classroom as part of our digital society."

***Love of technology and teaching.*** Twelve of the responding teachers indicated that their comfort with technology and love of teaching led them to combine these interests in an online teaching career. Several teachers had experience integrating

technology into traditional classroom settings and wanted to expand that integration online. One teacher describes the switch to online: “I was already doing blended online learning in the classroom and have always enjoyed technology as a means of delivering content and assessing my students. The transition to the online environment made sense.” Other teachers mentioned a desire to reach a wider audience or to more broadly share knowledge of a specific subject area. One teacher was “interested in teaching more Chinese to students in NH.”

***Frustration with face-to-face teaching.*** Ten teachers (3.9%) currently teaching online chose to leave a traditional teaching job out of frustration with behavior issues, district policies, and out of a desire for a “safer more educationally based environment.” One teacher even described leaving because of unsafe and threatening conditions in the classroom: “Having your life threatened every day in a live classroom was becoming too much to face every day.” Others moved to teaching online because of a perceived “lack of support for teachers regarding parents and students” from the administration at a traditional school. Classroom management was the deciding factor, as one participant wrote:

> I taught brick-and-mortar for 10 years, and grew increasingly discouraged with classroom management, the declining quality of students, and inability to remove disruptive and/or non-productive students (i.e. "I'm here so I can collect my Social Security, but I don't care about this class or school."). I had the opportunity to observe students taking advanced courses online in my school, was impressed by the quality of the courses, and applied for a job.

***Observed students taking online course.*** Of those teaching online to K-12 students, nine of them (3.5%) witnessed students enrolled online and was impressed with the quality of education being delivered through this medium. As stated by one

respondent, “I saw that my private school students were very successful taking online courses.” Many teachers who had their own children enrolled in online courses were positively impressed when they witnessed this type of learning. A teacher that was able to observe an online setting directly explained, “My children were attending an online school, and I saw a benefit in online schools that help students that were not benefitting from a traditional school setting.” One teacher was introduced to online teaching through her son and became involved even though she is self-described as being “anti-technology”:

> I was a stay at home mom who home schooled my sons. I put one son into a cyber school to try it in 2002. Through this venture, I met the people associated with cyber education. I was subsequently hired as a teacher when a new cyber school opened up. I liked the challenge of trying to transcend the then "distant" aspect of learning online. I would never have thought I would do this as I was somewhat "anti" technology.

***Locality.*** Nine (3.5%) teachers had searched for a job teaching online after they had moved to a different state. One teacher mentions the “possibility to live anywhere in the state” and another explains how limited certification was not a problem when teaching online:

> I was teaching in the classroom and was forced to relocate out of state to care for an ailing family member. Since I was not certified in the new state, I began teaching online so that I could teach in one state while living in another.

Several respondents decided to teach online to accommodate a spouse’s career and associated relocation, as noted by one teacher, “Needed flexibility to move for wife's job and still take my teaching job with me,” and as another teacher explained in the following comment:

> My husband is active-duty military and I was not certified in MD (where we live) so I went online and found a job with the state of VA and the Virtual Virginia

> online school the state offers. It is great. I can take this job with me to our next duty station.

One teacher moved to teaching online to avoid being tied down to one state: "I did not know where I wanted to live and did not want to be tied to a specific school district. Teaching online allowed me to teach wherever I happened to be living."

***Graduate work in field.*** Seven (2.7%) of the respondents reported a desire to utilize the skills learned from graduate courses they had taken in the education field, as described by one participant, "I wanted to use my skills learned from my Master's work and prepare for future changes that I saw in educational instruction methodologies." Several of these teachers had completed a Master's degree in Educational Technology and e-Learning, and wanted to utilize skills learned, as one teacher states, "I hold a Master of Arts in Education specializing in Instructional Technology coupled with a Master of Science in Spanish. I thought this would be the best medium for using the skills gained from both Master's degrees." One teacher returned to school and earned a certification in teaching online to "expose the students at my brick and mortar school to the online experience."

***Personal.*** Seven respondents (2.7%) found it necessary to teach online for personal reasons. The teachers that shared further details on these personal factors mentioned reasons ranging from a complicated pregnancy to bad knees to generally poor health.

***Experience as an online student.*** Seven (2.7%) respondents noted that their own experience as an online student was a motivating factor for their becoming involved in online teaching. A few of the teachers had completed a Master's degree completely

online and experienced the convenience and benefits associated with this form of learning. One respondent described this experience as, "I received my masters in an online program and it was wonderful-I learned a lot and was still able to work full time." One teacher was motivated to teach online because of experiences with both good and bad online courses: "I took many courses online with both incredible and awful instructors. This made me interested in developing and teaching online courses." After spending two years as an online high school student, one teacher decided to teach online at the same school:

> I graduated from the school at which I currently teach; I was a cyber-school student for my junior and senior years of high school. It suited me as a student, and I'm finding it also suits me as a teacher!

***Internship.*** Three of the respondents (1.2%) found themselves teaching online after completing an online internship. One teacher decided to teach online after interning at a virtual school because "it was a good fit for my teaching style." The other two teachers were offered teaching jobs upon completion of their online internships:

> University of Central Florida was conducting their pilot internship program with FLVS. I checked a little box on my internship application saying that I would be willing to participate. I met the GPA and background requirements and was selected as one of the first groups of online interns at UCF. After receiving my degree and teaching certificate, I was offered full time employment at FLVS and have been here ever since.
> ....
>
> I was working on my MAT and needed to choose schools to apply to for an internship. I didn't even know teaching online was an option. It sounded interesting and challenging so I applied and they hired me after my internship.

**Analysis of Question 35.** The second open-ended question gave respondents the opportunity to answer the following question: *What do you think are the most important attributes a K-12 online teacher must have to be highly effective?* Again, a coding system

was developed to capture the responses by theme. A total of 259 online teachers responded to Question 35 and provided characteristics they thought were most important for an online teacher to be highly effective. The developed codes, along with their definitions and the corresponding survey results, are summarized in Table 6 below.

Table 6

*Effective Attributes of K-12 Online Teachers*

| Coded Characteristic | Representative Elements of Coded Characteristic | Number of Responses | Percentage |
|---|---|---|---|
| Strong Communication Skills | Able to communicate from a distance (phone, text, email, video chats), good customer service skills | 126 | 48.6% |
| Organized and Prepared | Structured, balanced, strong time management skills, prepared, focused, accountable, diligent | 98 | 37.8% |
| Knowledgeable and Experienced | Expert in content area, desire to learn, willingness to continue professional development, can accurately assess students, knows best practices for teaching online, engaging, classroom experience, curious | 72 | 27.8% |
| Highly Flexible | Able to multi-task, open to flexibility | 55 | 21.2% |
| Motivated | Self-motivated, Type A personality, ambitious, disciplined, strong work ethic, proactive, driven, determined, hard worker, high integrity, dedicated, persistent, committed | 54 | 20.8% |
| Patient and Caring | Friendly, supportive, understanding, positive, encouraging, personable, approachable | 53 | 20.5% |
| Creative and Adaptable | Quick thinker, problem solver, able to adapt plans, open-minded, student centered, individualized instruction | 46 | 17.8% |
| Strong Technology Skills | Comfortable with technology, able to give technology support to students, able to analyze student data | 39 | 15.1% |
| Accessible and Punctual | Available, responds quickly to students and parents, provides frequent feedback, punctual with grading, attentive | 36 | 13.9% |
| Able to Connect | Interacts with students, motivating, good rapport with students and parents, passion, desire to help students | 36 | 13.9% |

***Strong communication skills.*** The most frequently cited attribute necessary to be an effective online teacher was the ability to communicate by a variety of methods, including phone, text, email and video chat (126, 48.6%). One teacher described the importance of picking up on cues when communicating with students at a distance: "Ability to get to know mannerisms/behavior via phone calls, video chats etc so that you

can still identify students who need help but may be afraid of asking." Several respondents mentioned the value of actively reaching out to students, being proactive and frequently communicating with students. One teacher advised, "Don't be afraid to call students, talk to students, and involve parents." Because the student and teacher are inherently separated in online courses, teachers describe the benefits of "excellent written and speaking skills," and the "ability to relay emotion in writing and on the phone." One teacher described the difference in communication online versus a face-to-face classroom:

> You don't see the students, you don't get to put your "feelers" out and speak and see them daily to check for understanding and their general well-being. It is much harder- disconnected phone numbers, they don't reply to emails, etc... but majority of them are responsive.

Other teachers mention "the ability to explain difficult concepts through email and chat" and "finding a mode of communication that makes the course interactive and relationships personal."

***Organized and prepared.*** Out of the 259 teachers that responded to Question 35, 98 (37.8%) stated that being structured, focused, prepared and organized were important characteristics for an effective online teacher. As one teacher put it, "These are essential in order to be able to effectively monitor student progress." One frequently noted aspect of being organized and prepared was excellent time management skills.

***Knowledgeable and experienced.*** Online teachers who are engaging and have a solid understanding of their content area were said to be highly effective by 72 (27.8%) of the survey respondents. In addition, a strong desire to learn, a willingness to continue professional development, and an understanding of the best practices for teaching online

were included as important attributes. Several teachers also mentioned the value of having prior experience with traditional, classroom teaching as a key to successful online teaching. One teacher described the importance of having teaching experience in the following comment:

> Knowledge of the face to face classroom so that the online teacher can understand what the students are experiencing, a soft heart for those difficult situations that have led students to the online courses and at the same time, a tough demeanor that allows the teacher to see through the online excuses that students use (a.k.a. teaching experience.)

***Highly flexible.*** According to 55 of the respondents (21.2%), an effective online teacher must be flexible and able to multi-task. Flexibility is essential because of the ever-changing nature of online teaching, as stated by one respondent, "an online teacher must be willing to embrace change on a daily basis as nothing is set in stone with online education." Students have varying schedules and online teachers must have "a flexible schedule to handle the late evening/early morning requests/questions."

***Motivated.*** A fifth of all respondents (54, 20.8%) stated that effective online teachers are self-motivated with a strong work ethic. One insightful teacher wrote, "Self discipline is of course important as most virtual teachers work from home." Other valuable attributes mentioned in this category used descriptive terms such as "driven," "ambitious," "disciplined," "dedicated," "persistent," and "Type A personality." Another respondent explained that online teachers must be motivated, "because the work is largely self-directed."

***Patient and caring.*** A friendly, supportive attitude, along with being patient, approachable, and caring were mentioned as being important characteristics for effective online teachers by another fifth of the respondents (53, 20.5%). As is true for an effective

classroom teacher, an online teacher must be caring, as one teacher noted, "I think any teacher has to care about the development of his or her students, everything else stems from that." However, because online teaching occurs over a distance, this same quality must be accomplished with "the ability to convey enthusiasm and caring through text." Overall patience was also a very common attribute reported. As one teacher stated:

> Patience, an open mind, a knowledge of the face to face classroom so that the online teacher can understand what the students are experiencing and a soft heart for those difficult situations that have led students to the online courses.

***Creative and adaptable.*** Forty-six (17.8%) respondents listed a range of characteristics that involved being a caring, open-minded teacher, a quick-thinking teacher, one that can adapt plans, that can personalize content for students and that manage the course in a student-centered fashion. One teacher said that online teachers "must know their students' study habits and know how to individualize the work for the students." Another teacher emphasized the importance of "Creativity in thinking outside of the box and the ability to take a classroom presentation and bring it to life in an online environment."

***Strong technology skills.*** Thirty-nine respondents (15.1%) listed comfort with technology as an important attribute for an online teacher. Many teachers described the value of an ability to "read data to determine if students are making learning progress," and being able to provide technical support to the online students. It was also noted that online teachers should be willing to try and adapt to new technologies, as one teacher describes in the following comment: "You must be comfortable with technology and you must be willing to be an active learner, because we are still 'writing the book' on online education."

***Accessible and punctual.*** Being available to students with punctual responses was described as an essential trait by 36 respondents (13.9%). Several participants mentioned how critical quick and frequent feedback was to a successful online course, as stated by one respondent; online teachers "must be able to manage their online grading, instructing, answering emails, etc. in a timely fashion so they can adhere to a definite end time and then move away from the computer." Many teachers pointed out how important it was for the online teacher to have a constant presence in the online course and to be "available ALL the time!" and to be "able to work 365 days a year!" and have "tolerance to a 24/7 on-call type of work schedule." One respondent revealed that: "Many families look at online teachers as needing to be available 24/7, meaning they don't want to wait a long time to get responses." Some teachers described the difference in availability from a face-to-face classroom teacher, saying that an online teacher must "be willing to work all day/all night long, be willing to serve many more students than they normally would in a face to face environment."

***Able to connect.*** The ability to connect and motivate online students was frequently cited by respondents (36, 13.9%) as an important attribute for an online teacher. As is true in face-to-face classrooms, online teachers reported the need for an ability to motivate and build relationships with students, even though these relations must be created through digital forms of communication. One teacher describes this new way of connecting as, "Teachers must have the ability to develop relationships with students via technology since the face to face interaction isn't necessarily built into the class." Another teacher cited the "ability to motivate kids and the ability to build and nurture teacher/student relationships through electronic media."

Several teachers discussed the importance of building a community online and to be "willing to spend the time it needs to try to establish more personal responses and connections with students." Connecting with the parents, in addition to the students, was also a frequent response, as one respondent explained, "Connect with student and parents. Parents have to think it's important and worthwhile to get their students in the class." One teacher reported, "making efforts to encourage students to connect via messaging rather than face-to-face contact" as an imperative skill for online teachers to be successful.

**Summary of research question 1 results.** The data gathered from the teachers in this study helped to create a profile of the personal demographics, educational background and teaching experience of those currently teaching online to K-12 students. Respondents indicated several factors that influenced their decision to teach online, including employment opportunities, an interest in a new way of teaching, and the opportunity to supplement their income with part-time work. Being organized, prepared, knowledgeable, and experienced were reported as important attributes for an effective K-12 online teacher, as well as having strong communication skills.

**Research Question 2: Quantitative Results**

**Overview.** Data relating to pre-service training and in-service training was collected and analyzed to determine how teachers are currently being trained within the context of this study's second research question:

*How and to what extent have current K-12 online teachers prepared for this form of teaching?*

The data received in response to this question is presented below in two major sections: the first focuses on the pre-service training received by the respondents in the

course of their formal teacher education program; and the second focuses on in-service training received in the course of their employment as teachers.

**Pre-service training.** This section of the survey examined the pre-service training of K-12 online teachers. The survey responses identified the teacher education programs in which the respondents were enrolled and the coursework or field placement opportunities offered to prepare them in the design and delivery of online content to K-12 students.

***Teacher education program.*** Participants were asked for the name and location of the institution or teacher education program where they studied to become a teacher. The two states most frequently identified were Michigan (77, 25.8%) and Florida (72, 24.1%). Multiple institutions were identified within each of these two states. Those attended in Michigan included Central Michigan University, Eastern Michigan University, Michigan State University, and Wayne State University; while those attended in Florida included University of Central Florida and University of North Florida. Three other states having teacher education programs that were frequently identified by the respondents included Arizona (17, 5.7%), Indiana (25, 8.4%), and Pennsylvania (22, 7.4%).

***Coursework.*** Of the 325 responding teachers who were involved in K-12 online education, only 53 or 16.3% attended a teacher education program that offered any form of training directed to the design and delivery of online content for K-12 students. Depending on the program, this training might include elements such as assignments, discussions, or in a few cases, online field experience. In those cases where coursework was offered as part of a student's pre-service training, 37 respondents (11.4%) had reading assignments, 37 (11.4%) had course discussions, 33 (10.2%) had writing

assignments, 28 (8.6%) had examples or demonstration, and 29 (8.9%) had direct experience or modeling. Ten of the teachers described "other" pre-service training that variously included internships, web design, tutoring students, and courses in educational technology, technology integration and basic computers. One teacher stated that the experience of having been an online student in undergraduate school helped in understanding the process and preparing to actually teach online.

***Field placements.*** In addition to coursework pertaining to teaching K-12 students in an online environment, 12 (3.7%) of those surveyed experienced an online field placement during their teacher preparation program. Seven of these teachers were at universities in Florida (University of Central Florida, Northwest Florida State College, and Stetson University), while the remaining five respondents attended universities located in Michigan (Madonna University), North Carolina (East Carolina University), New York (City University of New York), and Arizona (Arizona State University). This limited number of online field experiences typically involved 40 hours of participation per week over an entire semester. The interns participating in these programs were able to work from a home computer to communicate with other interns, university supervisors, and with the K-12 students and parents in the classes being taught. The responsibilities assigned to these interns included grading, monitoring, discussions with students, conference calls with students and parents, and creating plans for direct instruction online.

**In-service training.** This section of the survey collected information on the training received during the course of a respondent's employment in relation to teaching

K-12 students online, including the different types of training offered to the teacher and the duration of any formal training.

Most of the K-12 online teachers surveyed (265, 81.5%) reported that they had received some form of employment-related formal training on how to teach online. The responses described a wide range of training elements, including orientation training, workshops, demonstrations, coursework or online field experiences. Only two of the teachers that did not receive any formal training on how to teach online during their employment had received such training during their teacher preparation program. However, 45 (13.8%) of the responding teachers received no training on how to effectively teach online to the K-12 students they are currently assigned to teach.

The K-12 online teachers reported that they received an average of 63 hours of formal training during their employment as a K-12 teacher, with a minimum of 1 hour and a maximum of 600 hours. In addition, several of the teachers commented that their training was "ongoing" or "hard to determine" or involved "too many hours to count."

The online teachers who indicated that they had received some form of formal training on the job were asked how this training time was distributed among different training activities. The average amount of time spent in various training activities was 48 hours, but the responses covered a dramatic range of time, from zero to 600 hours. Again, many stated that they had "countless" hours of this type of training or that it was "hard to determine" or was simply unknown. Those respondents who were involved in a field experience or mentoring as part of their employment received an average of 22 hours of such training in relation to their online teaching, with the range of responses being between one and 250 hours. Several teachers mentioned that their field

experience/mentoring was ongoing and three said they were involved in a mentoring program during their first year of online teaching. Three teachers felt that teaching online gave them this type of formal training and one respondent mentored other online teachers as part of his/her job.

**Research Question 2: Qualitative Results**

**Overview.** The previous section described the quantitative results derived from the current study. This section will provide the qualitative findings based on the participants' responds to two open-ended questions included as Questions 36 and 37, which were stated as follows:

Question 36: "Describe how you were prepared or how you prepared yourself to teach online. What training or preparation did you find to be the most helpful to teaching in this environment?"

Question 37: "Based on your experience teaching online, what elements of training would be the most valuable in preparing new online teachers?"

Using the qualitative methodology of grounded theory (Strauss & Corbin, 1998), responsive themes or characteristics were extracted from the survey responses and categorized according to appropriate codes. Additional codes were created to encompass all material elements within the responses. The findings derived from the responses to these two open-ended questions are presented in the following topical paragraphs:

**Analysis of Question 36.** This question asked respondents to: *Describe how you were prepared or how you prepared yourself to teach online. What training or preparation did you find to be the most helpful to teaching in this environment?* A total of 252 K-12 online teachers provided responses to this question. These responses were

separated according to equivalent characteristics and coded accordingly. In the following Table 7, each coded characteristic is described along with the number and percentage of participants who provided a corresponding response regarding the factors which contributed to their training.

Table 7

*Training Received*

| Coded Characteristic | Representative Elements of Coded Characteristic | Number of Responses | Percentage |
|---|---|---|---|
| Ongoing Training | Meetings, workshops, webinars, short training sessions | 97 | 38.5% |
| Self Taught | Learned by doing, researched various resources (websites, blogs, articles, etc.) | 79 | 31.3% |
| Orientation | New Employee Training, initial, pre-job training | 68 | 27% |
| Mentor | One mentor, set of mentors | 41 | 16.3% |
| Colleague | Other new hires, "Content Buddy" | 34 | 13.5% |
| Graduate Work | Masters in Ed. Tech., online certification classes | 32 | 12.7% |
| Online Student Experience | Completed one or more courses online, as an undergraduate, graduate or K-12 online student | 20 | 7.9% |
| No Training | No training received, no training needed, not at all prepared | 14 | 5.6% |
| Conference | Annual conferences, iNACOL | 14 | 5.6% |
| Classroom Teacher Experience | Same training as for a regular classroom teacher, time spent in classroom beneficial to teaching online students | 12 | 4.8% |
| Observation | Spending time "watching" an online class/teacher | 6 | 2.4% |
| Internship | Online internship | 3 | 1.2% |

***Ongoing training.*** Continuous training, typically provided by the virtual school, was the most frequently identified form of training completed by the online teachers surveyed (97, 38.5%). Training in this category ranged from routine meetings (e.g., over the phone to discuss best practices) to periodic workshops and webinars offered throughout the year. While such training was commonly made available to all employed teachers, it was not always mandatory. As one online teacher described ongoing training:

> I initially took a 40 hour online training that introduced me to online learning. Part of the training dealt specifically with online instruction. I also learned about effectively communicating, working with difficult families, etc. We have weekly

> staff calls where we are continually learning new information. We have professional development which allows us to meet together face-to-face and learn from one another.

Several respondents said they felt prepared to use the technology required for online teaching after having received such training but believed that general teaching skills are the same whether the student is attending online or in a traditional classroom, as described by one teacher: "Training offered by my school prepared me for the online tools I would need. The skills for being an effective online teacher are not very different than in the brick and mortar classroom."

***Self-taught.*** Seventy-nine respondents (31.3%) explained that their preparation for online teaching was self-taught, indicating that they learned the process by teaching themselves and by "actually doing it." Experience and practice are always a component of the learning process and this is true in learning how to teach an online class. Self-teaching was not only the method of training reported by many of the respondents, many felt that practice was the best way to learn. One teacher stated that "nothing prepares you more than experience," another teacher explained that "the best preparation is practice... teaching is still teaching," and a third teacher reported, "at the beginning, I did not feel prepared. It takes about 6 months of doing it to really get a grasp on what your job entails and how to do it effectively." One teacher described the self-teaching method used as follows: "I learned by fire! I read every article, tweet, blog etc I could find. I love the INACOL publications and have learned a lot from their conferences."

***Orientation.*** Another frequently cited method for training (68, 27%) was through participation in some form of employer sponsored orientation training. Online providers generally require some form of initial training before a teacher is assigned a class, as

described by one teacher, "Before being hired, I had to complete an online orientation class that used the same teaching principles as the system we teach through." Some of the orientations described by respondents lasted several weeks, as one teacher described, "I took my virtual high school's one month training, which helped get me used to teaching online."

***Mentorship.*** Learning to teach online with the aid of one or more mentors was reported by 41 teachers (16.3%). Some teachers participated in several sessions of training online with a mentor, while others were offered mentoring support over the phone. One respondent explained the value of having a mentor: "The mentor program was extremely helpful to learning how to do this job. For months, I met on the phone with a small group of teachers and a mentor to learn strategies on how to do this job and participated in short training sessions." One teacher described the extent of mentoring support that was received:

> At the completion of this training, I was assigned a set of mentors for general questions, as well as a mentor/peer partner within my content, in addition to being welcomed with open arms by a small pod of about 10 teachers to whom I could also bounce ideas and questions off of at any time. The level and amount of support found in this virtual environment was much greater than any I'd ever experienced in the classroom.

***Colleague.*** Thirty-four respondents (13.5%) received help and guidance from a fellow online teacher. Some teachers were partnered with a "Content Buddy" to discuss online teaching techniques pertaining to their specific content area. Teachers described the benefits of having "colleagues to walk you through questions/answers and procedures 24/7" and "working with other teachers to talk about what works and what does not." One teacher described the opportunities for support from colleagues as follows:

"Collaboration is encouraged and facilitated and structured opportunities to share best practices with other online teachers."

***Graduate work.*** Information covered in graduate courses, such as educational technology or online teaching, helped to prepare 32 (12.7%) of the K-12 online teachers. Graduate level courses focused on the process of online teaching can bridge the gap between face-to-face teaching and teaching at a distance. One respondent described the benefits of completing graduate-level coursework involving educational technology and teaching online:

> I took online graduate courses in educational technology, and saw many different teaching styles online. I also took courses directly for online teaching - both helped me develop curriculum, activities and strategies for online teaching. I continue to try out new technologies and learn how to make my course more interactive.

***Online student experience.*** Twenty of the surveyed teachers (7.9%) suggested that their experience as an online student contributed toward their preparation to teach online. One respondent relayed, "I do almost everything online. I went to an online college. From that I learned what I liked from teachers and what I liked as a student." One teacher went a step further and actually attended the same online class as the students:

> I prepared for online teaching by taking online classes at the University I attended. I also take the online classes that the students are working in so that I know and understand how the material is presented so I can help direct the student to supplement resources or prepare additional information or lessons that will help the student understand the information.

***No training received.*** Fourteen of the responding teachers (5.6%) indicated that they had received no training on how to teach online to K-12 students. Some teachers indicated that they had not received proper training, because they started teaching online

in its infancy, as one respondent described, "I had no prior training 10 years ago. In the past years, the idea of teaching online has gained momentum "some" presenters touch on this." Some of the respondents stated that their preparation programs may have covered areas such as technology, but not the use of technology as a K-12 delivery method, as one respondent reported, "I was not prepared at all to teach online. The teacher education I was enrolled in focused mainly on using technology in the classroom and not as the classroom." The following statement was provided by one of the teachers who had received no training at all:

> There was no preparation and I was literally thrown into this position with little to no training. It was sink or swim and I sunk. It was a hard transition for me between going to the classroom and the online environment. Thankfully I kept on and this year, my fourth year, I finally feel comfortable in my position.

***Conferences.*** Of those responding, 14 (5.6%) reported that they attended conferences to aid in their preparation to teach online. Several teachers reported that attending virtual or face-to-face conferences was helpful to their online teaching. Annual conferences also provide virtual teachers with updates regarding trends in the field and opportunities to share their experiences. One teacher describes the benefits of attending conferences and how they are recorded for later viewing by new online teachers: "We also have a yearly conference with multiple breakout training sessions to meet your needs. All of these are recorded and offered as an online professional development for new teachers."

***Classroom teaching experience.*** There were 12 (4.8%) respondents that cited experience as a classroom teacher as the method for preparation to teach online. A few teachers wrote that the training needed to teach online was no different than the training

to teach face-to-face, such as the following response from one teacher: “The same preparation as for a regular classroom teacher.” Other respondents indicated that prior classroom teaching experience provided a critical foundation for online teaching, as one participant stated, “Being a teacher for nine years was the most helpful, as it taught me flexibility and how to provide multiple ways to get to an answer.” Another teacher reported:

> Teaching in a physical classroom for 6 years was invaluable experience. I can't imagine teaching online without first having taught in a physical school to "find my way" so to speak. You have to learn how to present information with the feedback of student's faces and action to really know your content and be able to deliver content blindly over the phone, in written feedback or dialogue in virtual classrooms.

***Observation.*** Six respondents (2.4%) had observed veteran online teachers to learn and to prepare for their own online teaching. One teacher emphasized the importance of observation: “Observing other teachers is/was the best way to prepare. Seeing what others do gives you ideas on what will work best for you.”

***Internship.*** Three of the teachers (1.2%) gave credit to an internship in virtual education as an important element of their preparation to teach online. A former online intern describes the role of an internship in preparing oneself to teach online and the importance of this experience: “Honestly, it is a lot like learning a language the best way to prepare is to be immersed in it through an internship or a part-time job in the field.”

**Analysis of Question 37.** Open-ended Question 37 asked respondents for a hindsight perspective on what elements of preparation would be most helpful to new K-12 online teachers: “Based on your experience teaching online, what elements of training would be the most valuable in preparing new online teachers?” A total of 252

respondents provided one or more answers to this question. These responses were coded by theme and 13 different characteristics were identified. The following Table 8 includes definitions of these codes together with the number and percentage of respondents whose answers fell within each of the coded category.

Table 8

*Training Elements for New Online Teachers*

| Coded Characteristic | Representative Elements of Coded Characteristic | Number of Responses | Percentage of Responses |
|---|---|---|---|
| Technology | Tools, skills, LMS, programs, posting lessons, electronic grading, websites, webinars, troubleshooting student technology issues | 94 | 37.3% |
| Mentoring | Sharing ideas, shadowing colleagues, ability to attend mentor's class, cohort group of new teachers | 58 | 23% |
| Communication | Online and phone etiquette, customer service, feedback | 53 | 21% |
| Hands On Training | Practice with real-life scenarios, practice with small group of students | 42 | 16.7% |
| Time Management | Life/work balance, setting realistic and clear expectations, managing time spent teaching | 27 | 10.7% |
| Class Management | Organization, managing student data, procedures, student accountability and expectations | 26 | 10.3% |
| Content and Materials | Knowledgeable in content area, creating online materials, available resources, building assessments to avoid plagiarism | 20 | 7.9% |
| Ongoing Training | Continuous professional development, orientations, conferences, designing training based on school/format | 18 | 7.1% |
| Online Teaching Strategies | Training based on online teaching standards, learning strategies for teaching online, best practices, online issues | 17 | 6.7% |
| Certification and Courses | Learning Edge Certification, Advanced Professional Certificate in Online Teaching, courses in online education | 16 | 6.3% |
| Engagement Strategies | Relationship building, knowing audience, strategies to engage, encourage, motivate, support | 14 | 5.6% |
| Classroom and Online Experience | Prior experience as a classroom teacher, experience as an online student | 13 | 5.2% |
| Field Experience | Internship/student teaching in an online classroom | 12 | 4.8% |

***Technology.*** Based on their individual experiences in teaching online, 94 respondents (37.3%) suggested that training on available technologies was the most valuable form of training to prepare new online teachers. Teachers suggested both

general technical training, as stated by one respondent, “Anything technical about the job. You won’t know how to do anything without this training” and specific training, based on particular systems used at the virtual school, as described by another teacher, “Learning the nuances of the myriad of programs in use that helps in executing one's teaching responsibilities to the fullest - they are our friends and not the foes.” Some respondents identified specific programs for which training was or would be helpful. These included: Blackboard Collaborate, Moodle, Genius, Microsoft Excel, Skype, Camtasia, Wimba, SnagIt, Web 2.0 sites, and more generally the “tools of the platform of the course - inserting pictures, posting lessons, grading tools, etc.” Many emphasized the importance of being comfortable with the Learning Management System (LMS) that was adopted by their institution, as described by one teacher, “The technical aspects of using the LMS are the biggest obstacles most teachers experience. Once they have mastered that part it’s pretty easy.” For many respondents, an ongoing understanding of changing technologies and “evolutional” programs was also cited as important to training new online teachers. One respondent stated, “Technology is constantly changing and we need to know about it.” Troubleshooting with technology was frequently mentioned as a topic for training, both teachers, such as, “Technology! They have to have a command of technology and know how to deal with any tech issue that may arise” and students, for example, “Most kid issues stem from their computers not having correct video player or software. Being able to walk them through changing file format or allowing something through their fire wall is very handy.”

***Mentoring.*** Fifty-eight respondents (23%) stated that access to a mentor was a critical training element for new online teachers. As one teacher described, “Mentoring is

crucial. Learning the basics is naturally needed, but a mentor can really show you how to survive until you get your feet under you and develop your own systems and routines." Many teachers mentioned the value of an opportunity to "shadow" an experienced online teacher to "get a sense of how things work and pick up best practices." In addition to having access into a mentor's online class for observation, one respondent suggested the option of observing a current online teacher in action in their home office in order to guide teachers new to the online environment.

***Communication.*** "New online teachers need to know how to communicate electronically with students" was a recurring theme identified by 53 (21%) of the online teachers surveyed. Some respondents emphasized the need to be trained in telephone etiquette, such as "conflict management using the phone, and being able to relate different concepts over the phone & online," while others suggested preparation in written forms of electronic communication, for example, "very effective written communication, they need to learn how to convey the correct message tone through written communication to students since that is how most communication is handled." Because there is usually little or no face-to-face contact between the teacher and students, one teacher describes the importance of being trained in online communication in the following terms:

> The willingness to make frequent calls to students to explain things to individuals, to discuss key points, to remind them to work, to keep the parents involved, and to let them know you are a real person out there who is involved in their learning.

***Hands on training.*** Forty-two (16.7%) of the respondents cited hands on practice as the most important element of training for teachers new to the online environment. One teacher suggested, "Most definitely a clinical aspect, classroom education can only

do so much in a field that is so 'hands-on'." The idea of practicing with a "fake" or "pre-built" class was suggested by several respondents as a method of training before a newly hired teacher takes over a live online class, as described by one teacher, "A hands-on simulated class that you had to manage, with incoming assignments to grade, emails to respond to, etc." Another common suggestion was to provide "real life examples of how to trouble shoot with students."

***Time management.*** Training on how to manage one's time was identified by 27 respondents (10.7%) as an important capability for any online teacher and a capability that can be improved through proper training. Many of the online teachers mentioned the importance of "teaching life-balancing skills" and they describe how "it can be hard to walk away from the computer." Others explain that teachers who are new to online teaching must be aware of the increased demands on their time imposed by the online environment, "that the preparation and availability is greater than traditional schools," and that they must "be ready for the rigorous schedule of teaching online."

***Class management.*** Twenty-six respondents (10.3%) suggested including elements of training that covered class management and organization in an online environment. A teacher explained, "Online management is different than in person management, so you need good tracking skills and data analysis skills as well." Responding teachers also suggested training that focused on electronic record keeping, online procedures and processes, and efficient ways to remotely manage students, as one respondent stated, "The volume of information can be overwhelming and you have to know how to properly organize and attack it to be successful." In addition to having new teachers learn the importance of setting clear expectations and holding students

accountable, one teacher cited the “need to learn about the best way to assess progress and understand the complexities of grading work that is submitted by students.”

***Content and materials.*** Being knowledgeable in the content area being taught and able to create appropriate online materials was considered an important training element by 20 (7.9%) of the teachers surveyed. Although face-to-face teachers must have a thorough understanding of the course content, online teachers “need a strong content knowledge because of the flexibility with which they need to work within the courses.” Learning “how to create interactive and differentiated lessons for the online learning environment” was reported as an important skill by one teacher. Training in the ability to convert material into a format that is conducive to an online environment is also a valuable skill, as one teacher suggests, “writing curriculum that works for the online environment yet is still engaging. Before I redid my coursework, there were many "projects" or assignments that didn't work for the online community.”

Another teacher considers the benefits of shared resources as an aid in explaining concepts to online students:

> After a few years, I now have many resources (videos and tutorials) I have located to help explain concepts students find more difficult. New teachers would probably benefit from an organized list of resources (organized by concept). It would be great if there was a way to 'pool' our resources in an organized way.

Several respondents mentioned the possibility of including course and examination design techniques that limit or prevent cheating, plagiarism, and other short cuts. One teacher emphasized this need by stating, “Teachers should be better prepared for the massive amount of plagiarism. Making sure students are not cheating should be emphasized above all else.” One teacher asked, “Are there better ways to track if students

are doing their own work or to keep them from cheating?" Another teacher suggested the need to build assessments to avoid plagiarism:

> Copying and pasting from the Internet is a huge issue. Developing assessments that do not allow for this is very important. Limit the number of attempts on completing assignments, especially if multiple choice. They just retake to get 100 without learning from mistake. I limit to 3 and average scores for final grade. Explain the concept thoroughly and students put forth more effort.

***Ongoing training.*** Although the type of training offered to online teachers may depend on the school and the format in which its classes are offered, 18 respondents (7.1%) cited "additional training" or "continuous professional development" as the most valuable aspect of online teacher preparation. Training suggestions included "a quick face-to-face immersion at the new-hire stage," and "training weekly in Live Sessions, since we are [already] virtual."

***Online teaching strategies.*** Teaching strategies and best practices for success in teaching online were cited as important training elements by 17 of the respondents (6.7%). One teacher explained that new online teachers should know "how to translate classroom teaching into an online environment," and "how to set up instruction most effectively." Another teacher mentioned the need for training in how to translate face-to-face teaching techniques into an online environment:

> Being able to innovate and come up with solutions [that] still address current trends; how can you get students to work cooperatively online? how can you get students to hit the presentational mode in communication? how do you present information in different ways so that it is not text heavy?

Several teachers mentioned training directed to the uniqueness of teaching at a distance, such as, "Research-based training in how teaching online is different and how it can be

effective for a variety of learners," and "Most important is learning the types of situations that have to be handled differently from physical classroom situations."

***Certification and courses.*** To prepare new online teachers, 16 respondents (6.3%) suggested taking courses specifically directed to online education. Benefits from these types of courses and issues that might be covered in such courses were described by one respondent:

> I think a course in online education could be beneficial. Online education comes in a variety of formats in which teachers have a variety of responsibilities. I think it is important for preparing teachers to understand the different types of online education, how these institutions are effected by state legislatures and the extent of teacher responsibilities in each one.

Other teachers suggested a certification program, such as Leading Edge Certification or Advanced Professional Certification in Online Teaching as a vehicle for the comprehensive preparation of new online teachers. One respondent enumerated topics covered in an online teacher preparation course offered at Boise State: "Training in social media, screen casting, building apps and games, youth development and counseling, how to work with at-risk youth who have no interest in school. All these would be helpful."

***Engagement strategies.*** Fourteen (5.6%) of the surveyed teachers listed techniques to engage, encourage, motivate and support online students as important skills for any online teacher. One teacher noted the opportunity for some form of training to develop these skills:

> Definitely keeping students engaged. I have found that infinitely more difficult than engaging students in the classroom, because students have the ability to simply not sign on. There are a lot of students who will lie to their parents about the progress they are making, so the challenge is to get students to want to learn for a reason other than getting grounded if they don't.

Because the online teacher and student are separated from one another at least by distance and often by time, many current online teachers noted the importance of "knowing their audience" and understanding how to build relationships not just with students but also with parents and members of the institution's staff.

***Classroom and online experience.*** Having prior experience as a classroom teacher or having taken an online course was recommended for new online teachers by 13 (5.2%) of the survey respondents. One teacher explained that "Taking online courses allows new teachers to get a sense of the differences in online learning. Depending on if the course is asynchronous or in real time, I think live sessions may also be helpful for training." One suggestion for teachers expecting to teach online was to experience the class to be taught by enrolling as audit credit in order to "see how it works" before teaching the class.

Other respondents stated the "know your audience" requirement in the context of having classroom experience before teaching in any online environment. One teacher stated, "Classroom experience! You must be able to relate to the student first and foremost before tackling a remote teaching environment."

***Field experience.*** Twelve of the respondents (4.8%) recommended an online field experience for newly hired online teachers. One of the few teachers surveyed that had completed an online internship remarked, "My field experience was most valuable however, I realize that is not yet [available] through all Universities and teacher preparation programs." Another teacher shared the observation that, "Teachers learn more about the art of teaching, when they are student teaching, than at any other time in the initial formative process. I think the same is true for online teaching."

**Summary of research question 2 results.** Because there are so few opportunities for pre-service teachers to be exposed to proper training in the techniques and methods for online teaching, especially at the K-12 levels, most of this form of training occurs once a teacher is hired to teach online. Out of those responding to this study, 14% of the K-12 online teachers received no training or preparation at all, and report self-teaching as the method for preparing themselves. The teachers that received some form of preparation to teach online describe being trained mostly through orientations, mentors, or in an "ongoing" format.

**Summary of Overall Results**

From the data collected in this study, it was possible to create a current picture of who is currently teaching online to K-12 students, including personal demographics, educational background, and experience. Mostly Caucasian females in their forties make up the K-12 online teaching population. These teachers also tend to have a much higher level of education than traditional, face-to-face teachers, as well as more incidents of having long-term teaching experience. A variety of reasons led the respondents in this study to their current online teaching job, including the flexibility that the job offers, ability to work from home and overall frustration with issues in the face-to-face classroom. Suggested attributes for an effective online teacher at the K-12 levels included being patient and caring, very knowledgeable in the content area taught, and having strong time management skills.

Current K-12 online teachers responding to this study indicated that most of their preparation to teach online was provided by an employer upon being hired. Very few of the respondents experienced any form of preparation during their pre-service training or

teacher education program. The elements of training that respondents cited as the most helpful for newly hired online teachers included the areas of technology, and the many ways that teaching must be adapted for the online environment.

# CHAPTER 4

# DISCUSSION

## Summary of Research Problem and Method

The purpose of this study was to determine demographic and preparedness of current online teachers at the K-12 levels. The objectives were to: (a) define the demographics of those teaching K-12 online; (b) demine how and to what extent these teachers were prepared to teach K-12 online; and, (c) compare these findings with the results from a similar survey conducted six years earlier by Archambault (2008). The present study collected information from 325 teachers responsible for at least one K-12 online class. The two underlying research questions that this study sought to answer were:

1. What are the current demographic characteristics of K-12 online teachers in United States and how do they compare to six years ago?
2. How and to what extent have current K-12 online teachers prepared for this form of teaching?

This chapter will discuss the findings, implications, and limitations of the present study and suggest areas for future research in the area of demographics and teacher training in K-12 online education.

## Interpretation of Data and Results

### Demographics of K-12 Online Teachers in the United States

**Overview.** The data yielded a profile of those currently teaching online to K-12 students across the United States. The information from the underlying web-based survey was also used as a base for comparison to similar demographic data collected some six

years ago by Archambault (2008). As in the 2008 study, the current K-12 online teacher profile is that of highly-educated, Caucasian females in their mid-forties.

**Personal demographics.** The personal demographic data from the present study was initially compared with two other sources: the 2008 study by Archambault involving online K-12 teachers, and a 2013 study by the National Center for Educational Statistics (NCES) which involved the demographics of some 3.8 million face-to-face K-12 teachers (Goldring, Gray, & Bitterman, 2013). Many of the demographic characteristics across online teachers and face-to-face teachers are the same. The 2013 NCES survey showed that traditional classroom teachers are predominantly female (75%) and racially classified as non-Hispanic, white (83%), and the average age of surveyed face-to-face teachers is 43 years. These broad-based national statistics for traditional teachers correspond to the results from both the current and 2008 study of online teachers. Both studies also found that online teachers are primarily white females with an average age of 43. Since most online teachers are drawn from the entire population of K-12 teachers encompassed by the 2013 NCES survey, the personal demographics of the online teachers should be expected to correspond to the general population of which they are a subset.

**Education.** Data revealed one of the most pronounced differences between traditional teachers and those teaching online is the level of their educational attainment. In the case of face-to-face teachers, 41% hold a Bachelor's degree, 46% hold a Master's degree, and 9% hold any degree or certificate beyond the Master's level (Goldring et al., 2013). Archambault (2008) found that the educational level achieved by online teachers (96% Bachelor's, 62% Master's, 3% Doctorate, 13% additional certificates) was higher than traditional teachers. The current study showed an even higher level of education in

the case of online teachers (97% Bachelor's, 72% Master's, 3.7% Doctorate, 32% additional certificates). The difference in educational attainment was particularly dramatic with respect to those who completed their education at or beyond the Master's level. These findings also reflect the results from the national survey of online teachers conducted by Dawley et al. (2010), who found 60% of the surveyed teachers held a Master's degree or higher. The comparative level of educational attainment derived from these four studies and from census data for the general population (U.S. Census Bureau, 2013), is summarized in Table 9 below.

Table 9

*Education Attainment Compared*

| | Bachelors Degree | Masters Degree | Beyond Masters |
|---|---|---|---|
| General U.S. Population (2012) | 31% | 8% | 3% |
| All K-12 Teachers (2013) | 41% | 46% | 9% |
| K-12 Online Teachers (2008) Archambault Study | 96% | 62% | 16% |
| K-12 Online Teachers (2010) Dawley et al. Study | 39% | 53% | 7% |
| K-12 Online Teachers (2014) Present Study | 97% | 72% | 36% |

In comparison to all K-12 teachers, those teaching online are over 50% more likely to have a Master's degree and four times more likely to have exceeded the Master's level of educational attainment.

**Content fields.** The content areas studied by teachers generally corresponded to the content areas in which they taught. In the case of the online teachers in this study, the three most frequent areas studied for Bachelor's degrees (mathematics, science and social

studies) were the same as the three most frequent content fields of the respondents' online classes. In addition, 36% of the Master's degrees were in the field of education, with nine additional teachers working toward a Master's degree. Four of the reported doctoral degrees were in Educational Technology, with an additional nine teachers currently in the process of attaining their doctorate degrees. To place the educational attainment of teachers in perspective, only 8% of Americans hold a Master's degree (U.S. Census Bureau, 2012), while 46% of all K-12 teachers hold this same degree. This higher level of attainment could be due to financial incentives, a high value placed on education, or an overall interest in learning and related challenges. The intriguing question is why would the number of Master's degrees be 50% higher in the case of online teachers as compared to all K-12 teachers? Certainly economics plays a role, especially considering that many teacher compensation systems pay higher wages to those with Master's degrees. But this explanation applies to all K-12 teachers, including those who teach online and should not be a significant differentiating factor. The K-12 online teachers surveyed for the present study revealed in their comments that they had always been interested in learning, in academic attainment, in taking on new challenges, in wanting to learn and do something new, and in wanting to be at the forefront of technology. If these self-reported characteristics are accurate, the long-term prospects for quality online teaching may be very favorable. Generally, any field of endeavor would be enhanced by participants having these personal characteristics together with the underlying values that they manifest. More particularly, online teaching, being a highly independent form of work conducted on a remote basis, may actually require educators having many of these characteristics.

**Time allocation.** Another difference between K-12 classroom and online teachers relates to how these teachers allocate their time. Over 90% of traditional teachers are currently in a full-time teaching position, spending an average of 52 hours a week on all teaching-related activities (Goldring et. al, 2013). Both the 2008 study by Archambault, and the present study found that only half (54% and 50%) of K-12 online teachers taught full-time. This significantly lower level of full time employment can be attributed to several factors, not the least of which is that many online teachers also teach face-to-face during the day. Many online teachers also mentioned that they came to teach online because of an opportunity to make additional money or to earn supplemental income during the summer, when they normally are out of work. Having the flexibility to work fewer hours provides opportunities for online teachers to finish more school themselves, raise a family, work another job, and even keep a foot in the education field during retirement.

**Teaching assignment.** Online teachers were asked to state the average number of students enrolled in their course(s), on any given day. Respondents reported an average of 100 students, which was very close to the average of 97 reported six years ago. Online teachers are often responsible for more students than teachers in a traditional classroom. Although student-teacher ratios vary across grade levels, Goldring et al. (2013) found that there is an average of 18 students in each high school class. Since over half (56%) of the online teachers in the current study teach only at the high school level (grades 9 through 12), the study's average enrollment figure of 100 students suggests a substantial difference between traditional and online teacher-student ratios. Several factors may contribute to this disparity, particularly in the case of the upper-level online

classes. The more formal structure of high school classes may make them more adaptable to online teaching. As was the case six years earlier, about a third of online teachers in the present study reported teaching only one class, with an average of 100 students. Considering that the majority of surveyed secondary online teachers have only been trained to teach in a face-to-face classroom having an average enrollment of 18, it is important to consider what additional preparation might be needed to teach, manage and communicate with a single class of 100 online students.

**Teaching experience.** Another trend in online teacher demographics is the increase in the average teaching experience, compared to online teachers surveyed six years ago and compared to traditional, face-to-face teachers. Although the overall average number of years teaching in any format is similar across these categories (14 to 15 years), what is interesting is the comparison between newer teachers (teaching less than four years) and more experienced teachers (teaching more than four years), both traditional and online. Currently, 12% of traditional teachers have been teaching for less than four years, and 10% of the online teachers in Archambault's 2008 study had been teaching for that amount of time. By contrast, the current study shows only 5% of the K-12 online teachers have been teaching for less than four years, including both face-to-face teaching and online teaching. The percentage of teachers teaching more than four years is also different between the various categories of teachers, as shown in Table 10 below.

Table 10

*Distribution of Teaching Experience*

| Teaching Experience | Traditional | Online (2008) | Online (2014) |
|---|---|---|---|
| Average Total Years of Teaching | 14 years | 14 years | 15 years |
| Taught more than 4 years | 88% | 90% | 95% |
| Taught less than 4 years | 12% | 10% | 5% |

Archambault's 2008 study also compared the number of years of teaching experience as between those that taught online full-time versus part-time. As in the 2008 study, the present study showed that part-time online teachers tend to have more years experience (average of 19 years) than those teaching full-time (average of 11 years). This increased level of teaching experience may be due to the fact that many veteran teachers are teaching online part-time during their retirement, or perhaps the more experienced teachers feel comfortable taking on more work, in addition to a full-time, traditional classes.

**Six year comparison.** Because portions of the current study follow up on Archambault's work, it was possible to compare any changes that may have occurred over the past six years in particular areas of K-12 online teaching.

The greatest number of K-12 online teachers surveyed responded by classifying the school where they taught as a state-sanctioned and state-funded virtual school. The vast majority of these respondents (87%) teach all of their classes online. These findings closely track the earlier figures reported by Archambault in 2008. State-level online schools, have not been experiencing growth in recent years due to limited funding (Lynde, 2012); however, this slowing in growth may be masked by the fact that 31% of the respondents reported teaching in Florida, home to the largest state-sanctioned online school, Florida Virtual School.

In both the current and the 2008 studies, the asynchronous online format was the most common; however, the current study detected a marginal increase in the number of

teachers that do not have specific times at which their students must be online to receive instruction.

**Teaching field.** Another shift in teaching characteristics is the main teaching field of those who teach courses online. Courses on language arts/reading were reported in 2008 to be the most common content areas for K-12 online courses; with science, social studies and mathematics not far behind. The present study also found science, social studies and mathematics to be the subject matter areas most frequently taught online, with each area accounting for about 19% of all courses. Online classes in language arts/reading dropped from 17% in the 2008 study to 11.8% in the present study. This decrease may be due in part to a recent increased emphasis on the STEM courses (science, technology, engineering and mathematics). Further examination of the data shows that the proportion of STEM courses offered online has increased substantially from 29% of all STEM courses in Archambault's 2008 study to 42% in the present 2014 study. While an increased political and administrative focus on STEM courses may partially explain this growth, it may also be that the subject matter of STEM courses is inherently more adapted to online teaching formats. Another possibility for this increase might come from the fact that those who teach STEM courses are themselves more comfortable in and adapted to the online teaching environment.

**Authorship.** Teachers in both the present and the 2008 studies were asked to classify the primary author of the content used in their online classes. Although the top three responses were reported in a different order, respondents in both surveyed groups identified the following as the authors of the online content used in their classes: (a) online content providers, such as Apex Learning, K12 Curriculum or Virtual High

School; (b) curriculum specialists within their institutions; and, (c) the online teachers themselves. Of those online teachers responding in the current study, 76% reported using materials created by someone else and 24% were themselves involved in the preparation of the materials used. Sixty-two percent of the teachers responding to the 2008 study relied on materials created by someone other than themselves, while 38% of these same teachers created their own materials. Many of the teachers participating in the present study mentioned the importance of individualizing the learning for their online students. This may suggest elements of teacher training that focus on how to select, modify, supplement and use course materials that have been authored by someone other than the teacher assigned to the particular online course.

**Decision to teach online**. The dominant motivation or influence leading to the respondents' decision to teach online can be characterized in terms of "economics" and "innovation." The first category has to do with changing economics and the effect of change on the workplace. Online teachers reported a scarcity of classroom jobs, the need to supplement income, flexibility to teach both face-to-face and online, retirement income, mobility to work anywhere and the ability to work from home while saving on gas and daycare.

The second category of reasons why respondents become online teachers suggests a changing paradigm in K-12 education. These teachers have expressed a love of both technology and teaching; they appreciate and believe in this new process for transferring knowledge, they value the efficiencies and leverage provided by technology and many prefer to focus on teaching rather than student discipline and administrative duties. These online teachers enjoy the benefits that online learning offers students and have either

observed or directly experienced being an online student. A new factor that has enabled some to undertake online teaching is an increasing number of pre-service teachers who participate in a completely online student teaching internship. Having this and similar opportunities to experience the online environment has motivated many of the responding teachers to become interested in online teaching and to seek employment in this area.

**Effective attributes.** Based on the responses provided by the surveyed K-12 online teachers, the attributes of an effective K-12 online teacher, can be divided into two overlapping categories. The first group of attributes involves a set of communication skills that are different from those required in face-to-face teaching. Clearly, strong communication skills are equally important for both face-to-face teachers and those teaching online. However, communicating at a distance is critically different; this is because neither the student nor the teacher has access to the rich non-verbal and feedback elements of human communication that have evolved over thousands of years. In this context, respondents observed the need for online teachers to have very strong skills in communicating through intervening technologies such as email, telephone, text and video chat. The Southern Regional Education Board (SREB) state in their Standards for Quality Online Teaching that the ability to convey information effectively through written communications in the absence of "words and body language that traditional classroom teachers use" is an attribute all online teachers must possess (SREB, 2006). Such communication skills and techniques are clearly candidates for incorporation into any training program for online teachers.

Various forms of organizational skills, different from those needed to teach face-to-face, defined the second category of attributes associated with effective online

teaching. Traditional classroom teaching involves a daily routine with well defined class periods of known duration and students occupying assigned seats and visible to the teacher. In general, online teaching has none of this structure. Instead, the teacher must have organizational techniques that will assure that students, their engagement, their work, their progress and their expectations are consistently monitored with corrective or reinforcing feedback where required. Online teachers must also have very strong time management skills and the ability to multi-task, especially in relation to classes that are offered on an asynchronous basis. One respondent noted that an online teacher must have a "tolerance for a 24/7 on-call type of work schedule." This "on call" teaching format is significantly different than the six or seven hour day typically spent in the presence of students in a traditional classroom environment. Having strong time-management skills as an online teacher is described as "extremely important" by the SREB Educational Technology Cooperative (SREB, 2006). Training in these student and time management techniques would be a logical addition to any program for the preparation of online teachers.

**Preparation of K-12 Online Teachers**

**Overview.** Findings from the current study support the conclusions reached in prior studies; specifically (a) there are very few pre-service opportunities for training in the techniques for effective teaching K-12 students online (Kennedy & Archambault, 2012b); and, (b) most training of online teachers occurs on the job only after a teacher has been hired (Barbour, 2012b). Further, some 14% of current K-12 online teachers who participated in this study state that they received no training at all.

**Pre-service training.** Seventy-five percent of all teacher education programs offer various classes online (AACTE, 2013), but very few offer courses on how to teach online at the K-12 levels. Of those online teachers who participated in the present study, only 16% were offered such training during their pre-service teacher education program. Of those who did receive coursework pertaining to online teaching, the majority of training involved reading assignments, course discussions or writing assignments. The extent of this coursework varied greatly. One teacher in the present study remarked that "My exposure to online learning was one paragraph in one book that I read for one class."

Although only 1.3% of teacher education programs offer online field placement opportunities (Kennedy & Archambault, 2012b), 3.7% of the teachers in the current study completed their student teaching online. This higher number may be due to the fact that 24% of the responding teachers attended a university based in Florida, which offer several partnerships with the largest online school in the country, Florida Virtual School. Many of the teachers surveyed described their virtual school field placement as a very valuable part of their preparation to teach online. One teacher realized after interning that teaching online was "a good fit for my teaching style." Another respondent who experienced an online student teaching experience explained:

> I think that the most valuable element [of training] is working through the process of teaching something to a person when you will not have the ability to dialogue with them as much with regards to their understanding. Teachers learn more about the art of teaching, when they are student teaching, then at any other time in the initial formative process. I think the same is true for online teaching.

Similarly, Kennedy and Archambault (2012b) found that acknowledging this expanding field and the desire to prepare pre-service teachers in a variety of school settings were important pieces for teacher education programs to consider.

In the current study, 13% of the teachers reported being first-year teachers, meaning they are teaching online immediately after graduation and without any face-to-face experience. This proportion of new online teachers without prior experience has not changed since the nationwide survey conducted four years ago by Dawley et al. (2010), who found 12% of recently hired online teachers had no prior classroom experience. It is highly probable that teachers who take online jobs following graduation are not receiving any appropriate training in their teacher education program and have not had any prior experience as a face-to-face teacher before taking on the more challenging task of teaching K-12 students at a distance. Although there are differences of opinion on whether or not an online teacher should be required to first teach face-to-face classes, most agree that there are different skills required for online versus face-to-face teaching.

**In-service training.** Because there is very little pre-service training available for future online teachers, the majority of such training, occurs on the job. This reality has been confirmed by the present and prior studies. Eighty-two percent of the teachers surveyed reported receiving appropriate training once they were hired by an online school. These findings are similar to four years ago, when Dawley et al. (2010) found that 87% of the teachers participating in the study received training that was specific to teaching online to K-12 students from an employer. Two of the teachers in the current study reported that they did not receive any formal training on how to teach online during their employment but did receive such training as part of their pre-service education.

Nearly fourteen percent (13.8%) of the online teachers participating in the present study received no training of any kind on how to teach online.

For those online teachers working at virtual schools, there is a wide range of training offered in terms of the type and duration of the training. The length of training described by respondents ranged from a single, one day orientation to hundreds of hours of ongoing training. As to the type of training offered to the in-service teachers participating in this study, some teachers were offered brief, introductory workshops, while others were required to attend actual courses and even assigned mentors. The teachers offered mentorship opportunities reported an average of 22 hours spent with their mentor. In addition to mentoring programs, some new teachers were paired with a colleague teaching online in the same content area. Many other respondents were offered no training at all and prepared themselves "as they went along." Based on the present survey of actual online teachers, there is no standard for how K-12 teachers are prepared to teach in an online environment. The information and data collected in the present study shows that the preparation offered to K-12 online teachers, while extensive in a few institutions, is virtually unavailable to most new teachers. There is an urgent need for universal standards in the education and training of K-12 online teachers.

A number of virtual schools and universities have discovered the benefits of working in partnership with one another to provide online teachers with an integrated program of academic and practical learning and development. Online teachers in these partnership arrangements are trained on how to effectively teach online *before* taking on the responsibility of an online class. Universities benefit by offering pre-service teachers field experiences that are both face-to-face and online. Virtual schools benefit by having

a ready pool of trained teachers to hire for online classrooms. Mentors can be trained and then paired with a new online teacher to offer them informed support and shared experience.

Unfortunately, 31% of the online teachers participating in the present study reported that they were self-taught when it came to teaching online. Without any support or initial preparation, K-12 online teachers must learn by the maximally inefficient and fraught process of trial and error. Like so many other contemporary problems, the most cost-effective solution can be found in education programs and in-service training that meaningfully prepares teachers to address the unique challenges of conveying knowledge to students who are separated from the teacher and one another in both space and time.

As a starting point, it is necessary to first define the skills needed to be effective online teacher and how these skills may differ from those required in face-to-face teaching. Based on the survey underlying the present study, skills related to the use of technology were cited by 37% of the teachers as being the most important training element for new online teachers. However, this fundamental aspect of online teaching is very rarely included in pre-service training and is introduced, if at all, only after the teacher is hired or assigned responsibility for an online class. The K-12 online teachers in Archambault's 2008 study also reported having little confidence in their own preparation in dealing with technology issues. Further, because so many of online teachers are creating, modifying, or individualizing content for their online students, it may also be necessary to include some instructional design techniques when preparing online teachers.

It is clear from the present and past studies that the proper education and training of online K-12 teachers must be based on a definition of required skills that are research-based and empirically-tested. One environment for defining these standards may take the form of partnerships between university teacher preparation programs and virtual schools where techniques are developed at an academic level and confirmed, modified or rejected through actual application and testing.

**Implications for Teacher Training**

With the continual growth of K-12 online learning, teachers must be properly trained in both face-to-face and online teaching methods and practices. It has been shown that online K-12 teachers already have a higher level of educational attainment than the general population of K-12 teachers, particularly at and beyond the Masters level. As more online-relevant training becomes available, these highly motivated teachers will take advantage of the training. More and more teacher education programs are beginning to realize the need to include the methods and techniques required to effectively teach online. Established K-12 online teaching standards, such as iNACOL's *National Standards for Quality Online Teaching*, the National Education Association's *Guide to Teaching Online Courses,* and the SREB's *Essential Principles for High-quality Online Teaching*, often form the base for this type of training (Kennedy & Archambault, 2012a). However, there is essentially no empirical research into what skills are needed to be an effective K-12 online teacher (Barbour, 2012b). Once a set of empirically-tested skills are developed, new training can be created to prepare future educators for all environments. The training offered from both university-based teacher preparation programs and virtual schools themselves must become more coherent and consistent. The development of

universal, research-based standards for training will naturally follow after the required skills are defined, tested and proven to be effective. Once research-based standards are established, they will serve as a template for successful partnerships between universities and virtual schools where skill sets needed for teaching online at the K-12 level are taught and practiced.

**Limitations of the Study**

Although a non-random, purposeful sample was used to reach the appropriate audience and gather information-rich cases, there are still some limitations and validity issues with this approach and using a survey methodology. The participants in this study were currently teaching online at the K-12 levels, and they consisted of iNACOL members, Florida Virtual School teachers, and other online teachers across the United States recruited through various contacts and referrals. The iNACOL membership includes approximately 3,500 members who are teachers, staff members or administrators in online schools. However, there may be some selection bias towards members who follow the iNACOL general forum, where the invitation to participate in the present study was posted. As a matter of policy, Florida Virtual School teachers are only allowed to participate in surveys approved by the FLVS research committee. The invitation to participate in the present study was approved and emailed internally to all FLVS teachers, who had an equal opportunity to participate in the survey. Additionally, there may have been bias present with the responding teachers and institutions recruited through contacts and referrals. Regardless of these possible biases, a very wide net was cast in an attempt to reach all virtual K-12 teachers. However, the inability to invite every person teaching

K-12 online classes across the United States makes it impossible to generalize results from this study to the entire K-12 online teaching population.

Even though participants were allowed to express themselves in their survey responses without interference from the researcher, self-report bias could have been introduced with the manner in which data were collected. Efforts were made to eliminate any leading questions from the survey and to clarify any ambiguity. However, after all of the results were in, it became apparent that the wording of some survey questions could have been more precise. For instance, Question 16 asked the teachers to give the approximate number of hours of formal training received during employment, and Question 17 asked teachers to break their formal training hours between orientation, workshops, development, project, coursework, field experience and/or mentoring. Many teachers essentially responded that it was too hard to estimate or that their training was ongoing. Asking for approximate hours for each activity individually with the option to select "ongoing," as a separate category of training would improve this question. Question 22 asked teachers to classify their main teaching assignment selecting from six different options. Because the purpose of this question was to determine how many online teachers work only part-time, having three alternative selections: full-time, part-time, and other would be more precise. Finally, an additional question that occurred after survey results were in related to the number of hours the participant spends each week in actually teaching online, so this result could be compared to the time spent in the classroom by traditional teachers.

## Areas for Future Research

Further research involving K-12 online teachers might productively focus on two main areas, namely (a) empirically defining skills and techniques for effective online teaching, and (b) developing educational and training standards for online teacher education across pre-service and in-service training. This research should focus on identification of specific difference between the skills necessary to teach online as compared to skills required for traditional face-to-face teaching. These studies might include methods for (a) creating, modifying and individualizing highly effective lessons for online delivery, (b) communicating with and managing students effectively at a distance and (b) defining best practices for creating structure and efficient organization of an online classroom with large numbers of students attending asynchronously.

Standardization studies should seek to discover and define what constitutes effective online teaching and, correspondingly, define the optimal program for the preparation of effective online K-12 teachers. Because online education is expanding beyond the boundaries of any particular school or school district and is evolving into a national network of learning alternatives that range from single lessons or modules to complete degree programs, consideration should be given to the development of an empirically proven core program for training online teachers.

## Conclusion

The growing field of K-12 online education will increasingly impose new demands on teachers in terms of their ability to effectively communicate with remote students, comfortably use various forms of technology, and engage, monitor and motivate students at a distance. Understanding the attributes of those teaching in this environment

and how they have been prepared so far is vital to designing appropriate training for this new population of teachers. This study provided a current picture of the demographic characteristics of those teaching K-12 online and compared these characteristics with the attributes of current traditional face-to-face teachers and online teachers who participated in a baseline study some six years earlier. Information and data were collected from a survey of 325 teachers currently teaching online at the K-12 levels across the United States with the objective of answering basic research questions pertaining to the demographic characteristics and preparation levels of K-12 online teachers.

Results from this study show that the K-12 online teachers responding to the web-based survey had similar demographic characteristics to face-to-face teachers when it came to gender, age and ethnicity/race. By contrast to traditional teachers, the online teachers generally had higher levels of educational attainment (especially at or beyond the Masters level), had more years of teaching experience and were significantly more likely to teach on a part-time basis. The survey respondents reflect many common characteristics: they value learning and education, are self-motivated and enjoy the challenge of more productively teaching with the aid of technology. The one-on-one connection with students that the online environment affords was also very appealing to the survey respondents, who enjoy being free of behavior issues and various administrative duties involved with face-to-face teaching.

The results show a remarkable divergence in the levels of preparation available to the responding online teachers. As with previous studies, the present study showed very few opportunities to formally learn the theory and practice involved in effective online teaching. A limited number of university-based teacher preparation programs include this

aspect of teacher training, and even fewer offer field placement opportunities where future teachers can learn and practice how to effectively teach online. The limited training that exists today is mostly on the job training. In a surprising percentage of the cases, teachers have received no related education or training of any kind and have simply learned by doing.

This study shows that those currently involved in teaching K-12 classes online are a well educated, highly motivated, mature and experienced group of teachers who enjoy the process of learning and teaching and who welcome the challenge of using technology for this purpose. The admirable demographics of the current cadre of self-motivated online teachers are similar to the demographics of "first adopters" in many new fields of endeavor. They are confidently taking on the largely unknown and still undefined challenge of online teaching with limited or no formal preparation or training. While these first adopters are serving the current need for online teachers, educational, clinical and in-service programs must be developed to provide an ongoing supply of competent and effective online teachers. Based on the information in this study, further work is required to first define and empirically validate specific methods and techniques that produce proven learning outcomes in students attending school online at the K-12 levels. When these methods are developed and refined in practice, the development of formal educational and training programs in which teachers can learn how to effectively transfer knowledge to students at a distance will be possible.

# REFERENCES


Aaron, M. (2012). *KIPP Empower Academy*. Retrieved from http://www.christenseninstitute.org/kipp-empower-academy-2/

Andrejko, L. (2012). *Quakertown Community School District.* Retrieved from http://www.christenseninstitute.org/quakertown-community-school-district/

Archambault, L. M. (2008). *The characteristics, knowledge, and preparation levels of K-12 online distance educators in the United States* (Doctoral dissertation). University of Nevada, Las Vegas, Nevada.

Archambault, L., & Crippen. K. (2009). K-12 distance educators at work: Who's teaching online across the United States. *Journal of Research on Technology in Education,* 41(4), 363-391.

Archambault, L. (2010). Identifying and addressing teaching challenges in K-12 online environments. *Distance Learning (Greenwich, Conn.), 7*(2), 13.

Archambault, L. (2011). The practitioner's perspective on teacher education: preparing for the K-12 online classroom. *Journal of Technology and Teacher Education,* 19(1), 73-91.

Arizona Department of Education, Certification Unit. (2013). *Requirements for elementary certificates.* Retrieved from website: http://www.azed.gov/educator-certification/files/2011/09/requirements-for-elementary-certificate.pdf

Arizona State University. Mary Lou Fulton Teachers College. (2013). *ASU graduate certificate online teaching for grades K-12*. Retrieved from website: http://education.asu.edu/uploads/academic/Online_Teaching_for_Grades_K-12_-_Final_Web.pdf

Barbour, M. K., & Unger, K. (2009). Challenging teachers' preconceptions, misconceptions, and concerns of virtual schooling. In I. Gibson et al. (Eds.), *Proceedings of the annual conference of the Society for Information Technology and Teacher Education (785-790).* Norfolk, VA: Association for the Advancement of Computing in Education.

Barbour, M. K. (2012a). Models and resources for online teacher preparation and mentoring. In K. Kennedy & L. Archambault (Eds.), *Lessons Learned in Teacher Mentoring: Supporting Educators in K-12 Online Learning Environments* (pp. 83-102). Vienna, VA: iNACOL.

Barbour, M. K. (2012b). Training teachers for a virtual school system: A call to action. In D. Polly, C. Mims, & K. Persichitte (Eds.), *Developing Technology-Rich Teacher*

*Education Programs: Key Issues* (pp. 499-517). Hershey, PA: Information Science Reference.

Barbour, M. K., Siko, J., Gross, E., & Waddell, K. (2012). Virtually unprepared: Examining the preparation of K-12 online teachers. In R. Hartshorne, T. Heafner, & T. Petty (Eds.), *Teacher Education Programs and Online Learning Tools: Innovations in Teacher Preparation* (pp. 60-81). Hershey, PA: Information Science Reference.

Blair, J., & Czaja, R. (2013). *Designing surveys: a guide to decisions and procedures* (2nd ed.). Thousand Oaks, CA: Sage Publications, Inc.

Borg, W. R., & Gall, M. D. (1989). *Educational research: An introduction* (5th ed.). White Plains, NY: Longman.

Bull, G. (2010). The always-connected generation. *Learning & Leading with Technology,* 38(3), 28-29.

Charania, A. (2010). *Preparing future teachers for virtual schooling: Assessing their preconceptions and competence* (Doctoral dissertation). Iowa State University, Ames, Iowa.

Christensen, C.M., Horn, M.B., and Staker, H. (2013). Is K-12 blended learning distruptive? An introduction of the theory of hybrids (White paper). San Mateo, CA: Clayton Christensen Institute.

Clark, T. (2001). *Virtual schools: Trends and issues. A study of virtual schools in the United States.* San Francisco, CA: Western Regional Educational Laboratories.

Clark, T., & Berge, Z. (2003). Virtual schools and eLearning: Planning for success. *Proceedings of the Annual Conference on Distance Teaching and Learning.* Retrieved on June 4, 2012 from http://www.uwex.edu/disted/conference/Resource_library/proceedings/03_71.pdf.

Clayton Christensen Institute (2012a). *Albuquerque Public Schools*. Retrieved from http://www.christenseninstitute.org/albuquerque-public-schools-2/

Clayton Christensen Institute (2012b). *Carpe Diem Collegiate*. Retrieved from http://www.christenseninstitute.org/carpe-diem-high-school-and-middle-school/

Clayton Christensen Institute (2012c). *Flex Public Schools*. Retrieved from http://www.christenseninstitute.org/flex-public-schools-2/

Clayton Christensen Institute (2012d). *Rocketship Education*. Retrieved from http://www.christenseninstitute.org/rocketship-education/

Clayton Christensen Institute (2012e). *Stillwater Area Public Schools*. Retrieved from http://www.christenseninstitute.org/stillwater-area-public-schools/

Colorado Springs School District 11 (2011). *About Us*. Retrieved from http://achieve.d11.org/pages/aboutourschool.aspx

Compton, L. (2009). *Preparing pre-service teachers for online teaching* (Doctoral dissertation). Iowa State University, Ames, Iowa.

Compton, L., Davis, N., & Mackey, J. (2009). Field experience in virtual schools – to be there virtually. *Journal of Technology and Teacher Education* 17(4), 459-477.

Compton, L., Davis, N., & Correia, A. (2010). Pre-service teachers' preconceptions, misconceptions, and concerns about virtual schooling. *Distance Education*, 31(1), 37-54.

Cozart, J. (2012). Just-in-Time Training: How Georgia Virtual School Scaffolds Mentoring Programs to Meet a Variety of Teacher Needs. In K. Kennedy & L. Archambault (Eds.), *Lessons Learned in Teacher Mentoring: Supporting Educators in K-12 Online Learning Environments* (pp. 51-59). Vienna, VA: iNACOL.

Creswell, J. W. (2013). *Research design: qualitative, quantitative, and mixed methods approaches* (4th ed.). Thousand Oaks, CA: Sage Publications.

Creswell, J.W., Plano Clark, V.L., Gutmann, M.L., & Hanson, W.E. (2003). Advanced mixed methods research designs. In A. Tashakkori & C. Teddlie (eds.), *Handbook of mixed methods in social and behavioral research*. Thousand Oaks, CA: Sage.

Davis, N., Roblyer, M.D., Charania, A., Ferdig, R., Harms, C., Compton, L., & Cho, M. (2007). Illustrating the "virtual" in virtual schooling: Challenges and strategies for creating real tools to prepare virtual teachers. *Internet and Higher Education*, 10(2007), 27-39.

Dawley, L., Rice, K., & Hinks, G. (2010). *Going virtual 2010! The status of professional development and unique needs of K-12 online teachers.* Retrieved from http://edtech.boisestate.edu/goingvirtual/goingvirtual3.pdf

Dillman, D. A., Smyth, J. D., & Christian, L. M. (2009). *Internet, mail, and mixed-mode surveys: The tailored design method*. Hoboken, NJ: Wiley & Sons.

Dillon, E., & Tucker, B. (2011). Lessons for online learning. *Education Next*, 11(2), 50-57.

Easton, S. (2003). Clarifying the instructor's role in online distance learning. *Communication Education*, 52(2), 87-105.

eSchool Student Guide (2013). Retrieved from http://eschool.dvusd.org/Documents/eSchoolStudentGuide13-14.pdf

Gall, M. D., Gall, J. P., & Borg, W. R. (2002). *Educational research: An introduction* (7th ed.). Needham Heights, Massachusetts: Allyn & Bacon.

Georgia State University (2013). *Online teaching endorsement*. Retrieved from http://msit.gsu.edu/4878.html

Glick, D. (2011). *The demographics of online students and teachers in the United States.* Retrieved from http://gsehd.gwu.edu/documents/users/juliestella/Online_Demographics_Glick_2011.pdf

Goldring, R., Gray, L., & Bitterman, A. (2013*). Characteristics of public and private elementary and secondary school teachers in the United States: Results from the 2011–12 schools and staffing survey.* U.S. Department of Education. Washington, DC: National Center for Education Statistics.

International Association for K-12 Online Learning (iNACOL) (2011). *National standards for quality online teaching*. Vienna, VA: International Association for K-12 Online Learning.

International Association for K-12 Online Learning (iNACOL) (2011). *The online learning definitions project.* Vienna, VA: International Association for K-12 Online Learning.

International Association for K-12 Online Learning (iNACOL) (2012). *A Guide to Programs, Services and Membership* [Brochure]. Vienna, VA: International Association for K-12 Online Learning.

Kennedy, K. M. (2010). *The essence of the virtual school practicum: A phenomenological study of pre-service teachers' experiences in a virtual school* (Doctoral dissertation). University of Florida, Gainesville, FL.

Kennedy, K., & Archambault, L.M. (2012a). Design and development of field experiences in K-12 online learning environments. *Journal of Applied Instructional Design, 2*(1), 35-49.

Kennedy, K., & Archambault, L.M. (2012b). Offering pre-service teachers field experiences in K-12 online learning: A national survey of teacher education programs. *Journal of Teacher Education, 63*(3), 185-200.

Kennedy, K., Cavanaugh, C., & Dawson, K. (2013). Preservice teachers' experience in a virtual school. *American Journal of Distance Education, 27*(1), 56-67.

Lee, J. M., Edwards, K., Menson, R., & Rawls, A. (2011). The College Completion Agenda 2011 Progress Report. College Board Advocacy and Policy Center. http://completionagenda.collegeboard.org/sites/default/files/reports_pdf/Progress_Report_2011.pdf

Lynde, H. (2012). *Increasing online learning options for K-12 students: The role of school districts.* Atlanta, GA: Southern Regional Education Board (SREB) Educational Technology Cooperative.

Means, B., Toyama, Y., Murphy, R., Bakia, M., & Jones, K. (2010). *Evaluation of evidence-based practices in online learning: A meta-analysis and review of online learning studies.* Washington, DC: Department of Education.

Miller, T., & Ribble, M. (2010). Moving Beyond Bricks and Mortar: Changing the Conversation on Online Education. *Educational Considerations, 37*(2), 3-6.

National Center for Education Statistics. (2008a). *Defining Race and Ethnicity Data.* Retrieved from http://nces.ed.gov/statprog/2002/std1_5.asp

National Center for Education Statistics. (2008b). *Fast Facts: Teacher Trends.* Retrieved from http://nces.ed.gov/fastfacts/display.asp?id=28

North American Council for Online Learning. (2013). *Fast facts about online learning.* Retrieved from http://www.inacol.org/cms/wp-content/uploads/2013/04/iNACOL_FastFacts_Feb2013.pdf

National Council on Teacher Quality. (2013). *Teacher prep review report*. Washington, D.C.: Greenberg, J., McKee, A. & Walsh, K.

Patrick, S., & Dawley, L. (2009). *Redefining teacher education: K-12 online-blended learning and virtual schools.* Brief prepared for the Summit on Redefining Teacher Education for Digital Age Learners, Austin, TX: The University of Texas.

Patton, M. Q. (2002). *Qualitative Research and Evaluation Methods* (3rd ed.). Thousand Oaks, CA: Sage Publications.

Picciano, A. G., & Seaman, J. (2009). *K-12 online learning: A 2008 follow-up of the survey of U.S. school district administrators.* Needham, MA: Alfred P. Sloan Foundation.

Queen, B., Lewis, L., & Coopersmith, J. (2011). *Distance Education Courses for Public Elementary and Secondary School Students: 2009-2010 (NCES 2012-009)*. U.S. Department of Education, National Center for Education Statistics.

Rice, K. L. (2006). A comprehensive look at distance education in the K-12 context. *Journal of Research on Technology in Education*, 38(4), 425-448.

Searson, M., Jones, M., & Wold, K. (2011). Reimagining schools: The potential of virtual education. *British Journal of Educational Technology*, 42(3), 363-371.

Southern Regional Education Board (SREB) (2006). *Standards for Quality Online Teaching*. Retrieved from http://publications.sreb.org/2006/06T02_Standards_Online_Teaching.pdf

Staker, H., & Horn, M. B. (2012). Classifying K-12 blended learning (White paper). San Mateo, CA: Clayton Christensen Institute.

Strauss, A., & Corbin, J. (1998). Basics of qualitative research: Techniques and procedures for developing grounded theory (2nd ed.). Thousand Oaks, CA: Sage.

Sudman, Seymour (1976). *Applied Sampling*. New York: Academic Press.

United States Census Bureau (2013). *Educational attainment in the United States: 2013-detailed tables*. Retrieved from https://www.census.gov/hhes/socdemo/education/data/cps/2013/tables.html

United States Department of Education (2004). *New No Child Left Behind Flexibility: Highly Qualified Teachers.* Retrieved from http://www2.ed.gov/nclb/methods/teachers/hqtflexibility.pdf

United States Department of the Interior (2003). *Standards for Maintaining, Collecting, and Presenting Federal Data on Race and Ethnicity*. Retrieved from http://www.doi.gov/pmb/eeo/directives/race-data.cfm

University of Nebraska High School (2013). *Why UNHS*. Retrieved from http://highschool.nebraska.edu/About-UNHS/Why-UNHS.aspx

University of Wisconsin-Stout (2012). *E-learning and online teaching graduate certificate*. Retrieved from http://www.uwstout.edu/soe/profdev/elearningcertificate.cfm

Valdosta State University (2013). *Online teaching endorsement*. Retrieved from http://www.valdosta.edu/colleges/education/deans-office/online-programs/online-teaching-endorsement.php

Van Beek, M. (2011). Expanding virtual learning opportunities in Michigan [Electronic version]. *Michigan Science*, 15, 11-13.

Vander Ploeg, G. (2012). *K-12 online teacher beliefs: Relationships among intelligence, confidence, teacher-student interactions, and student outcomes* (Doctoral dissertation). Pepperdine University, Malibu, CA.

Vanourek, G. (2006). *A Primer on Virtual Charter Schools: Mapping the Electronic Frontier*. Issue Brief for National Association of Charter School Authorizers, August 2006.

VHS Collaborative (2012). *Annual report.* Retrieved from website: http://thevhscollaborative.org/sites/default/files/public/VHS_Annual%20Report_FINAL_4_26.pdf

Wagner, J., Condidis, C., Mitchell, M., & Miller, B. (2012). Mentoring the Florida Virtual School Way. In K. Kennedy & L. Archambault (Eds.), *Lessons Learned in Teacher Mentoring: Supporting Educators in K-12 Online Learning Environments* (pp. 39-49). Vienna, VA: iNACOL.

Watson, J., Gemin, B., & Coffey, M. (2010). *A parent's guide to choosing the right online program.* Promising Practices in Online Learning. International Association for K-12 Online Learning. 1934 Old Gallows Road Suite 350, Vienna, VA 22182.

Watson, J., Murin, A., Vashaw, L., Gemin, B., & Rapp, C. (2011). *Keeping pace with K-12 online learning: An annual review of policy and practice.* Evergreen CO: Evergreen Education group.

Watson, J., Murin, A., Vashaw, L., Gemin, B., & Rapp, C. (2012). *Keeping Pace with K-12 Online & Blended Learning: An Annual Review of Policy and Practice, 2012*. Evergreen Education Group.

Wisconsin eSchool Network (2013). *Fast facts.* Retrieved from website: http://www.wisconsineschool.com/network/about

Zeichner, K. (2010). Rethinking the connections between campus courses and field experiences in college- and university-based teacher education. *Journal of Teacher Education*, 61(1-2), 89-99.

# APPENDIX A

# SURVEY

DEMOGRAPHICS AND PREPARATION OF K-12 ONLINE TEACHERS

**Instructions**

The following survey seeks information regarding the background of those K12 teachers who teach online and the manner in which these teachers have been prepared to teach online. Please select the response(s) that best describes your background and current teaching situation.

**Note:** the following version of this survey is in printed format. The web-based version of the survey will include four questions with skip logic, indicated with an asterisk (*).

**Personal Demographics**

1. What is your gender?
   - ☐ Female
   - ☐ Male

2. What is your ethnicity?
   - ☐ Hispanic or Latino
   - ☐ Not Hispanic or Latino

3. What is your race? (Select one or more)
   - ☐ American Indian or Alaskan Native
   - ☐ Asian
   - ☐ Black or African American
   - ☐ Native Hawaiian or Other Pacific Islander
   - ☐ White

4. How old are you?
   Age: _____

**Educational Background and Experience**

5. Do you hold the following degrees or certificates? For each degree or certificate held, please list your major and minor fields of study.

   Bachelor's degree(s)? _____
   Master's degree(s)? _____
   Doctorate degree(s)? _____
   Other degree(s), certificate(s)
   or endorsement(s)? _____

6. Do you hold a teaching certificate?*
   - ☐ Yes (go to Q7)
   - ☐ No (go to Q15)

7. What year did you obtain your initial teaching certificate?
   Obtained in: _____ (year)

8. What state granted your initial teaching certificate?
   Certificate from: _____ (state)

**Your Pre-Service Training Related to Online Teaching at K-12 Levels**

9. What school or institution did you attend for your Teacher Education Program?
   _____

10. In what state is this school or institution located?
    School/institution located in: _____ (state)

11. Did your Teacher Education Program include any preparation for design and delivery of online content with K-12 students (e.g. assignments, discussions, field experience, etc.)?*
    - Yes (go to Q12)
    - No (go to Q15)

12. How was the content regarding K-12 online teaching included as a part of your pre-service coursework? (check all that apply)
    - Reading assignments
    - Course discussions
    - Writing assignments
    - Examples/demonstration
    - Direct experience/modeling
    - Other (please describe):
      _____
      _____

13. Did you participate in a K-12 online field placement as part of your pre-service program?*
    Yes (go to Q14)
    No (go to Q15)

14. Please describe the nature and extent of your participation in the field placement (e.g., overall duration, hours per day, location, specific activities and responsibilities, etc.):
    _____
    _____
    _____

**Your In-Service Training Related to Online Teaching at K12 Levels**

15. In the course of your employment as a K12 teacher, have you been provided with any form of formal training on how to teach online? (e.g. orientation, workshop, demonstration, coursework, field experience, etc.)*
    - □ Yes (go to Q16)
    - □ No (go to Q18)

16. Approximately how many hours of formal training on how to teach online did you receive in the course of your employment as a K12 teacher?
    _____

17. Approximately how many hours of your training involved:
    Orientation, workshops, development/project or coursework? _____
    Field experience/mentoring in online teaching? _____

**Past and Current Online Teaching Assignments**

18. Have you in the past taught at least one K12 class online?
    - □ Yes
    - □ No

19. Are you currently teaching at least one K12 class online?
    - □ Yes
    - □ No

20. In which state do you currently teach?
    I teach in: _____ (state)

21. How would you classify the school in which you currently teach online?
    - □ District (e.g., public school district, virtual school operated in conjunction with a local education agency, etc.)
    - □ State (i.e., state-sanctioned, state-funded virtual school)
    - □ Consortium (e.g., Virtual High School)
    - □ Postsecondary (i.e., University-based virtual school)
    - □ Private (e.g., for profit virtual school)
    - □ Other (please specify) _____

22. How do you classify your main assignment at the school where you currently teach online?
    - □ Full-time teacher
    - □ Part-time teacher

- Combined teacher (i.e., your assignment requires you to provide instruction at more than one school, but you work the most hours at this school)
- Substitute teacher (e.g., regular substitute, long-term substitute, etc.)
- Additional role (e.g., Administrator, curriculum specialist, library media specialist, instructional designer, support staff, etc.)
- Other (please specify) _____

23. Which of the following best describes the format of the classes you teach at your present school?
    - All of my classes are taught online.
    - About half of my classes are taught online.
    - Less than half of my classes are taught online.

24. In the classes you currently teach online, approximately what amount of instruction takes place online?
    - 80 – 100%
    - 30 – 79%
    - 1 – 29%

25. Which of the following describes the format of your online teaching?
    - There are no specific times at which my students are required to be online to receive instruction.
    - There are certain specific times when my students must be online to receive brief instruction or assessment.
    - My students must login at predetermined times to receive complete instruction.

26. What is your main teaching field at the school where you currently teach online?
    - Mathematics
    - Science
    - Language Arts/reading
    - Social Studies
    - Humanities (i.e. Art, Foreign Language, Music)
    - Physical Education/Health
    - Technology/Computers
    - Elementary classes (i.e. All core subjects)
    - Other (please specify) _____

27. List the specific courses you teach online:

_____

_____

_____

28. Considering the content of your class(es), who is the primary author?
    - Self
    - A fellow colleague (e.g., another teacher)
    - Curriculum specialist
    - Software company
    - Online content provider (e.g., Apex Learning, K12 Curriculum, Virtual High School, etc.)
    - Web resources
    - Textbook publishers
    - Other (please specify) _____

29. How many total classes do you teach online? If you teach 2 or more classes of the same subject (e.g., Chemistry) to different groups of students at this school, count them as separate classes (e.g., if you teach Chemistry to 2 classes of students and Physics to 2 classes of students, you would report 4 classes of different groups of students).
    - 1
    - 2
    - 3
    - 4
    - 5
    - 6
    - 7 or more

30. What is the number of students you teach online? Count each student only once.
    _____

31. How many years have you been employed as a teacher? (Include this year and years spent teaching full and part time and in public and private schools.)
    _____

32. How many years have you been employed as an online teacher (including this year)?
    _____

33. Which grade(s) do you currently teach at this school?
    - PreKindergarten
    - Kindergarten
    - 1
    - 2
    - 3
    - 4
    - 5
    - 6

- 7
- 8
- 9
- 10
- 11
- 12

34. Describe the career path that led you to teaching online. What were the dominant factors that influenced your decision to teach online? (Please provide as much detail as possible).

_____
_____
_____

35. What do you think are the most important attributes a K-12 online teacher must have to be highly effective?

_____
_____
_____

36. Describe how you were prepared or how you prepared yourself to teach online. What training or preparation did you find to be the most helpful to teaching in this environment?

_____
_____
_____

37. Based on your experience teaching online, what elements of training would be the most valuable in preparing new online teachers?

_____
_____
_____

# APPENDIX B

## FLVS RESEARCH APPROVAL LETTER

Florida VirtualSchool

December 20, 2013

Dear Ms. Larson,

I am pleased to inform you that your research study, "Demographics and Preparation Levels of K-12 Online Teachers," has been approved by the FLVS Research Committee.

Your approval date is 12/20/2013 and your research should be completed by 7/20/2015. If you need additional time, you must request a formal extension from the FLVS Research Committee.

Please note that your final manuscript must be submitted to FLVS and approved by the FLVS Research Committee *prior to* any kind of publication or presentation.

Sincerely,

Teresa King
Instructional Programs Manager
321-396-2339
TKing@flvs.net

# APPENDIX C

## INSTITUTIONAL REVIEW BOARD APPROVAL

ASU Knowledge Enterprise Development

Office of Research Integrity and Assurance

| | |
|---|---|
| **To:** | Leanna Archambault |
| **From:** | for Mark Roosa, Chair MM<br>Soc Beh IRB |
| **Date:** | 09/16/2013 |
| **Committee Action:** | **Exemption Granted** |
| **IRB Action Date:** | 09/16/2013 |
| **IRB Protocol #:** | 1309009630 |
| **Study Title:** | Demographics and Preparation of K-12 Online Teachers |

The above-referenced protocol is considered exempt after review by the Institutional Review Board pursuant to Federal regulations, 45 CFR Part 46.101(b)(2) .

This part of the federal regulations requires that the information be recorded by investigators in such a manner that subjects cannot be identified, directly or through identifiers linked to the subjects. It is necessary that the information obtained not be such that if disclosed outside the research, it could reasonably place the subjects at risk of criminal or civil liability, or be damaging to the subjects' financial standing, employability, or reputation.

You should retain a copy of this letter for your records.

# APPENDIX D

# CONSENT FORM

DEMOGRAPHICS AND PREPARATION OF K-12 ONLINE TEACHERS

**INTRODUCTION**

The purposes of this form are to provide you (as a prospective research study participant) information that may affect your decision as to whether or not to participate in this research and to record the consent of those who agree to be involved in the study.

**RESEARCHERS**

Dr. Leanna Archambault, Assistant Professor in the Mary Lou Fulton Teachers College at Arizona State University and Jean Larson, Educational Technology doctoral student, have invited your participation in a research study.

**STUDY PURPOSE**

The purpose of the research is to define the current status of who is teaching K-12 students online across the United States and how these teaches have been educated and trained to teach online.

**DESCRIPTION OF RESEARCH STUDY**

If you decide to participate, then you will join a study involving research of those teaching online to K-12 students across the United States. You will be asked to complete a web-based survey which will include demographic questions, questions concerning the nature of the online courses you teach, your educational background and training received to teach online. The survey uses skip logic to prevent the participant from being asked irrelevant questions. You will also be able to skip any questions in the survey.

If you agree to this consent form, your participation will last for approximately 15 minutes at a computer of your choice. You will be asked to answer no more than 37 questions on a web-based survey.

Approximately 300 subjects will be participating in this study nationally.

**RISKS**

There are no known risks from taking part in this study, but in any research, there is some possibility that you may be subject to risks that have not yet been identified.

**BENEFITS**

Although there may be no direct benefits to you, the possible benefits of your participation in the research are helping to establish an overall profile of those teaching in K-12 online environments. You may also have the opportunity to reflect on your practices and gain a deeper understanding of yourself as an online educator.

**CONFIDENTIALITY**

All information obtained in this study is strictly confidential. The results of this research study may be used in reports, presentations, and publications, but the researchers will not identify you. The survey does not require unique personal information to access it and is anonymous. Before data analysis, a random anonymous coding system will be applied. All data collected will be analyzed and reported in an aggregated form.

**WITHDRAWAL PRIVILEGE**

Participation in this study is completely voluntary. It is ok for you to say no. Even if you say yes now, you are free to say no later, and withdraw from the study at any time. If you choose to withdrawal from the study, your data will be electronically deleted and any paper-related printouts will be shredded.

**COSTS AND PAYMENTS**

There is no payment for your participation in the study.

**VOLUNTARY CONSENT**

Any questions you have concerning the research study or your participation in the study, before or after your consent, will be answered by Dr. Leanna Archambault, Leanna.Archambault@asu.edu, (602) 543-6338, or Jean Larson, Jean.Larson@asu.edu, (602) 625-1201.

If you have questions about your rights as a subject/participant in this research, or if you feel you have been placed at risk; you can contact the Chair of the Human Subjects Institutional Review Board, through the ASU Office of Research Integrity and Assurance, at 480-965 6788.

This form explains the nature, demands, benefits and any risk of the project. By consenting to this form you agree knowingly to assume any risks involved. Remember, your participation is voluntary. You may choose not to participate or to withdraw your consent and discontinue participation at any time without penalty or loss of benefit. In agreeing to this consent form, you are not waiving any legal claims, rights, or remedies. A copy of this consent form may be printed out for your records.

By clicking "Next" and completing the survey, you are giving consent to participate in this study.

**INVESTIGATOR'S STATEMENT**

"I certify that I have explained to the above individual the nature and purpose, the potential benefits and possible risks associated with participation in this research study, and have answered any questions that have been raised. These elements of Informed Consent conform to the Assurance given by Arizona State University to the Office for Human Research Protections to protect the rights of human subjects. I have offered the subject/participant a copy of this signed consent document."

Signature of Investigator Leanna Archambault Date 9-9-13

# APPENDIX E

# PRE-NOTIFICATION POSTING

My name is Jean Larson, and I am an Educational Technology doctoral student at Arizona State University. I am conducting research about K-12 online teachers in the United States for my dissertation study. Because very little is known regarding this population, this research seeks to provide a clearer picture of the background and training of those teaching online.

As a member of iNACOL, you are identified as being affiliated with a virtual school in the United States. In the next few days, I will be posting a link to a web-based survey on this General Forum. If you teach online, your response to this short survey would be greatly appreciated.

I am providing this information in advance so you will recognize the request in a few days when it is posted on the General Forum. Results from this important study will help to provide meaningful insight into the characteristics of K-12 online teachers and how they are prepared to teach online.

This study can only be successful with the generous help of people like you. Thank you in advance for your time and consideration.

Jean Larson
PhD Candidate, Educational Technology
Mary Lou Fulton Teachers College
Arizona State University
Jean.Larson@asu.edu

# APPENDIX F

## SURVEY INVITATION WITH LINK POSTING

I would like to ask for your participation in a survey on K-12 online teachers in the United States that I am conducting for my dissertation.

As mentioned in my previous post, members of iNACOL are identified as being affiliated with U.S. virtual schools. If you are a K-12 online teacher (or can distribute this information to those that teach online) your participation would be most appreciated.

Your responses to this survey are very important. Information gathered will help capture an accurate representation of who is currently teaching online to K-12 students and will provide valuable information for both university teacher education programs and virtual schools.

This is a brief survey and should take you no more than 15 minutes to complete. Please click on the link below to begin the survey.

Survey Link: http://www.surveymonkey.com/s/onlineteachers

Your participation in this survey is completely voluntary and all of your responses will be kept strictly confidential. Your name will be removed from the list once you have completed the survey. Any reports of this data will not associate your responses with any personally identifiable information. Should you have any questions or concerns, please do not hesitate to contact me at Jean.Larson@asu.edu.

Thank you in advance for your help. Your responses are important in getting a true depiction of K-12 online teachers and how they were prepared to teach online.

Sincerely,

Jean Larson
PhD Candidate, Educational Technology
Mary Lou Fulton Teachers College
Arizona State University
Jean.Larson@asu.edu

# APPENDIX G

## FOLLOW-UP POSTING

Last week I posted to this forum asking you to respond to a short survey about your experience and training as a K-12 online teacher. Your participation in this study is important and will help in describing the current population of K-12 online teachers and how they were trained for this environment.

This brief survey should only take you 15 minutes to complete. If you have already completed the survey, I appreciate your participation. If you have not yet responded to the survey, I encourage you to complete the survey today.

Please click on the link below to access the survey.

Survey Link: http://www.surveymonkey.com/s/onlineteachers

I appreciate your time and consideration in completing the survey. Information gathered from online teachers like you is crucial to improve ways in preparing future distance educators.

Many thanks,

Jean Larson
PhD Candidate, Educational Technology
Mary Lou Fulton Teachers College
Arizona State University
Jean.Larson@asu.edu

# APPENDIX H

## FINAL POSTING

Over the past month, you may have seen several posts to this Forum regarding a survey being conducted as a part of my doctoral research at Arizona State University. This important study will examine the background and training of those teaching K-12 students online.

If you have already completed the survey, I appreciate your participation.

The study is drawing to a close. If you have not yet responded to the survey, this is your final opportunity to participate. I encourage you to complete the survey today.

This is a brief survey and should take you no more than 15 minutes to complete. Please click on the link below to access the survey.

Survey Link: http://www.surveymonkey.com/s/onlineteachers

Information gathered from online teachers like you is crucial to obtain accurate results and improve ways of preparing future K-12 online teachers.

I appreciate your time and consideration in completing the survey. Hope to hear from you soon!

Many thanks,

Jean Larson
PhD Candidate, Educational Technology
Mary Lou Fulton Teachers College
Arizona State University
Jean.Larson@asu.edu

# APPENDIX I

## FLVS SURVEY INVITATION WITH LINK EMAIL

My name is Jean Larson, and I am an Educational Technology doctoral student at Arizona State University. I am conducting research about K-12 online teachers in the United States for my dissertation study. Because very little is known regarding this population, this research seeks to provide a clearer picture of the background and training of those teaching online.

As an employee of Florida Virtual School, you have been identified as someone who may teach online to K-12 students. If you are a K-12 online teacher (or can distribute this information to those that teach online) your response to this short survey would be greatly appreciated.

Your responses to this survey are very important. Information gathered will help capture an accurate representation of who is currently teaching online to K-12 students and will provide valuable information for both university teacher education programs and virtual schools.

This is a brief survey and should take you no more than 15 minutes to complete. Please click on the link below to begin the survey.

Survey Link: https://www.surveymonkey.com/s/FLVSonlineteachers

Your participation in this survey is completely voluntary and all of your responses will be kept strictly confidential. Your name will be removed from the list once you have completed the survey. Any reports of this data will not associate your responses with any personally identifiable information. Should you have any questions or concerns, please do not hesitate to contact me at Jean.Larson@asu.edu.

Thank you in advance for your help. Your responses are important in getting a true depiction of K-12 online teachers and how they were prepared to teach online.

Sincerely,

Jean Larson
PhD Candidate, Educational Technology
Mary Lou Fulton Teachers College
Arizona State University
Jean.Larson@asu.edu

# APPENDIX J

## FLVS SURVEY FOLLOW-UP EMAIL

Last week an email was sent to you asking you to respond to a short survey about your experience and training as a K-12 online teacher. Your participation in this study is important and will help in describing the current population of K-12 online teachers and how they were trained for this environment.

This brief survey should only take you 15 minutes to complete. If you have already completed the survey, I appreciate your participation. If you have not yet responded to the survey, I encourage you to complete the survey today.

Please click on the link below to access the survey.

Survey Link: https://www.surveymonkey.com/s/FLVSonlineteachers

I appreciate your time and consideration in completing the survey. Information gathered from online teachers like you is crucial to improve ways in preparing future distance educators.

Many thanks,

Jean Larson
PhD Candidate, Educational Technology
Mary Lou Fulton Teachers College
Arizona State University
Jean.Larson@asu.edu

# APPENDIX K

# RECRUITMENT EMAIL

My name is Jean Larson, and I am an Educational Technology doctoral student at Arizona State University. I am conducting research about K-12 online teachers in the United States for my dissertation study. Because very little is known regarding this population, this research seeks to provide a clearer picture of the background and training of those teaching online.

If you are a K-12 online teacher (or can distribute this information to those who teach online) your participation and input would be greatly appreciated.

Your responses to this survey are very important. Information gathered will help capture an accurate representation of who is currently teaching online to K-12 students and will provide valuable information for university teacher education programs, virtual schools and the profession in general.

This is a brief survey and should take you no more than 15 minutes to complete. Please click on the link below to begin the survey.

Survey Link: http://www.surveymonkey.com/s/onlineteachers

Your participation in this survey is completely voluntary and all of your responses will be kept strictly confidential. Any reports of this data will not associate your responses with any personally identifiable information. Should you have any questions or concerns, please do not hesitate to contact me at Jean.Larson@asu.edu.

Thank you in advance for your help. Your responses are important in getting a true depiction of K-12 online teachers and how they were prepared to teach online.

Sincerely,

Jean Larson
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Mary Lou Fulton Teachers College
Arizona State University
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