Inclusive Hospitality in Online Learning

Inclusive Hospitality in Online Learning:

Design, Deliver, and Discover

By

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To my grandson Solomon …
For whom the future will be a fantastic adventure.

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PREFACE

"Out of difficulties grow miracles."
—Jean de la Bruyere (1645-1696) French philosopher and moralist

First, please allow me to offer a word of confession. When I transitioned from teaching in a classroom to teaching online, I found the experience to be totally unsatisfactory. I found online courses to be relatively sterile and detached. What I missed most was the spontaneity and energy of the classroom along with ongoing interactions with students. Any "conversations" with students were done in writing through emails and course-based feedback. This simply felt wrong and not the best way to build learning partnerships with students.

As time passed, I began to experiment with various ways to engage with students in real time, through office hours and live synchronous discussions. By opening various channels of communication, and despite the constraints imposed by geographic and time differences, I found that my students were also seeking that personal contact. This window opened many opportunities for collaboration, dialogue, and problem-solving.

My initial response to online learning may differ from other faculty, perhaps even for different reasons. Consider, for example, a faculty member who does not like how their learning management system (LMS) formats quizzes, written assignments, or discussions. In both circumstances, personal preferences are getting in the way of the ultimate purpose of teaching, which is to assist students in their learning. The faculty must find a workaround that provides what their students need to succeed (e.g., using applications and tools outside their LMS to promote student learning).

From a different perspective, faculty may become exceedingly comfortable with how things are being done and respond negatively to innovations requiring them to change their mode of operation. Just as I resented not being able to engage with my students in real time, there are faculty who, given the opportunity to participate in those kinds of interactions, remain tied to written discussions and a digital veil between them and their students.

Change is inevitable. As this book is being written, thought leaders worldwide struggle to assess the possible impact of artificial intelligence (AI) on culture, life, and learning. Some will celebrate this newest addition

of digital innovation; others will cower in fear and outline AI's dangers. As with other innovations that will inevitably emerge in the coming years, faculty will need to adjust their thinking about how assignments and assessments are structured and graded. In this instance, and many others, it behooves faculty to examine each new development in online learning and how it might impact student learning. As with other aspects of our lives in the face of potential innovations, data should serve as a guide.

This book will be no exception. Some will embrace the idea of creating inclusive and hospitable learning environments, while others will reject the concept in favor of the status quo. Readers are encouraged to examine the principles shared in this book and use their critical thinking and reflection skills to determine how these principles might potentially be advantageous to their students. That is all a writer can ask.

CHAPTER ONE

A BRIEF HISTORY OF DISTANCE AND ONLINE LEARNING

"The most frequent failing of technological futurists is to predict the future with little or no reference to the past."
—Paul Saettler in *The Evolution of American Educational Technology* (2005)

There is sometimes a tendency to get overly excited about the most current innovations in teaching and learning. This is often done without full appreciation of the historical contributions made by creative thinkers and risk takers who paved the way for these developments. For example, the good, the bad, and the ugly of online learning is currently a hot topic of discussion. This new level of interest has been provoked by increases in online enrollment across higher education and the impact of "emergency remote teaching" during the pandemic (Hodges et al. 2020). Yet, despite the centuries-long history of distance learning, most educators lack a full awareness of the precursors that have led to our current online learning options. This chapter will examine the progression of distance learning from correspondence to radio, television, and contemporary Internet-based venues.

Defining the Parameters of Distance and Online Learning

On the surface, defining the parameters of distance and online learning should seem like a straightforward task. There have been, however, numerous debates over the exact wording that would be most helpful in explaining these elements of the teaching and learning continuum (Keegan 1988, 2006; King et al. 2001; Rumble 1989). For example, Mehrotra, Hollister, and McGahey (2001) defined *distance learning* as "any formal approach to instruction in which the majority of the instruction occurs while educator and learner are not in each other's physical presence" (1). This definition leaves the door open for varied forms of delivery (e.g., mail, email, radio, television, Internet) and various connections between the

educator and the learner (i.e., synchronous, asynchronous). Moore, Dickson-Deane, and Galyen (2011) warned that any definitions of distance learning must be flexible enough to account for changes in technology (e.g., tools, applications), the participants (e.g., instructor, student), and geographic locations (e.g., Asia, Europe, North America).

A further refinement is the need to define *online learning* as a subset of distance learning. That, too, would seem like a relatively simple approach. However, Singh and Thurman (2019) discovered forty-six different definitions of online learning that were commonly used by educators between 1988 and 2018. Overlapping concepts in these definitions included technology, synchronous/asynchronous, interactivity, physical distance, and the educational context for learning. Garner and Snyder (2021b) echoed these challenges, pleading for a need to move beyond one-word descriptors for online learning experiences (e.g., online, hybrid, bichronous, blended).

For our explorations in this text, the Singh and Thurman (2019) definition of online learning will be used as a primary point of reference:

> Education being delivered in is delivered on the Internet for teaching and learning. This includes online learning on the part of the students that is not dependent on their physical or a virtual co-location. The teaching content is delivered online, and the instructors develop teaching modules that enhance learning and interactivity in the synchronous or asynchronous environment. (302)

The beauty of this definition can be found in the endless number of possibilities outlined for the delivery of online learning. As will be discussed, this flexibility has long been a hallmark of online learning design and delivery. This valued attribute will likely continue to serve educators well into the future. As a disclaimer, however, as time passes and innovations in online learning become increasingly prevalent, this definition, too, may also become obsolete.

A Generational Perspective

Distance learning has undergone dramatic changes over the past three centuries. Researchers have identified various "generations" of distance learning to help us understand these transitions based on pedagogy, curriculum, content owners, interactions, medium, storage, and delivery (Heydenrych and Prinsloo 2010).

Anderson and Dron (2011) proposed dividing the history of distance learning by predominant pedagogies and learning designs:

- **Cognitive-Behaviorist—**A focus on new or changed behavior due to the individual's response to stimuli. Emphasis is on the measurement of behavior rather than attitudes or capacities. Primarily delivered through mass media, print, and television.
- **Social Constructivist—**This includes a focus on building new knowledge related to active learning, constructing knowledge, metacognition, and the creation of a learner-centric environment. These are primarily conducted through audio/video conferencing and ongoing communication.
- **Connectivist—**A focus on creating flexible networking connections concerning real world problems. These connections mainly occur on social networks and through using Web 2.0 tools.

Heydenrych and Prinsloo (2010), in a similar approach, proposed what they described as a "context-specific understanding of distance education" (11). Their proposed generations of distance learning include:

- **Early roots (40,000 BCE–1450 BCE)—**This includes oral tradition, rock art, symbols, and written language, primarily focusing on survival and technical skills.
- **First generation (1451–1916)—**Triggered by the invention of the printing press, this generation of distance learning includes content primarily delivered through books and other printed formats. Much of the dissemination of information in this generation of distance learning was managed and overseen by universities.
- **Second generation (1918–1955)—**With the advent of radio, film, animation, and television, mass media became a primary means to disseminate distance learning. Advances in technology provide opportunities for the long-term storage of learning resources in multiple locations.
- **Third generation (1956–1968)—**This generation of distance learning began to leverage computer-assisted learning, multimedia, and interactive learning. Audio and video cassettes and a reliable mail delivery system proved to be valuable influences during this generation of distance learning.
- **Fourth generation (1969–2005)—**During this period, the ownership and dissemination of content moved away from the universities to individuals and organizations. Hallmarks included the advent of videoconferencing, the Internet, media, and technology integration across multiple platforms prompted this transition.

These authors also listed some reservations about previously developed generational models in four areas of concern:

- Many models of distance learning mark their beginning with the advent of the printing press. It was suggested that although the invention of the printing press was a landmark event, there were earlier forms of distance learning that have often been ignored and undervalued (e.g., rock art, symbols, tablets, scrolls).
- There is an overwhelming emphasis on creating new distance and online learning technologies. This emphasis tends to ignore or minimize the vital role of learning theories in course design and delivery.
- Advances in technology are critically important to the ongoing development of distance and online learning. It is essential to determine the level at which these advances are designed to promote effective communication (e.g., students with students, students with faculty).
- Context is crucial when evaluating distance and online learning models (e.g., the impact on developing cultures).

Islam and Ferdowski (2015) took a more conciliatory approach, suggesting that learning pedagogies and new technologies should be considered in tandem. This pairing creates new opportunities for teachers and learners:

> For each mode of engagement, different types of knowledge, learning, and contexts must be applied and demand that distance educators and students be skilled and informed to select the best mix(es) of both pedagogy and technology. Although the prime actors in all three generations remain the same—teacher, student, and content—the development of relationships among these three increases from the critical role of student–student interaction in constructivism to the student–content interrelationship celebrated in connectivist pedagogies, with their focus on persistent networks and user-generated content. The popular community-of-inquiry model, with its focus on building and sustaining cognitive, social, and teaching presence, can be a useful heuristic in selecting appropriate pedagogies.

The generational perspective provides a longitudinal outlook on the progress made in distance and online learning. This view can help us evaluate both effective and unsuccessful strategies as we look forward to new possibilities for the future. In the following section, we can see this reality come to life through the efforts of individuals and organizations

worldwide that envisioned and implemented new possibilities for distance and online learning.

Great Ideas Persist Over Time

It is always helpful to look at the progression of events that have created our current perspectives on distance and online learning. These innovations can often be linked to courageous risk takers who pursued revolutionary ideas for their times and culture. Yet they persisted. As time passed, others would step forward, building on the work done by their predecessors. As a footnote to this discussion, many educators will probably be unable to name many of these brilliant and motivated individuals. And, as a confession, that was also true of this writer before embarking on this book. However, secondarily, there is a consistent theme. Many of these innovators chose their courses of action to help others, many from a distance, benefit from the knowledge, skills, and dispositions integral to learning.

First Steps: Distance Learning Through Correspondence

It is generally agreed that one of the first distance learning ventures was launched by Caleb Philips on March 20, 1728. Phillips, a teacher of the "New Method of Shorthand," placed an advertisement in the *Boston Gazette* offering a novel approach to learning (Holmberg 1995). Philips provided this opportunity to any "person in the country desirous to learn this art, maybe having several lessons sent weekly to them, be as perfect as those that live in Boston" (Sleator 2010, 320). This idea was ahead of its time. The challenge came in the form of an emerging, somewhat unreliable, and yet not fully developed postal system. In today's world, of course, we would expect a letter to be delivered in a matter of days. But unfortunately, that was not the case in the early eighteenth century.

In 1833, in Lund, Sweden, an announcement was made in the weekly *Lunds Weckoblad, No.30* (i.e., Lunds Weekly) announcing the availability of a program designed to teach "Ladies and Gentlemen composition through the medium of the post" (Holmberg 1995, 47). Although often understated, given the times, it is no small thing to note that this opportunity was being made available to both "Ladies and Gentlemen." This example illustrates the first of many efforts to create pathways for learning from a distance for anyone interested, regardless of gender.

It has been noted that the only English passage in the Lunds Weckoblad that week was provided by A.J. Mueller, inviting readers to take advantage of the instruction that he offered:

> The undersigned respectfully imitates to those Ladies and Gentlemen, in the adjacent towns, who study Composition through the medium of the *Post*, the address for the month of August will be Little Gray Friars Street. Lund. (Remote Work Before Computers 2021)

It is interesting to speculate on what might have motivated Mueller's thinking and how he envisioned the potential impact of his plan for teaching through correspondence.

The next innovator was an English language teacher named Sir Isaac Pitman. By the age of sixteen, he enjoyed reading *Walker's Dictionary,* copying out the words he didn't know so he could learn how to pronounce them and study their meanings (Rabina 2013). Pitman later developed one of the most popular forms of shorthand, today known as Pitman Shorthand. His company was highly successful and had offices in London, Melbourne, Johannesburg, Toronto, and Tokyo (Ferrari 2020).

In the 1840s, in Bath, England, Pitman launched an initiative to teach his shorthand transcription system through postcards. Pitman would send postcards to his students and instruct them to transcribe portions of the Bible into shorthand. Once the postcards were returned, Pitman would provide detailed feedback to the participating students (Verduin and Clark 1991). In a biography written by his brother Benn, Sir Isaac Pitman's dedication to this venture and his students was documented:

> The entire system, with explanation and exercises, was crowded into a six-by-eight sheet of exceedingly fine steel engraving the sheet containing on it margin the announcement that the author would correct the exercises of learners through the post gratuitously. Generous, indeed, but measurably futile, for the explanations, examples, and exercises were presented with such microscopic fineness that probably not more than on in fisty of persons of ordinary intelligence would possess the ability and industry necessary to unravel so intricate a presentation. He overlooked the fact that others were not so clear-sighted as himself, or that in general, they possessed one-tenth of his untiring industry. (Pitman 1902, 95-96)

This description summarizes the good and bad news of Pitman's distance approach to teaching shorthand. It also provides a remarkable and personal account of Pitman's devotion to his craft. For his contributions to developing the skill of shorthand, Queen Elizabeth knighted Pitman in 1894.

In 1858, Queen Victoria of Great Britain signed a charter that allowed the University of London's "External Programme" to provide distance learning opportunities worldwide. This action served as a critical landmark in the formal legitimization of distance learning. Additionally significant are the cultural implications of the 1858 charter. The University of London

was conceived as a secular alternative to Oxford and Cambridge, both of which had religious qualifications for entry. Additionally, this distance learning option opened access to those who worked full-time or could not afford to attend a college education (History of the University of London n.d.). This egalitarian approach and the availability of distance learning led Charles Dickens to refer the University of London as "The People's University" (Anderson 2007).

The founding of the Society to Encourage Studies at Home in 1873, in Boston, by Anna Eliot Ticknor was another step forward in promoting equity in higher education. The Society is often called the first correspondence school created in the United States (Bower and Hardy 2004). The purpose of The Society was to

> Introduce young ladies to form the habit of devoting some part of every day to study of a systematic and thorough kind. Even if the time devoted daily to this use is short, much can be accomplished by perseverance; the habit soon becomes a delightful one" (Society to Encourage Studies at Home 1897, 7).

It is fitting that Börje Holmberg (1995), a leading scholar in distance learning, lauded Anna Eliot Ticknor as the "mother of American correspondence study."

Beyond the opportunities fostered by the Society, the curriculum and pedagogy were of the highest quality. During the 1877-1878 academic year, the curriculum included History, Natural Science, Art, German Literature, French Literature, and English Literature. Harriet Bergmann (2001), in a stirring tribute to the work of the Society, indicated that it "used the services of over five hundred lady correspondents and served seven thousand women" (477). She summarized the prevailing philosophy of accountability and individualized learning and that "the society played an important role in the developing movement to educate all women, whether they chose to apply their learning in the home or the world beyond" (448).

When The Society to Encourage Studies at Home was founded, there was a growing change in attitude toward opportunities for women in higher education. Bergmann (2001) reported that within two years of Ticknor founding the Society, Smith and Wellesley Colleges were established along with schools in the Midwest that were already enrolling women. According to Cole (2012):

> Ticknor built a learning society that extended advanced educational opportunities to all women regardless of financial ability, educational background, race, geographical location, or physical ability. Through

> concerted effort she kept the Society and its works as quiet as she could, an invisible woman leading a 'Silent University. (ii)

Sadly, shortly after the death of Anna Eliot Ticknor in 1986, with no new leader stepping forward, leading to a decision to dissolve the Society.

Moore and Kearsley (2012) noted that improved mail delivery services in the United States, served by an increasingly reliable railway system, prompted dramatic changes and increased participation in distance learning. An often-overlooked leader in this movement was William Rainey Harper. As the leader of the Chautauqua Institution in New York, starting in 1883, Harper developed a correspondence course to teach Hebrew. This effort resulted in the State of New York recognizing the validity of correspondence courses through the Chautauqua College of Liberal Arts. Harper, however, did not stop there. He became the first president of the University of Chicago, where he created the first formal university-sponsored distance education program in the United States. Harper viewed this initiative as a way of extending the influence of higher education into the lives of people in suburban and rural settings who might not otherwise be able to participate in this type of learning (Boyer 2015). It is no wonder Harper was dubbed Chicago's "Young Man in a Hurry" (Mayer 1957).

In 1888, Thomas J. Foster, editor of *The Colliery Engineer and Metal Miner,* began publishing regular articles on issues related to mine safety. In 1891, he founded the International Correspondence Schools (ICS) in Scranton, Pennsylvania. ICS has affectionately been called "The World Schoolhouse" (Thomas J. Foster Historical Marker 2022). Watkinson (1996) described the roots of this highly successful distance learning program:

> ICS began in the pages of The Colliery Engineer and Metal Miner, a journal published in Shenandoah, Pennsylvania. Owing to an excessive number of mining accidents, the State of Pennsylvania passed a law requiring miners and inspectors to pass examinations on mine safety. With their jobs threatened by the new laws, miners demanded information this subject. T. J. Foster of the Colliery Engineer began to publish an education column on mining methods and mining machinery. The column only increased the demand for knowledge in the Pennsylvania mining districts, so in 1891 Foster prepared correspondence courses in coal mining. (348)

The efforts of Thomas J. Foster continue to reap benefits. In 2006, ICS became Penn Foster College. The college website boasts that over thirteen million students have attended ICS/Penn Foster College.

Here we can see the success of a distance learning initiative designed to meet the needs of a specific audience. The curriculum informed miners of

the best ways to be safe on the job and prepared them to become supervisors, state mine inspectors, or pursue other careers. Clark (1906) reported that by 1889 there were 80,000 students enrolled in ICS programs. This success has been attributed to how the curriculum responded to the needs of participating students. ICS adopted a service model that focused on convenient participation. As an example, students were sent course-related textbooks and all of the resources necessary to succeed as learners.

In Clark's analysis of ICS practices, however, he also identified some logistical concerns related to students who did not complete their assigned courses. Ironically, these identified problems are not unlike those experienced by today's students enrolled in distance learning and online programs (e.g., a preference for courses directly related to career plans or personal interests, competing demands for their time, difficulty with written communication, failure to complete assigned tasks promptly). These observations provide a potent reminder that course design and delivery must be intentionally focused on the needs of learners. Unfortunately, however, some students may be unable to meet the curriculum's demands, even with the best possible intentions.

The distance learning movement continued to gain momentum through the efforts of Penn State University (PSU). A plaque on the campus of PSU commemorates the initiation of the first university-sponsored correspondence programs in agriculture:

> In 1892, under the directions of Prof. Henry Walters, Penn State became the first American institution of higher education to offer correspondence courses in agriculture. The goal was to make scientific studies available to those persons unable to attend traditional college classes. Penn State's initiative was followed by a national expansion of correspondence instruction in technical fields (Dawson 2017).

By the end of the 1920s, over 38,000 people had taken at least one course through the PSU correspondence course mechanism (Dawson 2017). The thing that can be seen from the PSU story, and other universities that chose to jump into correspondence as a means of distance learning, is how this decision created a springboard for the adoption of new technologies that help students learn at a distance.

As one of the final chapters in the correspondence phase of distance learning, the Moody Bible Institute in Chicago, in 1901, initiated the first faith-based correspondence program. As with other schools that have pursued this form of education, their purpose was to provide:

> the benefit of those of both sexes who cannot, for financial or other reasons, attend the institute personally. The purpose is to give the, as far as possible,

> all the systematic methods of study pursued here. (History of the Moody Bible Institute n.d.)

Arnold (1968) reported that the Moody Bible Institute course materials were printed in a pamphlet format, roughly forty to eighty pages in length. This was done as a convenience for students. They could take their learning materials with them and study as time permitted. Arnold also noted that enrollment in the Moody Bible Institute correspondence courses grew from 7,832 in 1960 to over 40,000 by 1968. The Accrediting Association of Bible Colleges observed that this program was the largest of its type at the time. Today, the Moody Bible Institute continues to serve students worldwide through online undergraduate and graduate programs.

The "correspondence years" of distance learning provided a firm foundation for all that followed. For almost 200 years, correspondence courses were the primary form of distance learning. In addition, sponsoring institutions shared a common concern for those who, geographically or economically, could not attend courses on a college campus. This commitment continues as an essential element of distance learning.

The Arrival of Electronics: Radio and Distance Learning

Radio was the next big thing in distance learning. On December 12, 1901, Guglielmo Marconi sent the first transatlantic radio signal from Cornwall, England, to St. John's, Newfoundland. From there, it was not long until radio became the first broadcast medium generally available to the public. On November 2, 1920, Pittsburgh's KDKA radio station made the first commercial broadcast featuring the presidential election results between Warren G. Harding and James M. Cox.

The 1930s and 1940s are often referred to as the "Golden Age of Radio." In 1930, 12 million American households had a radio. By the end of that decade, the number had increased to 28 million households (Radio in the 1930s/History Detectives n.d.). This form of communication became integral to American culture, broadcasting news, sports, music, serial comedies, and dramatic programs. As we will examine, the radio also became another way to provide distance learning.

According to Saba (2013), the first educational radio license was issued to the Latter-Day Saints University (now known as Ensign College) in Salt Lake City, Utah, in 1921. Similar permits were obtained by the University of Wisconsin and the University of Minnesota in 1922 (Saettler 1990). By 1929, 276 institutions were issued educational radio licenses. Unfortunately, only thirty-five educational radio stations survived the Great Depression (Buckland and Dye 1990, cited in Kentnor 2014).

In Chicago, the Sears and Roebuck Company operated the 50,000 watts AM radio station WLS (i.e., an acronym for the World's Largest Store). In 1924, Sears provided funding to create the "Little Red Schoolhouse of the Air" on their Chicago-based radio station. Hosted by Uncle Ben Darrow, the program featured lessons related to art, music appreciation, geography, science, and farming (Bianchi 2008). An estimated 28,000 students across northeastern Illinois, northwestern Indiana, and parts of Michigan participated by listening to the Little Red Schoolhouse of the Air (Lawson 1942 cited in Bianchi 2008).

Interestingly, amid the current COVID pandemic and the challenges in keeping schools open, it is fascinating to look back and consider how the Chicago Public Schools leveraged radio-based instruction during the polio outbreak of 1937. Roughly 315,000 students in grades 3-8 took advantage of lessons prepared and delivered by Chicago teachers on the radio. Additionally, sixteen teachers answered telephone calls from students who needed assistance. On the first day of service, there were over 1,000 calls to the district's central office (Foss 2021). Adversity can sometimes lead to new levels of resourceful thinking.

In 1930, the Carnegie Corporation, through its subsidiary, the American Association on Adult Education, joined the National Broadcasting Company to form the National Committee on Education by Radio (NCER) (Leach 2013). This organization was formed to secure additional radio licenses and serve as a clearinghouse for information and research related to radio-based distance learning (Kentnor 1930). Haus (2006) observed:

> Between 1930 and 1934, the NCER would battle with the commercial radio industry and its trade organization, the National Association of Broadcasters, attempting to carve out a safe space for educational, non-nonprofit through a mixture of lobbying efforts and grass-roots activism. Ultimately the NCER lost its battle with the passage of the Communications Act of 1934. Other scholars have explored this moment in American history, arguing that the NCER stood little chance for success because of its own ineptitude and a powerful commercial industry. (iii)

As mentioned above, the *Communications Act of 1934* created the Federal Communications Commission, empowered to regulate telephone services, along with radio and television communications. In addition, the *Communications Act of 1934* was amended by the *Public Broadcasting Act of 1967* to create the Corporation for Public Broadcasting (CPB). The CPB distributed over 70% of its funding to over 1,400 public radio and television stations (CPB Financial Information 2016).

The story of distance learning in Canada also provides a compelling example of the intersection between public interest, private enterprise, and government interventions (Buck 2006). As a point of reference, in the 1930s, roughly 50% of the Canadian population lived in rural areas (Statistics Canada 2011). This reality enhanced the need to create novel distance learning options. Buck traced the origins of radio-based distance learning back to the Canadian National Railways (CNR). Sir Henry Worth Thornton, President of the CNR, introduced the placement of radios equipped with headphones in CNR parlor cars (Thornton 1924). This was initially done as a value-add for intercontinental customers of the CNR. To implement this strategy, the CNR created a network of radio stations, broadcasters, and transmitters across Canada, with the leading network in Toronto, to connect with their system of transcontinental trains (McDowell 1932).

In 1933, the Canadian government took the CNR network away from the railway system and created the Canadian National Broadcasting Commission (Buck 2006). This controversial decision prompted vigorous advocacy for using the radio system to support and extend educational opportunities, particularly for those living in rural areas. Buck pointed out three challenges with the CNR as the foundation of the then-existing broadcasting system:

- Education in Canada was primarily a provincial concern. This raised the issue that some CNR broadcasts might be incompatible with varied curricula.
- Equitable access was difficult to achieve due to the cost of radio receivers.
- There was no consistent method for recording and rebroadcasting radio programs across Canada's six time zones.

Although the Canadian story is fascinating in many ways, Buck observed that it is simply a "historical curiosity" (87). In some ways, however, it demonstrates how public and private interests can be politicized and simultaneously bring about public good. As in other countries and circumstances, using radio for distance learning was another closer toward our current technologies and practices.

Using the radio for distance learning has been a significant resource in underdeveloped and developing countries. Advantages include the cost-effectiveness of the medium, the widespread availability of radios, and the demonstrated impact on student learning (Tripp and Roby 1996). For example, Chandra and Sharma (2003) summarized the implications of the

Indira Gandhi National Open University in India. This university has 40 FM radio stations and broadcasts programs related to essential, primary, higher education, and vocational topics. Patnaneni (2020) also reported that the Indira Gandhi National Open University had also initiated a phone-in radio option for incarcerated individuals. Radio-based distance learning has been shown, even in recent times amid other forms of technology, to be a valuable tool for individuals from historically disadvantaged people groups.

The Golden Age of Radio provided an opportunity to expand and extend the parameters of distance learning. There were challenges and difficulties in making this communication medium widely available. In perspective, however, this is a typical reality as new forms of communication intersect with teaching and learning and large, diverse, geographically dispersed groups of potential learners.

Television and Distance Learning

Just as there was a Golden Age of Radio, the 1950s ushered in the "Golden Age of Television." The pace at which television became a household staple was unprecedented. In 1948, 0.4% of households in the United States had a television. It is astounding also to note that by 1958 that figure had risen to 83.4% (Golden Age of Entertainment 2008). With this dramatic increase in popularity, television became another logical path for distance learning. Kentnor (2015), however, offered this retrospective view of television as an element of distance learning: "The foresight to use visual technology in education came long before such capability existed; yet surprisingly, once implemented, it did not gain strength in education as many had anticipated" (26). However, as with previous renditions of distance learning, there were lessons to be learned.

In 1945, Iowa State University secured a license to provide educational television and began broadcasting on February 21, 1950 (Vote to Sell T.V. Station Splits Iowans 1992). Initial course offerings included German, Chemistry 101, and agriculture-related topics. Other early entries into educational television were made by the University of Iowa, Kansas State University, the University of Michigan, and American University (Koenig and Hill 1967).

In 1948, the Federal Communications Commission (FCC) imposed a freeze on licensing new television stations. This freeze lasted until 1952 when the FCC granted exclusive licenses to 242 educational institutions. Ironically, those institutions also benefited from a provision that allowed radio stations to transition from academic to commercial stations if desired (Steinberg 1955). As a result, a total of 632 channels were reserved by 1966.

These channels were licensed to state and local educational agencies, colleges, universities, and community organizations (Koenig and Hill 1967).

Taggart (2007) described what he viewed as the "promise and failure of educational television in a statewide system" (111). This case study was based on educational television in Delaware from 1964 to 1971. In 1954, a group of citizens formed the Delaware Educational Television Association as a nonprofit organization. This initial effort led to the launching of station WHYY on September 12, 1963. However, by 1971, it was concluded that "The Delaware system was too cumbersome, too costly, and too nonessential to the classroom teacher for legislators to invest in a system flexible and good enough to make an important difference to the schools or the community" (120).

This story illustrates the complexity and cost of launching and maintaining educational television networks. Anthony Bates (1987), one of the early scholars of television as a tool for distance learning, pointed out some of the limitations and pedagogical challenges inherent in instructional television:

> Television can provide unique learning opportunities for distance education students. However, exploiting the presentational, rather than distribution, characteristics of television is costly. Where high-quality learning is required, i.e., where students are required to develop deep comprehension or higher-level learning skills, there are good pedagogic reasons for 'high-quality production which exploits the presentational characteristics of television. This may be particularly important where students have little previous conceptual knowledge in a subject or have had little previous experience in developing skills of analysis, interpretation, application, or problem-solving. (23)

As distance learning technology became more sophisticated, the costs and complications became more challenging. This caveat was particularly true of efforts to use television as a medium for delivering distance learning. Local and regional television stations found it hard to maintain other programming and take on the additional burden of developing and providing educational programs.

One possible exception to the challenge of regional television and distance learning delivery is the collaborative approach initiated in Pennsylvania. The nonprofit Pennsylvania Educational Communications System was formed on August 29, 1979, with funding from cable television networks. Through this system, Pennsylvania State University started PENNARAMA, also known as the Pennsylvania Distance Education Network, in 1983 (Froke 1994). As a result, PENNARAMA was billed as "the world's largest cable television network," with 1.5 million users and

offering courses to users in 200 communities across Pennsylvania (McCarty 1983). This was accomplished through partnerships with twenty-seven cable systems. As a result, viewers could take advantage of college credit courses in the humanities, business logistics, and literature. In addition, noncredit courses in classical guitar, consumer purchasing skills, and microwave cookery were available on a channel that operated 24 hours a day, seven days a week, as a convenience to its viewers (Brayford 1992).

Jones International University (JIU) presents one of the final chapters in the use of television for distance learning. On November 15, 1987, Glenn R. Jones launched the Mind Extension University, a cable television network offering courses where students submitted assignments and contacted faculty by telephone. In 1993, The Mind Extension University changed its name to JIU. In 1999, JIU became the first fully online university accredited by the Higher Learning Commission. According to Kirp (2003), this decision caused outrage among members of the American Association of University Professors. They contended that JIU was nothing more than an online, for-profit trade school. JIU closed in March 2015 due to a sharp decline in enrollment.

The "virtualizing" of education was not universally welcomed with open arms. As an example, an article by Samuel L. Dunn (2000) in *The Futurist* offered a frontal attack on "learning from afar" (34). Dunn summarized efforts in South Africa, Hong Kong, Spain, Portugal, and the United States to offer higher education in venues other than the classroom. It is actually unclear whether Dunn supported or decried these developments early in the twenty-first century. What is most striking is the prediction offered by Dunn about distance education and its impact on the academy: "By 2025, traditional universities will be a thing of the past, replaced by consortia of course providers with delivery systems that bypass the classroom" (34). Consider this prediction against the backdrop of Coursera, Udemy, Skillshare, Udacity, the Khan Academy, and edX. Dunn managed to foreshadow the ongoing impact of distance and online learning across higher education.

It is reasonable to assert that television viewers, even in these early days, tended to compare the quality of public television with commercially produced programs, either consciously or unconsciously. Saba (2013) also pointed out that it was common to compare television-based instruction and the types of learning that occur in a classroom. However, in a lecture at the Open University, A.W. Bates (1987), a respected scholar in distance education, argued that debates about the "medium" of television, compared to other options, were addressing the wrong question. He suggested that in other forms of instruction, student learning is often determined by clear

objectives, the structure of the lesson, matching tasks to the needs of the students, student activity, and feedback. He proposed that he use of television for distance learning should address these same outcome-oriented criteria.

Bates also compared the logistical issues surrounding live broadcast television programs when compared with those that were recorded on cassettes:

- Live broadcast programs are available at a fixed time, while cassette recordings can be viewed when needed.
- Live broadcast programs only occur once, while cassette programs can be viewed multiple times, searched, and repeatedly used until the student masters the content.
- Live broadcast programs make it challenging for viewers to reflect on what they watch, while cassette programs allow analysis and reflection.
- Live broadcast programs are available at one speed, while the pace of cassette viewing can be modified in response to the learner.

A study at Mid-America University evaluated the impact of instructional television on people who found it difficult to learn from information in print. The results indicated that participants had more favorable feelings about television content when it directly related to other aspects of a course. They also, however, had fewer favorable responses to the idea of making the instructional television experience amusing and entertaining (Hawkridge 1978 cited in Holmberg 1995).

Over time, the medium of television began to wane as a distance learning strategy. At the same time, however, television programming did contribute to an overall awareness that learning could move beyond the printed word, static pictures, and the spoken word to a more engaging level by combining the best in all forms of communication. In the book *Instructional Television*, Ackerman and Lipsitz (1977) and their colleagues offered a postmortem on the viability of television as an instructional medium. The general tone of the commentaries was that instructional television did not live up to the hype created around this perceived "magic bullet" for learning in school settings and beyond.

On the positive side, there was reason to celebrate the impact of television programs like "Sesame Street" and "The Electric Company" as shining examples of what instructional television could achieve. At the same time, however, the volume of content required to impact varied age levels and academic content areas would be overwhelming (not to mention

expensive and logistically challenging). These observations should not be interpreted as an overall criticism of instructional television. As with correspondence and radio, instructional television advocates pointed our imaginations toward what could be possible. This contribution alone is of great importance and value.

The Move to Online Learning

As our journey continues through the history of distance learning, it is essential to take a brief side trip to acknowledge the role of the Internet as a foundation for developing robust and varied online learning options. Our coverage of the Internet as a topic will only hit the high points that directly bear on the development of online learning. For those who wish to dig deeper, an abundance of discoveries that undergird what we currently know as the Internet will not be covered. Readers are referred to other resources that examine these discoveries in great depth.[1]

As computers became more common in business and industry, there was a need to create devices that transmit data from one location to another. What we today know as news agencies often used the modem (i.e., the abbreviation for MOdular-DEModulator) as far back as the 1920s to transmit data across dedicated telephone lines. This tool was also used in World War II and the Cold War to encrypt and send digitized speech. In 1958, Bell Labs upgraded the quality of the modem, converting digital signals to analog and back again, which allowed computers to communicate. In 1962, the Bell 103 modem was made available for commercial use. After this initial foray into the commercial market, the speed and efficiency of modems would continue to increase at a dramatic pace.

An early visionary who played a vital role in the future of interconnected computers was J.C.R. Licklider, a psychologist and computer scientist who worked at Harvard, the Massachusetts Institute of Technology, and the Pentagon over the span of his career. He foresaw how humans could interact with computers through the creation of an "intergalactic computer network" (Licklider 1960; Licklider and Taylor 1968). In the Prologue to *The Dream Machine* (2018), M. Mitchell Waldrop described the contributions of J.C.R. Licklider:

[1] For readers interested in these discoveries, in much greater detail, you are encouraged to visit the timeline presented on the Internet Hall of Fame website (https://internethalloffame.org/internet-history/timeline).

> At a time when we were a short step removed from mechanical data processors, Licklider was writing treatises on 'human-computer symbiosis,' 'computers as communication devices,' and a now not-so-unfamiliar 'Intergalactic Network.' His ideas became so influential, his passion coined him "computing's Johnny Appleseed." In a simultaneously compelling personal narrative and comprehensive historical exposition, Waldrop tells the story of the man who not only instigated the work that led to the Internet, but also shifted our understanding of what computers were and could be.

Numerous colleagues of J.C.R. Licklider commented on his creative energy, the ability to envision what could be possible, and the ways in which he encouraged their careers and contributions to furthering the development of new technology.

In 1965, Lawrence Roberts and Thomas Marrill created the first wide-area network (WAN). A WAN provides the ability to connect computers across cities or even countries. This contrasts with the abilities of a local area network (i.e., connecting computers in a smaller range like a home, business, or school). Roberts and Marrill, funded through the Advanced Research Projects Agency Network (ARPANET) and inspired by J.C.R Licklider, created a long-distance dial-up between a TX-2 computer in Massachusetts and a Q-32 computer in California (Marill and Roberts 1966). This development helped people worldwide to visualize the Internet and its potential impact on the global community.

The invention of email was the next significant advancement related to helping people connect online. This discovery was ultimately critical to our understanding of best practices in online learning. The first email was sent in 1971 by Ray Tomlinson, a computer programmer at ARPANET. Tomlinson is credited with adding the "@" sign to indicate an individual's email address. When asked about the content of that first email, Tomlinson responded: "My original statement was that the first email message was something like 'QWERTYUIOP.' It is equally likely to have been 'TESTING 1 2 3 4' or any other equally insignificant message" (Varghese 2016). Regardless of the content, that original email message changed how people communicate worldwide. It is estimated that 333.2 billion emails were sent in 2022. By 2025, that figure is expected to rise to 376.4 billion annual emails.

In 1974, the term *Internet* was coined. This accomplishment is credited to Vinton G. Cerf and Robert E. Kahn. They published "A Protocol for Packet Network Intercommunication," which outlined the elements of the transmission control protocol (TCP). A TCP enables the transmission and acceptance of messages and provides for communication among countless