DISTANCE EDUCATION FOR TEACHER TRAINING:

Modes, Models, and Methods

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Section II. Chapter 13

PREPARING DISTANCE INSTRUCTORS

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Best Practice: Successful distance education programs provide high-quality preparation for distance learning instructors.

13.1 Overview

As many of the world's primary, secondary, and tertiary-level teachers discovered during the COVID-19 pandemic, "remote teaching"—teaching via distance—is a major paradigm shift. The world's teachers, many of whom were thrust into the role of a distance educator, had to learn how to use technology, teach through a particular distance model (e.g., a Web conferencing platform or Google *Classroom*), and figure out how to exhibit the learner-centered instructional approaches outlined in Chapter 10. Even those with more knowledge still found it difficult to integrate technology and pedagogy in ways that were engaging for students. For teachers without a strong knowledge of technology and online pedagogies, this was a steep learning curve. And teachers who had *never* used technology or learner-centered pedagogies faced the most difficult challenges of all (Burns, in press; Organisation for Economic Co-operation and Development [OECD], 2020). (Figure 13.1 discusses teacher adoption of online learning during the early months of remote learning in 2020.)

Good teaching is good teaching, regardless of the mode of instruction. Yet as many of the world's teachers, university instructors, and teacher educators discovered during the COVID-19 pandemic-related emergency remote teaching, teaching via technology requires an additional skill set, and every mode of distance education presents its own unique set of instructional challenges. Whether in traditional modes of distance education (print-based correspondence, radio, television) or newer ones (online, mobile, or multimedia-based distance education), distance instructors face a diverse and unique set of additional technology-based pedagogical challenges that require added professional development and support (Barbour, 2014; Cadorath et al., 2002; Myung et al., 2020).

This chapter argues that good distance instructors[1] matter, just as they do in face-to-face settings. The chapter focuses on the skills needed by two primary groups—*online instructors* teaching pre-and in-service teachers and *online teachers* of primary and secondary-level students. The following pages examine the current state of preparing instructors and teachers to teach online, and point to the need to prepare instructors to teach in the mode of distance education they will use.

13.2 What Skills Do Distance Instructors Need?

Well before COVID-19 emergency remote learning, Maor & Zariski in 2003 studied how Australian university faculty (lecturers) embraced online technologies and pedagogy. Through their research they developed a profile of instructors

[1] In this chapter and guide, an "instructor" teaches pre-or in-service teachers ("learners") whether in universities or distance-based professional development programs. A "teacher" teaches primary and secondary-level "students."

and the variation in their transition to online teaching. Maor & Zariski's profile is as resonant now as it was decades ago and consists of the following change types:

- Instructors who refuse to acknowledge the potential of eLearning as an interactive tool for teaching and learning, and therefore deliberately do not use technology as part of teacher training.
- Instructors who utilize constructivist approaches in face-to-face sessions but not in online learning (this type may form the largest set of online teaching adopters[2]).
- Instructors who embrace technology but do not change pedagogy to capitalize on the interactive potential of technology (this type is also a large group).
- Instructors who adopt online learning to match a social constructivist or learner-centered approach to teaching (this type tends to be a smaller group).

Those who work in teacher education will recognize the first three change types; less common is the fourth—because of the challenges involved. The above typology suggests that distance education instructors need an array of training and support particularly as they transition to online learning. Indeed, research suggests that preparation and professional development for those who are about to teach online require an assortment of skills related to teaching via technology. A discussion of these skills forms the bulk of this chapter.

Figure 13.1
Instruction During "Emergency Remote Teaching"

In spring 2020, the SARS-COVID-19 pandemic forced the shutdown of educational institutions across the globe. Perforce, education systems with strong technology infrastructure rapidly pivoted to "emergency remote teaching"—mostly online education, but often in its most reductionist form—as a content delivery system (Cobo et al., 2020; Pillow & Dusseault, 2020). Teachers uploaded assignments in Google *Classroom* or via a subscription education service. Students learned alone, with occasional check-ins and office hours with teachers via a Web-conferencing system. Relatively few students participated in sustained real-time instructional activities with their teachers or classmates (Burns, 2020). Where there was instruction, it was often in the form of a lecture—some live, most pre-recorded (Goldstein, 2020).

This use of online didactic approaches by teachers, many of whom employed learner-centered approaches in their in-person classrooms, resulted from the fact that across the globe relatively few teachers had received pre-pandemic technology training (OECD, 2020). Thus, they had to quickly decide which technologies to use and learn how to use them (Burns, 2021). This reality, combined with a lack of careful online course design, sidelined good pedagogy, and resulted in high degrees of learner dissatisfaction with and diminished academic performance in online classes (Burns, 2021; Halloran et al., 2021; Vidić et al., 2022).

But remote learning did offer countries the opportunity to rethink the importance of using low- and high-tech tools in sustainable and pedagogically sound ways. In Zimbabwe, UNESCO and the Ministry of Primary and Secondary Education (MoPSE) launched the Rapid Teacher Training on Open, Distance and Online Learning Programme. Some 1,400 teachers learned how to design online lessons and teaching content using low-tech tools such as *WhatsApp* and high-tech tools, such as learning management systems (LMSs), to deliver responsive and interactive remote learning to students (United Nations Educational, Scientific and Cultural Organization, 2021). Pandemic-inspired remote learning also offered the global community an opportunity to begin to envision what optimal distance learning should look like in action.

[2] This statement is based on author interviews with 100 teachers across 19 countries in 2020 and 2022.

13.2.1 Technology Skills

Distance education instructors should know how to use the technology platform through which they will teach, whether it's an MP3 player; a radio; a Web conferencing tool, such as *BigBlueButton*; a learning management system, such as *Blackboard*; an online classroom, such as Google *Classroom*; more independent Web 2.0 or SaaS tools, such as *Pear Deck* or *Nearpod*; or interactive audio or mixed reality. They should know how to create content and design activities for their mode of distance education. They should comprehend the benefits and challenges of these tools; know how to teach and assess using such tools; be able to manage the workflow associated with such tools (sharing resources, grading, and returning learner assignments); and be capable of troubleshooting or undertake the process for getting technical support (where it exists) for the inevitable issues that will arise. They also should know how to use the various apps that can enhance the functionality of these tools—both *Chrome* extensions[3] and third-party apps such as *AnswerGarden* or *Mentimeter*.

13.2.2 Ability to Blend Pedagogy, Technology, and Content

Distance learning programs often struggle to find well-qualified instructors who understand how the intersection of technology, pedagogy, and content can provide meaningful learning experiences for distance learners.

Like any good teacher, distance education instructors must know their content and how to help learners master content in a distance environment. Often, assumptions prevail that all distance learning is a self-study process in which content is best understood via didactic materials and that learners can learn key content topics on their own simply by reading text or watching a video. In such an environment, distance instructors focus on communication, record-keeping, and administrative tasks.

Distance instructors need content mastery. But they need a range of other skills, too, including the ability to (1) use content-appropriate instructional strategies in a technology-mediated environment to help learners master the most important concepts of a particular discipline; (2) select the most appropriate technologies to produce effective discipline-based teaching with technology; (3) design instructional activities that capitalize on the affordances of a particular technology to promote content mastery (Shulman, 1986; Dawson & Dana, 2018; Akyol & Garrison, 2011; Baker, 2010; Barbour, 2014; Bawa, 2016; DiPietro et al., 2010; Mishra & Koehler, 2006; Burns, 2019).

Distance programs can assist instructors in integrating content, pedagogy, and technology—particularly for those designing synchronous and asynchronous online learning activities or blended distance environments—through the use of technology integration frameworks. These are operational procedures or scaffolds that serve a number of planning, implementation, and evaluative purposes. Technology integration frameworks furnish educators with guidelines and models for blending technology, curriculum, and instruction to facilitate meaningful integration in a systematic, evolutionary, and even "step-wise" fashion. They help operationalize what teaching and learning should look like under a certain set of proscribed conditions and establish a pathway for optimal integration, with markers that differentiate one level of integration from another (Burns, 2019).

Two of the most well-known technology integration frameworks are Technological Pedagogical Content Knowledge (TPACK) and the Substitution-Augmentation-Modification-Redefinition Framework (SAMR). Using these frameworks, instructors can leverage technology to not simply deliver content, pedagogy, and assessment but

[3] For a list of helpful *Chrome* extensions for online instructors, see: https://blog.curiosity.ai/8-must-have-chrome-extensions-for-remote-workers-in-2022-71bd4311dbec.

do so in thoughtful, structured ways that produce higher-level, discipline-based teaching (Mishra & Koehler, 2006; Puentedura, 2015).

13.2.3 Online Presence

In an online environment, the instructor plays a critical and multifaceted role. He or she is the "face" of what can be, for novices, a disembodied and potentially disorienting experience. Instructors must work to establish a welcoming presence, set a tone that encourages reflection and inquiry, broaden and deepen online communication, assess both individual and group learning and interactions, provide critical judgments and feedback about whether and how well participants are gaining content-specific knowledge, encourage those who fall behind in posting, know when and when not to intervene, and summarize participant learning.

"Presence" has three dimensions: *cognitive* (discussions of knowledge and procedures), *social* (emotional engagement among learners), and *instructional* (modeling effective pedagogical practices) (Rapanta et al., 2020; Rourke et al., 2001). Research confirms that strong and skilled facilitation of the knowledge, of the learning process, and of the social aspects of learning and helping learners become socially and academically integrated in the course is one of the most important factors in successful course completion and perceived learning (Akyol & Garrison, 2011; Burns, 2013; Dikkers, 2018; Gray & DiLoreto, 2016; Martin et al., 2020; Rapanta at al., 2020; Rourke et al., 2001). Presence assumes even greater importance when learners are accustomed to traditional, didactic learning environments and are new to online education.

Face-to-face instructors can create a sense of presence because they *are* physically present with their learners; presence is also easier in a synchronous online course (in *Zoom* or Google *Meet*). Where emotional, cognitive, and instructional presence becomes more challenging is in asynchronous courses, such as print-based correspondence courses or online courses via an LMS, where instructors are separated from their learners in space and time. This situation can be remedied by designing for frequent instructor-learner interactions and requiring instructors to respond to learners within 24 hours by text, voice, or email.

13.2.4 Effective Communication Skills

A critical component of presence is communication. There are typically two broad types of instructor-related communication in a traditional LMS-based course.

The first is online discussions, which are often the "ties that bind" a collection of individual learners into a collaborative learning community. Without such discussions, the learning opportunity becomes a solo endeavor, and opportunities for deeper learning are lost. The promotion of such collaborative communities through online discussion groups requires skilled facilitation by instructors who employ strategies that elicit learners' beliefs and understandings. These instructors recognize when and how to respond to individuals and to the group in order to shape and promote interaction. They guide participants along a continuum of learning from awareness of new techniques to adapting and applying such techniques in their own professional settings (Burns, 2010).

The second is instructor conversations with learners, both collectively and individually. To make the online environment feel like a conversation and foster a sense of belonging, facilitators must provide "verbal immediacy" and "just-in-time" assistance—frequent and meaningful communication from an instructor to online learners (Burns, 2010; Reupert et al., 2009). Baker (2010) found a statistically significant positive relationship between this verbal immediacy and presence, noting that the linear combination of the two is a statistically significant predictor of affective learning, cognition, motivation, and learner satisfaction with the online environment. Thus, verbal immediacy is a critical ingredient of good communication as well as of presence because

an online instructor's response time can bridge the virtual distance between the instructor and learners—or deepen it.

13.2.5 Feedback

An important part of communication is feedback. Feedback has numerous benefits for adult learners as well as for the students they teach: It has a sizeable impact on learning outcomes and can actually deepen learning (Dobbie & Fryer, Jr., 2013; Jaquith & Stosich, 2019; Timperley et al., 2007). The quality and timeliness of an online instructor's feedback is the most valued form of learning connection identified by distance learners, and higher student achievement is positively linked with higher amounts of feedback to *teachers* (Dobbie & Fryer, Jr., 2013; Ragusa & Crampton, 2018). For example, one study of New York City charter schools reported that teachers at high-achieving middle (i.e., junior secondary) schools received more than twice the amount of feedback as teachers in schools not categorized as high-achieving (Dobbie & Fryer, Jr., 2013, p. 35).

Distance instructors can provide online learners with authentic opportunities and supports to provide meaningful feedback to one other. This is particularly important in teaching methods

Figure 13.2
The Complexity of Feedback

As educators, our belief in the necessity and utility of feedback is almost dogmatic. Yet the reality of feedback is far more complex. For instance, human beings can employ one of three reactions to feedback: They can accept it; modify it to fit their existing schema; or reject it outright. A good deal of research shows we routinely do the latter (Buckingham & Goodall, 2019). We get defensive and reject feedback, particularly when it comes from a source we do not consider credible. In the case of teachers, that might be a coach who has never taught or an online instructor whom teacher-learners consider to be unqualified (Burns, in press; Molloy et al., 2020).

Feedback appears to have more utility for people whose main motivation is self-improvement and when it is "developmental" versus "evaluative" (Blunden et al., 2019). Developmental feedback best achieves its purpose when it highlights and emphasizes the areas in which the recipient can improve and is forward looking, offering clear actionable steps and strategies for improvement (Buckingham & Goodall, 2019; Blunden et al., 2019). But even here, feedback seeking is only weakly related to performance, and employees often report that the feedback that they receive is unhelpful (Blunden et al., 2019).

The person delivering the feedback also can be problematic. Distance instructors, for example, may be reluctant to offer constructive criticism—they may not have been trained in how to do so. Both culture and their own personality may make critiques of others difficult for them (the "MUM" effect), especially if the teacher is a peer, and they may lack knowledge and skills about teaching and thus be unable to provide valid and actionable information. A lot of preparation focuses on the "how" of feedback—the communication skills needed to deliver feedback—but not the far more valuable "what" (Molloy et al., 2020). Many feedback techniques used by distance instructors, such as the "feedback sandwich," have been discredited by research (Henley & DiGennaro Reed, 2015).

A number of studies suggest better approaches to feedback. One is omitting it altogether. Doing so actually produced statistically significantly higher performance versus using the feedback sandwich in one study (Henley & DiGennaro Reed, 2015). A second is to dispense with feedback and instead encourage teachers to ask for "advice," which appears to better align improvement goals with information-seeking strategies (Blunden et al., 2019). A third approach, for teachers who must receive classroom observation feedback, is to use a critique-positive-positive, or CPP, sequence. Lastly, teachers and their distance instructors can focus on debriefing, which involves developing actionable items and a plan (Molloy et al., 2020).

courses or online professional development focusing on instructional or assessment practices. This performance feedback must be frequent, timely, explicit, detailed, and embedded within practice-based opportunities. A number of tools, such as *Mote* and *Kaizena*, can make this feedback easier in online environments.

A robust body of research has long advocated the importance of feedback. More recent research begs to differ with much of the conventional thinking on feedback as Figure 13.2 has outlined.

13.2.6 Ability to Manage Learners

For learners who have never been given the independence or flexibility to chart their own learning course, or who come from education systems that are top-down and directive, less structured forms of distance learning such as asynchronous online courses or immersive environments can be challenging. Distance learners, particularly novices, may have difficulty completing their work in such an open environment, particularly when they are not part of a place-bound physical cohort of other learners.

Distance instructors must devote time to assisting such learners by motivating them, counseling them, offering just-in-time support, monitoring their performance, providing one-on-one and differentiated tutoring, or just checking in (Cadorath et al., 2002; Dahya & Dryden-Peterson, 2017; Hennessy et al., 2022; Jukes et al., 2016; Liu et al., 2022; Martin et al., 2020; Mendenhall et al., 2017). This is particularly true for those learning online in refugee settings (Halkic & Arnold, 2019). Salmon (2011) advocates that learners receive support in all "phases" of the online course: the access and motivation phase, online socialization phase, information exchange phase, knowledge construction phase, and review phase.[4] The kind of supports will vary according to these phases; thus, distance instructors will have to be adept at knowing what supports to provide (emotional, social, academic), as well as when, why, and how. These supports will be examined through three distinct lenses in the next three chapters.

Although this notion of supporting and interacting with distance learners (again, in this guide that means teachers) has gained more traction in the international education development community specifically, and in teacher education more broadly, it is often not the norm in many established distance learning environments. This omission may be driven by cost or by the preference for asynchronous over synchronous or bichronous online courses (because of costs, time zone differences, and the absence of an instructor). It may result from a type of do-it-yourself ethos regarding adult learners. Or the distance instructor may not be provided with dedicated time to provide follow-up support. Some programs and platforms (such as MOOCs) have explored the use of Frequently Asked Questions (FAQs), videos or chatbots to provide at least some modicum of support (Lowenthal et al., 2018).

13.2.7 Same Aptitudes and Dispositions as Online Learners

Finally, distance instructors need many of the same aptitudes and dispositions that their online learners need. They must exhibit skills of self-direction and time management that enhance their efficacy as online instructors. They must understand the importance of, and be willing to provide, active facilitation and technology-mediated support; and they must be highly self-regulated so they are not just responsive instructors but proactive ones (Akyol & Garrison, 2011; Baker, 2010; Barbour, 2014; Bawa, 2016; DiPietro et al., 2010).

[4] "Phase" is the term used, though online courses don't necessarily proceed in the stepwise fashion this term suggests.

13.3 Standards for Online Teaching

Chapter 8 emphasizes the importance of good teaching and Chapter 9 the criticality of quality professional development. For these reasons, all distance education programs must make sure to develop *minimum competency standards* for distance instructors to guide the training and support they receive, so that these distance instructors can in turn provide the high-quality instruction, outlined in Chapter 10, to future and present teachers.

Figure 13.3
Standards for Online Teaching

National and international standards confirm the importance of quality online instruction. Though they typically share commonalities, each set of standards may put forth its own determination of what constitutes effective online instruction. Readers wishing to develop standards for their online programs have an abundance of exemplars to choose from, as the following sample suggests:

1. The Abu Dhabi Centre for Vocational Education and Training Virtual Teaching Standard
2. The European Union's Digital Competence Framework for Citizens
3. The International Association for K-12 Online Learning (now the Aurora Institute) National Standards for Quality Online Teaching (United States)
4. International Society for Technology in Education's Standards: Educators (US and international)
5. The Inter-agency Network for Education in Emergencies Minimum Standards Handbook (2012) concentrates primarily on in-person education with some focus on distance education (refugee and education in emergencies).
6. The United Kingdom's Teaching Excellence Framework
7. UNESCO's ICT Competency Framework for Teachers, mentioned previously in this guide, focuses on technology skills writ large (international).

For those establishing teacher-facing online programs, two sets of standards may be particularly helpful.

1. The Teacher Educator Technology Competencies (TETCs) reflects the recommendation of the 2017 U.S. National Educational Technology Plan to establish a common set of technology competencies specifically for teacher educators who prepare teacher candidates to teach with technology. The TETCs define 12 competencies (knowledge, skills, and attitudes) required of all teacher educators in order to support teacher candidates as they prepare to become technology-using teachers (American Association of Colleges of Education, 2022).
2. The National Standards for Quality Online Teaching provides the online and blended learning education community with an updated set of openly licensed standards to help evaluate and improve online teaching. These standards are accompanied by indicators and examples and are organized into the following eight standard categories:

   Standard A. Professional Responsibilities
   Standard B. Digital Pedagogy
   Standard C. Community Building
   Standard D. Learner Engagement
   Standard E. Digital Citizenship
   Standard F. Diverse Instruction
   Standard G. Assessment and Measurement
   Standard H. Instructional Design

(Quality Matters, Virtual Learning Leadership Alliance, and Digital Learning Collaborative, 2022)

There are any number of standards for quality online instruction that distance education programs can adapt or modify, as Figure 13.3 outlines. These standards frame and guide the particular skills that distance instructors should embody (United Nationals Educational, Scientific and Cultural Organization, 2018). While they all differ, these standards generally emphasize the following online instructor competencies: learning how to teach in the particular mode of distance education; differentiating instruction and support to learners according to their needs, skills, and professional context; becoming conversant with online instructional teaching standards; creating quality assessments that capitalize on the benefits of the particular technology; and grading and administrative procedures, particularly within an LMS.

13.4 Learning to Teach Online: How Are Online Instructors and Teachers Prepared?

Despite the presence of multiple versions of online teaching standards and the documented skills instructors need in order to teach well via distance—particularly online—distance learning programs have often struggled to find instructors who know how to adapt the instructional practices and pedagogical techniques used in face-to-face settings to an online environment (Barbour, 2014). This situation arises from two prevalent practices.

First, distance instructors are often recruited from face-to-face settings. Being a good *in-person* instructor, however, does not mean one will be a good online instructor (Blomeyer, 2007, as cited in Barbour, 2014). In fact, research suggests it can be an impediment, particularly if online instructors have a low level of understanding of the way online learners learn. Even if these instructors are adept at teaching *with* technology it does not mean they are equally facile teaching *via* technology (Burns, 2021). Faculty may be invited to teach or design online courses, with minimal or no exposure to the pedagogical aspects of online environments. They may work under the erroneous assumption that what works for in-person learning will always work equally well online (Bawa, 2016; Lowenthal et al., 2018; Reid & Kleinhenz, 2015).

Second, as will be discussed at length below, most distance education instructors across the globe have been given little or no preparation in the distance mode in which they will be teaching—synchronous webinars, bichronous LMS, MOOCs, or virtual school-based courses, particularly in the "signature pedagogies" associated with each[5] (Myung et al., 2020; Barbour, 2014; Shulman, 2005). Interactive audio instruction (IAI) and instructional television programs, discussed in Chapters 2 and 3, often provide teaching guides at least, and in-person teacher professional development is a salient element of the IAI approach.

The biggest omission in terms of instructor preparation appears to occur with online learning both for online instructors teaching pre-service and in-service teachers and online teachers instructing primary and secondary age students. This omission is further complicated by the lack of data collection and record keeping on the preparation of online instructors and online teachers. That lack of preparation—and its attendant data gap—are the focus of this section.

13.4.1 Brick-and-Mortar Pre-Service Programs

During the COVID-19 pandemic school lockdowns, university instructors and teachers across the globe experienced a baptism of fire in learning to teach online (Anand & Lall, 2021; Burns, 2020; Burns, in press; Pota et al., 2021). The exact number of university instructors and teachers who *were* prepared to teach online prior to the 2020 COVID-19 pandemic is unknown (Archambault et

[5] See *Chapter 10: Instruction* for a discussion of signature pedagogies.

al., 2016). Even within wealthy contexts, such as the United States, where technology standards have long exhorted online teaching preparation, this "data gap" regarding the preparation and professional development of online instructors persists (Archambault et al., 2016; Barbour, 2014; Dawson & Dana, 2018; Lowenthal et al., 2018). To wit: The National Council on Teacher Quality, a think tank that evaluates American teacher preparation programs, does not collect data related to online education (Koenig, 2020).

Data that do exist, also from the United States, suggest that preparation to teach online is minimal (Archambault et al., 2016; Barbour, 2014). Garrett et al. (2021) state that prior to spring 2020, 54% of 338 four-year public universities surveyed offered faculty development in online teaching, 59% in online course design, 64% in LMS/technology training, and 55% in quality assurance for online learning. While these percentages seem impressive, these were all optional courses, and the percentages listed here do not mean instructors actually took part in them—just that these courses were offered. Since then, and since the COVID-19 pandemic, numbers have increased among this sample of 338 institutions of higher education with 63% of public two-year institutions, 36% of four-year public universities, and 56% of private four-year universities now *requiring* training in online teaching (Garrett et al., 2021, p. 42).

However, the above data refer to a tiny subset of U.S. universities. While the upward trend in preparing instructors to teach online in these institutions is salutary, it is not clear whether or not this small sample of higher education institutions is representative or unique.

Other research suggests that educational institutions have been remiss in preparing instructors to teach online; rather, their emphasis has been on rapidly developing and deploying online courses "to increase enrollment, versus creat(ing) a body of well-trained faculty to boost retention" (Bawa, 2016, p. 6; Lowenthal et al., 2018). This is unfortunate because, as Chapter 8 emphasizes, good teachers are critical for student achievement—and as the next chapter will discuss, learner success in online courses is linked to their perceptions of the quality of online instructors. These interactions may have a much larger effect on satisfaction and perceived learning than interaction with peers (Reupert et al., 2009; Shea et al., 2004; Swan, 2006).

In terms of preparing *pre-service teachers* how to teach online, Archambault et al. (2016) report that only 1%-2% of brick-and-mortar higher education institutions do so.

13.4.2 Fully Online Universities

We might surmise that this lack of preparation to teach online would be completely different in fully online pre-service teacher education programs, though this is a pool that is quite small. In the U.S., only 4.9% of all fulltime online tertiary students major in education (2015–2016 data) (National Center for Education Statistics, 2019, p. 52).

There have been a number of early pioneers in the development of online teacher education programs—Iowa State University, the University of Florida, University of Virginia, and Graceland University are examples. Yet the data gap persists here as well. Most *fully online* teacher education programs that prepare teacher candidates *online* prepare them to teach in *brick-and-mortar schools*; thus the degree to which these online teaching candidates learn how to teach online is unknown (Koenig, 2020). Additionally, the degree to which these *online instructors* of *online* pre-service teachers in these *online institutions* are prepared and certified to *teach online* is also unknown (Archambault & Kennedy, 2018; Lowenthal et al., 2018).

13.4.3 Virtual Schools

As we've seen thus far, most in-person and online teacher preparation programs focus, not on preparing pre-service teachers to teach in online environments, but in brick-and-mortar ones. Further, data are unclear on what percentage

of pre-service teacher programs prepare candidates to teach students (children and adolescents) *online*—though we do know the total has traditionally been very low (Archambault et al., 2016; Barbour, 2014; Dawley et al., 2010).

Not every teacher who matriculates through an online university or who takes a course in online teaching will end up teaching online—or even want to. Yet in places like the United States, where the number of "virtual schools" has increased dramatically from pre-COVID-19 pandemic levels, so too has the number of full time online teachers in these online or virtual schools (Diliberti & Schwartz, 2021) (For a fuller understanding of online or virtual schools, see Figure 13.4.). This growth should at the very least focus greater awareness on the percentage of virtual school teachers who have been prepared to teach online.

However, as with the preparation of online instructors, exact data on the number of *virtual school teachers* prepared to teach students online are hard to come by (Koenig, 2020; Dikkers, 2018). Most U.S. states thus far have *not* required a separate credential for these online teachers, even though many are full-time teachers whose online schools receive government funding.

Further complicating this poor accounting is the highly decentralized nature of the U.S. education system and the heterogeneity of virtual schools, as seen in Figure 13.4. Requirements for certification to teach online vary by each of the 50 states and even by individual virtual schools. Layered onto this complexity is the fact that each state or district may regulate its virtual schools differently depending on the *type* of virtual school (e.g., religious, independent, state public, charter, for-profit, not for profit, etc.) (Digital Learning Collaborative, 2020).

Data that exist suggest that a majority of *virtual school teachers* in the United States report feeling "undertrained" in online instruction when they begin teaching online (Berry, 2017, p. 37). In a 2010 survey of 830 American teachers teaching in a variety of online programs (from fulltime to supplemental) only 25% of "brand new online teachers" reported receiving some college or university training at all to teach online (Dawley et al., 2010).

Figure 13.4
Types of Kindergarten–Grade 12 Virtual Schools

Virtual schools are online primary and secondary schools (mainly the latter). Although there are a few in Australia and Canada, virtual schools are a uniquely American phenomenon (Berry, 2017). Depending on where they live in the U.S., primary and (mainly) secondary students can receive their entire education online or use platforms to support learning in their physical classrooms (Digital Learning Collaborative, 2020). The most common models of virtual schools include the following:

- **Statewide supplemental programs.** Students take individual courses but are enrolled in a physical school or cyber school within the state. These programs are authorized by the state and overseen by state education governing agencies.
- **District-level supplemental programs.** These are generally operated by autonomous districts and typically are not tracked by state agencies.
- **Single-district cyber schools.** These provide an alternative to the traditional face-to-face school environment and are offered by individual districts for students within that district.
- **Multi-district cyber schools.** This represents the largest growth sector in primary and secondary online learning. They are operated within individual school districts but enroll students from other school districts within the state.
- **Cyber charters.** These are chartered within a single district but can draw students from across the state. In many cases they are connected in some way to commercial curriculum providers (Berry, 2017, pp. 24–25).

The online teacher is usually the teacher of record and may teach in one or several of these models.

Despite the limited data on preparation for online teachers in virtual schools, there is some

evidence that many of these virtual schools are progressively attempting to formally prepare their own instructors—at least during some point in their online teaching career. The same 2010 study reported that the percentage of new teachers with no preparation to teach online decreased to 12% after five years of online teaching while 43% of virtual school teachers with 6-10 years' experience reported preparation in teaching online. Ninety-four percent of teachers surveyed reported receiving professional development in online instruction from their school or organization versus 30% who received preparation from universities (Dawley et al., 2010). While these data are more than a decade old, they at least suggest that there is greater awareness of the importance of formal instruction in online teaching.

A number of virtual schools and state offices of education—in Florida, Iowa, Michigan, and Georgia, states with well-established virtual school systems—have increasingly required virtual school teachers to complete some kind of online training and professional development prior to teaching online, sometimes through the school itself (Barbour, 2014). For example, in order to be considered for adjunct instructor positions, incoming teachers at the Georgia Virtual School must successfully complete the school's *Effective Online Teaching* program—a 20–40-hour online program (depending on prior experience) (Georgia Virtual Learning, 2022). Florida Virtual School (FLVS) prepares online instructors and offers continuous professional development to online teachers. FLVS has contracted with Florida universities to provide instruction in online learning to potential FLVS instructors, to supervise FLVS instructors as they complete an internship teaching their first online class, and to mentor first-year online teachers (Winder & Odom, 2022).

Texas Virtual School Network (TXVSN) requires state-level teacher certification in the content area and grade level of the course, and TXVSN teachers are trained in best practices in delivering online instruction (Texas Education Agency, 2022). The Virtual High School Global Consortium requires all prospective teachers to complete an online course in online pedagogy and all potential course developers to complete an online course in online course design (Barbour, 2014).

13.4.4 Donor-Funded Educational Programs

Within donor-funded international education programs, the degree to which implementing agencies prepare online instructors is also unclear. The author's experience suggests that such preparation is almost non-existent, but there are no data to substantiate or refute such a claim.

One exception was Indonesia's USAID-funded, EDC-implemented Decentralizing Basic Education 2 (2005–2011) school-based coaching program. Online instructors participated in online learning over a two-month period as *learners* and then received a two-week face-to-face orientation in online instruction. Instructors worked with a teaching partner, supporting one another, and were mentored by a certified online instructor as they began their own online teaching experience. Also within Indonesia, EDC prepared a number of university faculty in online instruction and course design from teacher training colleges across the country through EDC's *EdTech Leaders Online* program. In the nation of Georgia, the Millennium Challenge Corporation-funded, IREX[6]-administered Training Educators for Excellence project used a mainly face-to-face multi-day workshop to prepare the Ministry of Education and Science's Teacher Professional Development Center (TPDC) staff to be online instructors.

13.4.5 Online Teaching Practica

Clinical field experiences or teacher "practica" (where teacher candidates try, often for the first time, to put into practice all they have learned in an attempt to teach a group of students) are

[6] IREX is the International Research & Exchanges Board.

the cornerstone of traditional teacher education programs. As with a brick-and-mortar classroom for a future *in-person* teacher, the authentic learning environment to prepare a teacher for a *virtual* environment should be an *online* setting. This virtual apprenticeship should occur with the cooperation of an expert online teacher who is able to make explicit the strategies, techniques, and approaches to teaching (Archambault & Kennedy, 2018, p. 227).

Yet, Archimbault et al. (2016) report that only 4% of all U.S. teacher education programs surveyed (online and in-person)—a total of 15 in all[7]—offer an *online practicum* to teach online. These experiences range in length from 4 to 16 weeks and require students to complete activities such as teaching synchronous lessons, providing feedback, and participating in discussion forums. Again, these programs also tended to be concentrated in U.S. states with a strong virtual school presence—Florida, Iowa, Georgia, and Michigan.

Even *fully online* teacher education programs that prepare teacher candidates *online* place pre-service teachers in brick-and-mortar schools for their teaching practicum (Koenig, 2020). As one example, Hibernia College in Ireland, a popular online alternative for those wishing to become teachers, offers their online teacher candidates in-person practica in brick-and-mortar schools exclusively (Burns, in press).

Changes are afoot, albeit slowly. In many contexts, the COVID-19 pandemic shifted pre-service teacher practica online. Studies from Egypt and Malaysia, though small, suggest that pre-service candidates who participated in *online* teaching practica had higher degrees of self-efficacy in terms of online teaching and found the online practicum to be more useful and less stressful than a face-to-face practicum—reasons included their own shyness, concerns about their appearance, and classroom management issues. These practicing online teachers faced the typical challenges of online learning—issues with their digital skills and their own time management issues (Annamalai et al., 2022; Badawi, 2021; Berry, 2017).

Another study of online micro-teaching as part of teacher preparation at a Czech university, student-teachers reported that the skills gained from teaching face-to-face—classroom management, checking understanding, giving instructions, nonverbal communication, and monitoring students' performance—were not easily transferable to the online environment (Fořtová et al., 2021), further supporting the assertion that teachers and instructors should be prepared in the modality—online, blended or in-person—in which they plan to teach.

The above studies, although small and not rigorous, have helped to generate information on future teachers' perceptions of doing their teaching practica online. However, the larger problem around online instructor preparation persists. Online programs in general have neglected to prepare instructors and teachers to teach online. The lack of accounting—and accountability—of the preparation of instructors in online programs obscure the existence, pervasiveness, and consequences of such an omission.

13.5 Preparing Instructors to Teach Via Distance

There are a number of ways to prepare instructors and teachers to teach online. This section offers several strategies for doing so.

[7] The authors demur: "This is a non-random, purposeful sample used to gather as many responses as possible from teacher education programs across the United States ... it provides an updated snapshot but is not intended to be generalizable across all teacher education programs in the United States" (p. 5).

13.5.1 Prepare Distance Instructors in the Same Distance Modality through Which They Will Teach

Distance education programs can prepare instructors in same type of quality and extensive professional development and support activities in which their teacher-learners will engage. This instruction can be a blended approach, with both distance-based and in-person learning in which instructors practice using the technology, complete learner activities, grade assignments, and summarize discussions. Distance programs can do this by having distance instructors working together and by creating a sandbox in the LMS for purposes of instructor practice or learning.

Such a mode-based instruction offers several benefits in helping instructors to:

- Develop a sense of learning from a learner perspective (Myung et al., 2020)
- Construct the necessary skill set to foster interaction and communication with and between learners during the distance experience
- Use information and communication tools to support instructional methodologies that encourage learner collaboration and knowledge acquisition
- Understand the strengths and limitations of the print-based or digital content instructors create and its effects on learners (Cadorath et al., 2002)
- Be able to use instructor-generated content to teach (Cadorath et al., 2002)

13.5.2 Enroll Instructors in Courses Offered by External Providers

There are a number of free, low-cost, and full cost online teacher pre-service and in-service programs for those wishing to teach online. Many of these are open universities or online universities, for example:

- The UK's Open University, *Open Learn* platform, offers a free online teaching course—*Take Your Teaching Online*.
- The Commonwealth of Learning's *Teacher Education Program* focuses on improving the institutional capacity of teachers in academic and vocational streams to use open and distance learning (ODL) and ICT effectively as well as improving the quality of teaching and learning to ensure positive learning outcomes (Commonwealth of Learning, 2016).
- Canada's open university, Athabasca University, offers courses in online and blended instruction.
- Contact North (Contact Nord), an Ontario-based not-for-profit distance education network, houses an extensive portal of online learning resources and offers free online sessions in every aspect of online learning (Contact North | Contact Nord, n.d.).
- Penn State University's *World Campus* prepares instructors to teach online.
- The University of New South Wales (Australia) *Learning to Teach Online* is a free online program that helps instructors in any discipline learn a range of online instructional pedagogies.
- *Coursera* and *Future Learn* offer free MOOCs for teaching online.
- UNESCO's ICT Competency Framework via OER Commons offers collections of Open Education Resources (OER) curated by UNESCO and partner countries and aligned to the UNESCO ICT Competency Framework for Teachers (CFT) so teachers can use ICTs for more efficient teaching.

In addition to the above free or low-cost university programs, a number of *for-profit* universities have burnished their *bona fides* in offering *degree*s in online teaching. Full Sail University, a private, for-profit, U.S.-based university offers certification in online instruction, as does the fully online, for-profit University of Phoenix. The latter includes several months of training plus an online mentor who works behind the scenes with the novice online instructor.

A number of nonprofits have stepped into the void to provide *in-service* professional development to existing online instructors so they can teach in fully online or hybrid environments. (The online university courses, MOOCs, and

resources listed above also offer both pre-service and in-service instruction in teaching online.) Through such professional development, teachers can receive some kind of certification (but not a formal degree) in online instruction.

Three such in-service programs include the following:

1. The International Society for Technology in Education (ISTE) offers a nine-week, fee-based blended course for online training certification programs. This course includes 30 hours of training followed by six months to curate a portfolio. ISTE also offers *Learning Keeps Going*, a portal of free resources and webinars to teach online, created originally for emergency remote teaching (International Society for Technology in Education, n.d.).
2. The Online Learning Consortium's online preparation programs, for higher education instructors.
3. EDC's *EdTech Leaders Online is* an eight-session program to prepare educators to teach online.

All of these programs are fee-based.

13.5.3 Require Instructors to Take an Online Course

If the previous two recommendations are not feasible, prospective online instructors could enroll in any number of free online courses—on any topic—via a MOOC or online course provider. Future instructors could take notes on how an online instructor (if there is one) acts, document the strengths and weaknesses of the course, jot down specific ideas, generally reflect on what he or she found most conducive for learning online, and even potentially ask the online instructor for tips or guidance. This option allows instructors to experience online learning from a *learner* perspective and experience online learning. Ostensibly, the reflections and ideas gathered from such an experience could help to inform the instructors' own online teaching.

13.5.4 Use Scripted Teaching

Finally, in terms of preparing educators to teach online, some online programs forgo extensive online instructor training in difficult areas, such as online inquiry, collaboration, and discussion, in favor of providing instructors with scripts and prompts that attempt to compensate for their lack of skills or to supplement their existing skills in these areas. This practice may be more relevant to text-based asynchronous online learning courses. Examples of these scripts and prompts include:

- *prompt-based, content-specific scripts* that focus on teaching content to online learners;
- *interaction-oriented scripts* to promote learner discussions and reflection;
- *prompt-based, content-specific scripts* to support the learners' identification of relevant information; and,
- *prompt-based, interaction-oriented scripts* to encourage learners to assume specific inquiry-related tasks and roles (Clark et al., 2003, p. 61).

The research on scripted online teaching is fairly weak—neither plentiful, current, rigorous, or focused on the performance of the online instructor (Means et al., 2009; Weinberger et al., 2010). It pales greatly in quantity and quality with studies on scripted lessons in distance education modalities such as print and radio, which have been shown to play a positive role in the quality of learning interactions (Gray-Lobe et al., 2022; Morris et al., 2015; Piper et al., 2018).The majority of studies that do exist on scripted online teaching indicate that the presence of scripts to guide interactions among online learners do *not* appear to improve learning outcomes (Means et al., 2009, p. 46).

Less constrained than scripts, but potentially helpful for online instructors—particularly novice ones or those with limited preparation—are protocols, which will be discussed in greater length in *Chapter 15: Building Community*. Protocols are scripts or a set of prescribed steps or prompts to structure focused, intentional, and deliberative conversations. They can help

routinize and structure instruction, as well as help online instructors deal with challenges associated with online learning, such as learner non-participation. They also offer a level of quality instruction that is reassuring to both the instructor and the learner (McDonald et al., 2015). Here, too, however, the research on protocols as part of online teaching is scant.

13.6 Conclusion

Good teaching matters. It may matter even more online.

In order for distance education programs to prepare or upgrade the knowledge and skills of learners successfully, distance instructors require rigorous professional development in the distance education modality in which they will be teaching.

Distance learning institutions should adopt or develop standards for teaching in an online environment (see Figure 13.1), and online instructors must exhibit qualifications that conform to these standards. They should possess *technology skills*, including the ability to use synchronous and asynchronous tools such as discussion boards, chat tools, and digital whiteboards. They must be able to *promote interaction between instructors and learners* and demonstrate strategies to encourage active learning, interaction, participation, and collaboration in the online environment. They should know how to *provide regular feedback*, prompt responses, and provide clear expectations to learners. They should be able to *design and deliver online assessments* that are not only valid and reliable but also complex enough to assess learner knowledge beyond a multiple-choice exam. Similarly, administrators of distance learning programs also require professional development and support so that they are cognizant of the instructional changes and requisite inputs (standards, good instruction, robust design), resources, and supports that fully sustain any distance education system.

Underlying this entire process are three challenges. The first is the need to continue to develop new paradigms of distance education, as discussed in Chapter 7, that shift from passive and solo learning in which materials are placed online and learners fend for themselves. Distance education must embrace the learning sciences and research on high-quality professional development and how adults learn.

Next, teaching at a teacher training college or university program—whether online or face-to-face—is often a solo endeavor where instructors/teacher educators receive little professional development, support, and oversight (Hökkä & Eteläpelto, 2014). These omissions denigrate not just the quality of instruction pre-service and in-service teachers receive, they also undermine the "development of teacher training colleges as high-quality professional institutions" (Du Plessis & Muzaffar, 2010, p. ix).

The final challenge far exceeds the lack of preparation to teach online. Many university instructors and teacher educators often lack teaching degrees and have not been formally prepared to teach at all (Burns, in press; Reid & Kleinhenz, 2015). Nor have they ever taught in a preschool, primary school, or secondary school classroom. The negative implications of this failure to require those preparing future teachers—and training current ones—to have actual experience teaching children and adolescents goes well beyond the ability to teach online. It charges those who have only a theoretical knowledge of teaching with inculcating the practical skills needed to teach. This mismatch adversely affects not just the fields of distance education or teacher education; it negatively impacts the quality of classroom teaching itself (Hökkä & Eteläpelto, 2014).

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