DISTANCE EDUCATION FOR TEACHER TRAINING:
Modes, Models, and Methods

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## Section I. Chapter 3

VISUALLY-BASED DISTANCE EDUCATION

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Television and video possess numerous strengths as modes of teacher education.

3.1 Overview

Seeing is believing; seeing is understanding; and seeing is learning.

Teachers benefit when they observe other teachers successfully implement an innovation with the same types of learners and the same local context that they themselves face. Seeing other teachers in action offers credibility, whether in person or via television or video.

Television and video possess numerous strengths as modes of teacher education. Like radio, television is a mass communication medium with extensive reach. Both TV and video also are available via the Internet or cellular networks on phones, tablets, and laptops. Television, especially, is a technology with which most teachers are familiar, thus requiring little training, and programs can be recorded and rebroadcast to teachers at their convenience. If informative and engaging, television and video can furnish examples of classroom-based teacher-student interactions, thus enabling teachers to observe the management of learning activities. As this chapter will discuss, visually-based—or, more accurately, audio visually based distance education—is a powerful form of teacher learning, whether transmitted on a disc, via a phone or the Internet, or broadcast over the airwaves. It can help teachers master the content they are supposed to teach but may not know, guide implementation, spark ideas, increase teacher understanding of difficult-to-explain procedures or processes, and model techniques and strategies that are difficult to present in either print or via radio. Like audio, which was discussed in the previous chapter, visually-based learning can do so in just-in-time ways that increase engagement and reduce cognitive load.¹

This chapter focuses on models of visually-based distance education for teachers. These include analog and digital video and broadcast media such as instructional and educational television—and their potential role in teacher learning. It also includes discussions of forms of television not normally considered as having value for teacher education—closed-circuit television and popular television programming.

3.2 Television

Television has tremendous reach and enjoys the advantage of being a familiar and engaging visual medium. Approximately 74% of the world’s households have access to television. Though free-to-air digital terrestrial TV (FTA DTT) is still the most common access point, all forms of television viewership continue to grow² (Statista, 2022).

¹See Chapters 1 and 11 for more information on cognitive load.
²This is a calculated percentage: number of TV households divided by total number of households. “Television” encompasses numerous options: analog cable TV, digital cable TV, Internet pay TV, pay satellite, free-to-air (FTA) satellite, FTA Digital Terrestrial Television (DTT), pay DTT, analog terrestrial, and pay TV subscriptions (Eutelsat, n.d.).
Television programming and consumption have changed dramatically over the past several decades. A new generation of cloud-supported and software-defined TV means that the “television experience” is less time- and place-based, more platform-varied, personalized, and increasingly a shared social experience as streaming services, Internet Protocol TV, and video sharing sites such as YouTube and Vimeo have thrived and been integrated with other forms of social media. Some television programs have even been released as an app. Thus, TV and video-based viewing options are increasingly accessible on demand, more differentiated, and also more fragmented.

Once a decades-long staple of distance education, TV for teacher education has waned as it has been replaced by video-based or online learning. That said, countries with high rates of TV ownership, educational television production capabilities, and regions with poor Internet infrastructure may find earlier iterations of television-based distance education and current untapped television programming to be potentially relevant options for teacher education.

### 3.3 TV as School

Despite its historical use as a teacher education tool, the primary audience for television in education has traditionally been students—most recently during COVID-19 pandemic school lockdowns, as Figure 3.1 discusses. The following sections examine instructional and educational television for student learning and its indirect impact on teachers. The section then pivots to an
examination of television geared explicitly toward teacher learning.

3.3.1 Instructional Television

*Instructional* television refers to broadcasts that simulate an instructional experience with TV “lessons,” where a televised instructor or narrator demonstrates procedures or explains concepts. Often referred to as “EduTV,” “television school,” “teleschools,” or “one-way television,” instructional television has traditionally been used to substitute for in-person teachers and ensure educational quality in rural, marginalized areas lacking teachers or qualified teachers (Unwin & McAleese, 1988, as cited in Fabregas, 2019). Countries such as Egypt, Ghana, Turkey, and Pakistan currently use instructional TV—typically satellite-based—to provide direct teaching to students. Some of the most well-established instructional TV programs are India’s EduSAT program, México’s *Telesecundaria* program, and Brazil’s *Meu Professor na Televisão* (My Teacher on TV). Other nations, like South Africa, leverage the Internet to ensure equitable access to learning for disadvantaged communities, often broadcasting instructional television programming directly into classrooms via its *Learning Tube*. Lessons are aligned to the curriculum, shared in small increments (15–30 minutes) throughout the school day, and typically are followed by in-class small-group and individual work, questions and answers, or discussion.

Instructional TV lessons follow the national curriculum, are designed by pedagogical experts, and are typically recorded in a television studio by highly qualified “TV teachers.” The TV teacher is traditionally the main teacher or teacher of record; his/her lessons may be live or pre-recorded, and considerable effort is made to ensure high-quality production. Though more often than not they lack expertise in content or are not formally qualified to teach, in-class teachers—“monitors” or “supervisory teachers”—are a critical component of any instructional television initiative. They support and supervise students in their learning, help students follow the pace of the TV programming, answer students’ questions, and grade homework and exams. In many instructional TV initiatives, they are trained to successfully carry out such tasks (Borgheson & Vasey, 2021). They also follow a print-based instructional guide with teaching suggestions for each subject and may lead question-and-answer sessions, engage students in group activities, or assign individual student learning activities.

Not all data on these instructional television models show success. For example, India’s EduSAT data show mixed results and, as of this writing, there are no empirical data on Brazil’s *My Teacher on TV* (Phalachandra, 2007; Cruz et al., 2016). The most extensive, longitudinal, and rigorous data on instructional TV originate mainly from México, which established its *Telesecundarias* (TV secondary schools) in 1968 and has reached millions of students.

Data on instructional TV programs from México suggest that instructional television offers several important benefits. For example, it can:

- increase student test scores in math, science, and language compared to students who attend non-*Telesecundaria* government schools (Beg et al., 2019; Borgheson & Vasey, 2021, p. 4);
- significantly increase school attendance and expand educational access to students who have dropped out of school (Cruz et al., 2016, p. 10; Plata, 2022); and

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3 México’s *telesecundaria* model has since been adopted in Guatemala, Honduras, Panamá, El Salvador, Costa Rica, Venezuela, Colombia, and Perú.

4 This is broadcast in the state of Amazonas, an area larger than France.

5 This is broadcast via the educational channel of the South Africa Broadcasting Corporation (SABC) and over YouTube.

6 Data from Pakistan and Brazil echo this particular finding.
• improve students’ educational attainment and future income earnings (Cruz et al., 2016; Fabregas, 2019, p. 15; Navarro-Sola, 2021, p. 2).

3.3.2 Educational Television
The most powerful educational benefits of television are derived from children’s educational programming. Educational television refers to (primarily) noncommercial television content that broadcasts programming for the purposes of educating or enriching viewers’ understanding of a particular topic. While it may be used directly in class, educational TV is often accessed in children’s homes, typically supplements the formal curriculum, and often is accompanied by other digital and analog media. When directed at younger learners, it often incorporates commercial television design, such as cartoons, animation, music, dance, stories, play, colorful effects, and engaging characters. Many programs, such as the Lao People’s Democratic Republic’s (Lao PDR) *My House*, for example, include sign language interpretation (Karakaya, 2022).

The U.S.-based Public Broadcasting Service (PBS), the British Broadcasting Corporation (BBC), and the Australian Broadcasting Corporation (ABC) have long produced and transmitted a range of educational programs for the public in general, as well as curriculum-based television directed at young learners. Indeed, three of the longest running TV series across the globe are educational television programs for children—*Sesame Street* (U.S.), *Play School* (Australia), and *Blue Peter* (U.K.).

Globally, popular educational television for children has increasingly taken hold in the Global South, with programs such as Pakistan’s *Taleem Ghar,* the aforementioned Lao PDR’s *My House,* and Tanzania’s *Ubongo Kids* and *Akili and Me* joining long-running international variations of *Sesame Street* (Burns, 2021). The impact of these programs on children’s learning has been extensively documented. For example, a synthesis of 24 studies of over 10,000 children in 15 countries, along with randomized controlled trials (RCTs) and quasi-randomized control studies in Tanzania, point to significant positive effects of exposure to children’s educational programming such as *Sesame Street,* *Ubongo Kids,* and *Akili and Me* on children’s:

• numeracy and literacy abilities (Borzekowski, 2018; Mares & Pan, 2013; Watson, 2019);
• drawing skills, shape knowledge, number recognition, counting, and English skills, often within weeks (Borzekowski, 2018, p. 57); and,
• learning about the world, including health and safety knowledge, and social reasoning and attitudes toward out-groups (Borzekowski, 2018; Mares & Pan, 2013).

3.3.3 Benefits for Students. Benefits for Teachers?
Both instructional and educational television have been an educational lifesaver for many students, and an enhancement for others. They provide high-quality—and, in the case of educational TV, multimodal and engaging—instruction, as well as furnishing a degree of educational access and continuity (Wang, 2000). They also have been shown to reduce the effects of teacher absenteeism, a lack of preparation, and limited proficiency in content areas (Fabregas, 2019). Research on México’s *teleescundarias* show that rural students spend less time unsupervised and more time exposed to educational content in television schools than they most likely would in comparable brick-and-mortar schools (Borgheson & Vasey, 2021, p. 43). Instructional television appears to be most effective when it constantly updates content and ensures rigorous

7 By way of comparison, in Indonesia, the expansion of primary schools increased years of education for men by an additional 0.19 per school constructed for 1000 children (Duflo, 2001, as cited in Fabregas, 2019).
8 Developed by the Government of the Pakistani state of Punjab.
9 These countries included Australia, Bangladesh, Canada, Egypt, India, Indonesia, Israel and Palestine, Kosovo, México, Nigeria, Northern Ireland, South Africa, Tanzania, and Turkey.
mechanisms of control of the quality of learning and of students’ assessment (Barros, 2012).

However, the impact of instructional and educational television on teacher performance has received far less empirical attention and thus remains unclear. With the exception of Portugal (discussed in the next section), there is almost no explicit evidence documenting the use of student-facing television programs to simultaneously prepare untrained, in-class teachers as they educate students. Hypothetically, if in-class monitors (as in Brazil and México) and untrained teachers (Pakistan and India) paid attention to programming, they should also improve both content knowledge and awareness of teaching strategies. Their access to uniformly high-quality lectures, highly scaffolded teaching support, teaching materials and student learning guides, could ostensibly result in increased teacher confidence and possibly efficacy, particularly in low-resource environments.

Yet none of the effects of instructional TV’s four main elements—the TV instructor, the in-class teacher (or monitor), the teaching guide for the in-class teacher, and the reference text (textbook)—has been analyzed separately even where there is research on instructional TV. Nor, apart from some basic professional development for Telesecundaria monitors, does there appear to be a concerted or sustained effort to develop the skills of the in-class teacher. The television–related teacher professional development that does exist often appears to be focused on mechanics—teaching teachers how to use the television, follow the in-class teaching guide, and become familiar with program scheduling (Beg et al., 2019; Cruz et al., 2016; Navarro-Sola, 2021; Phalachandra, 2007).

Nonetheless, there is reason to believe greater focus on teacher learning in instructional and educational television initiatives could help address teacher quality issues. First, the examples of interactive audio instruction, Computer Aided Instruction, and virtual classes10 affirm that efforts that use technology to complement and support teachers tend to have better outcomes than those that use technology to replace teachers and that such initiatives can improve teacher learning as they support student learning (Beg et al., 2019; Snistveit et al., 2015).

Second, evidence-based research on instructional TV from Pakistan’s Punjab province points to the importance of engaging existing teachers, even when poorly prepared, with instructional TV. In one model, students accessed TV lessons via two treatment arms. One group accessed instructional TV and video programming individually and independently via tablets; the other via lessons delivered over a TV screen with some in-class teacher involvement. Students who accessed lessons on tablets experienced decreased math and science scores versus those with television access accompanied by a teacher (Beg et al., 2019). These results confirm findings on educational television suggesting that children can learn more when viewing TV with adults (Linebarger & Walker, 2005, as cited in Peñuel et al., 2009).

Finally, the example of the U.S. Corporation for Public Broadcasting’s Ready to Learn (RTL) Initiative points to the importance of deliberately building the skills of teachers to augment the learning effects of educational programming. RTL is a multi-year intervention that employs educational television programming in concert with digital media to help preschoolers learn foundational literacy skills—naming letters, recognizing the sounds associated with those letters, and understanding basic concepts about stories and print (Peñuel et al., 2009, p. i).

RTL also provides professional development and coaching for preschool teachers to help them both deliver the curriculum and co-teach with the TV programming. This includes helping the

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10 See chapters 2, 4 and 5 of this guide.
teacher learn to: engage children in active viewing of segments and episodes through whole-group and small-group instruction; introduce key skills modelled in the programming; pause the video to encourage active processing and reflection through questioning techniques; and carry out post-viewing activities (Peñuel et al., 2009, p. 5). Research on the impacts of the RTL Initiative attributes its positive effects to integrating the media-rich curriculum with professional development for teachers. In particular, researchers noted that ongoing coaching of the early childhood educators was “critical” to the initiative’s success (Peñuel et al., 2009, p. 15).

Thus, given the importance of quality teachers to student learning as discussed in Chapter 8 and given fact that many teachers across the globe often score lower than their students in tests of basic skills (Beg et al., 2019; Bold et al., 2017; United Nations Educational, Scientific and Cultural Organization, Institute for Statistics, 2016), this lack of attention to teacher learning in contexts that use instructional and educational television may constitute a missed learning opportunity—for the larger distance education research community, distance educators, and teachers themselves.

The next section turns to television focused explicitly on teacher training.

3.4 Television-based Teacher Education

For decades, television was a popular mode of teacher training in countries with well-developed broadcasting or satellite infrastructure (e.g., Cuba and the United Kingdom), that cover a large geographical expanse (Canada, Australia, China, México, Brazil, and the United States), and whose large or dense populations make television a cost-effective distance education model for teacher training (India and the United Kingdom). Globally, Canada, China, Indonesia, México, and Brazil all spearheaded the use of television for teacher pre-service and in-service instruction. As a result, teachers in those countries have long participated in television-based professional development in their homes or classrooms, or, in areas where television is not widely available, in viewing centers. While shifts to online learning, the rise of Internet-based TV, and high production costs associated with television have rendered it somewhat anachronistic as a distance education tool for teachers in many parts of the globe, in others it may still play a vital role in teacher education, as shown in the following examples.

3.4.1 Instructional Television for Teachers: Portugal

In the 1950s and 1960s, as post-war Europe moved to both rebuild its education system and expand access to secondary education, countries such as France, Great Britain, Portugal, Italy, and Romania experimented with televised schools or “teleschools” (Unwin & McAleese, 1988, as cited in Fabregas, 2019). From 1967–2003, as Portugal expanded access to secondary education, it initiated the use of television schools or telescolas with two goals in mind.

The first was to furnish continuing educational access to students in rural and remote regions, standardizing the quality of that access. Though there is limited research on this effort, the program reached 60,000 students annually at its peak, and the majority of students who finished telescola had better grades than those from traditional schools (Barros, 2012).

But telescola’s second larger aim was to create a pipeline for qualified secondary teachers. Each year, approximately 2,500 in-class teachers (“monitores”) received professional development in content, instruction, and classroom management as well as mentoring from “ex cathedra” teachers (TV teachers) in Lisbon as their main path to certification. As monitores received more annual professional development annually, they were incrementally granted more in-class responsibilities. This occurred over a number of years under the guidance and supervision of ex cathedra teachers until these monitores became certified teachers and the
teacher of record in the classroom, thus reducing the need for TV teachers. As Portugal expanded its secondary education system and built a cadre of qualified secondary teachers, the number of telescolas decreased and the program eventually ended in 2003 (Barros, 2012).

The telescola model—structured knowledge transfer and training via technology from expert distance teachers to in-class teachers—has been used in other distance modalities, notably in "virtual classes," which will be discussed in Chapter 5.

### 3.4.2 Teacher-Pre-Service Preparation: China

Perhaps no country has capitalized more on the potential of television for teacher training than China. The country first turned to education as a mechanism to promote economic growth. The 1986 Law on Compulsory Education guaranteed nine years of basic education for all children and catalyzed the demand for more qualified teachers.

The following year China embarked upon a nationwide effort to improve teacher quality at scale. China Television Teachers’ College was established in 1987 to upgrade the skills of the two-thirds of China’s teaching force who had not received appropriate pre-service teacher training. Within 10 years the number of unqualified primary school teachers declined from 39% to 14%, while the number of unqualified secondary school teachers plummeted from 73% to 36%. Over that decade, 710,000 primary school and 550,000 secondary school teachers received diplomas in education through instructional television (Wang, 2000).

Teacher training via television universities was supplemented until approximately 2010 by 100 instructional television channels operating at both the national and regional levels. Until the last decade, China’s TV universities, such as Shanghai Television University and China Central Radio and Television University, were the largest distance education universities in the world. (They have since been transformed into the Shanghai Open University and China Open University, respectively.)

China returned to television teaching during COVID-19 pandemic school closures (See Figure 3.1). To help teachers understand how to use master teaching courseware and conduct online remote teaching more efficiently, professors from Central China Normal University (CCNU) participated in China Educational Television’s live TV program “The Same Class: Help Teachers” to help teachers use technology as part of remote learning (Central China Normal University, 2020). The program also was webcast.

### 3.4.3 Providing Pre-Service Teachers with Access to Particular Content: Saudi Arabia

In Saudi Arabian universities, female students (among them pre-service teachers) outnumber male students, but male instructors outnumber female ones (World Bank, 2022). With the exception of two universities, Saudi government regulations prohibit males and females from taking classes together (Effat University, 2022; King Abdullah University of Science and Technology, n.d.). Therefore, a number of Saudi institutions of higher education have capitalized on Closed Circuit Television (CCTV) to enable male instructors to provide classes to female students. The educational use of CCTV in this case involves video cameras, a wireless system, TV screens, transmitters, smart boards, computers, and microphones. A male instructor in one location teaches female pre-service teachers in another remote room in the same university.

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8 Effat University is a female university that admits men, but classes are segregated by gender (Effat University, 2022). King Abdullah University of Science and Technology (KAUST) allows mixed-gender classes (KAUST, n.d.).
Unlike broadcast TV, a CCTV signal is not openly transmitted (Gawi, 2020).

The current research around educational—versus surveillance—use of CCTV is meager, and the limited research that does exist points to fairly uniform poor practices. Instruction tends to be passive—male lecturers talk, female students listen. Nor are lecturers formally prepared in this medium of instruction (Gawi, 2020). This lack of interaction and preparation to teach via technology has been cited as negatively affecting female students’ learning. One study suggests that teaching via CCTV could be improved by adding video and PowerPoints to lectures (Fathallah, 2007, as cited in Gawi, 2020). Yet, despite its shortcomings, in unique contexts like Saudi Arabia, CCTV is essential to ensuring that female students’ have access to higher education.

3.4.4 Upgrading Teacher Skills via Instructional TV: Brazil
In Brazil, until the mid-2010s, both private and public television channels used educational programming to improve classroom instruction. Telecurso, TV Empresa Brasil de Comunicação’s (TV EBC) Salto para o futuro, and Canal Futura’s A-Plus Salto provided pre- and in-service professional development to approximately 200,000 teachers—though results on their effectiveness are mixed. Programming for Salto para o futuro is still archived on TV EBC.¹²

3.4.5 TV for Classroom-based Professional Development: The United States
The Public Broadcasting Service (PBS) has long been at the forefront of instructional,¹³ as well as educational, television in the U.S. 1987 marked the debut of French in Action—a 52-episode French-language immersion program co-produced by Yale University and the PBS station WGBH. The program used a planned immersion approach to language learning—viewers were exposed to authentic French language and culture through a continuing storyline—an American university student abroad in Paris who is befriended by young French woman. The story was embedded with targeted grammar points, vocabulary, and culture, often in a humorous way (Annenberg Learner, 2022).

The actors’ spoken language proceeded at a normal pace, but the script was designed to create a logically sequenced approach to teaching the French language. Each storyline concluded with on-air instruction by the series creator, Dr. Pierre Capretz. Because it was so highly structured, French in Action served as a curriculum supplement for students, an instructional aid for teachers, and an in-class professional development resource for beginning teachers. The author, a new and nervous French teacher, recorded French in Action programs on VHS tapes to improve her own French, used the program as a model for teaching French through role play, and integrated the program into her own classroom instruction. Though there has been no research on teacher learning using this instructional television mode, French in Action is still marketed as an aid for both student and teacher learning.

3.4.6 Dual Audience Direct Instruction with TV: Namibia
From December 2004 to June 2005, the Discovery Channel’s Global Education Partnership Learning Center project provided 371 Namibian schools with a satellite dish, enabling teachers to download prerecorded science, history, and geography satellite TV programs and show them to students in a learning center equipped with a television and DVD player.

Each program was accompanied by a printed teacher’s study guide that walked the teacher through the video. The guide included scripts and

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¹² See https://tvbrasil.ebc.com.br/saltoparaofuturo
¹³ See for example, Parlons Français, at https://tinyurl.com/3pbtecyu
pointers for introducing the lesson, told the teacher where to pause the video, offered suggested questions for teachers to ask students, helped the teacher with summarizing techniques, and suggested follow-up activities. Though evaluation data on this program seem to be unavailable, the author observed these classes and interviewed teachers in May, 2005. Teachers reported that they found this form of structured direct instruction helpful. They stated that students were engaged by video-based lessons (the author’s classroom observations confirmed this), that the TV programs helped teachers learn how to deliver the curriculum, that they had learned content they had not previously studied (e.g., hurricanes), and that the printed step-by-step guide structured teaching in a way that gave them confidence.14

3.4.7 Interactive Television: Scottish Western Islands, Indonesia, South Korea, Australia

Interactive TV (ITV), sometimes referred to as “enhanced TV” or “two-way television,” represents the convergence of conventional television with other forms of digital media such as social media or the Internet. It offers learners control over viewing and interacting in virtual educational settings as well as on-demand delivery of content and makes the viewing experience more active than passive.

ITV is not new to distance education. In the 1990s, ITV, or two-way television, was used extensively in rural areas of Australia and the U.S., transmitted from schoolroom to schoolroom, to help pre-service teachers observe teaching behaviors and routines of more experienced teachers. ITV has also traditionally been part of “live telecasts,” i.e., university classes transmitted to learners offsite (Gibson & Gibson, 1995). In 2009, Indonesia’s TV Edukasi began broadcasting 48 hours of weekly programming to pre- and in-service teachers across Indonesia to help them obtain an advanced degree and acquire advanced competencies. The Universitas Terbuka (UT) provided the content and awarded credits to the teachers. Programs were interactive—teachers could phone in and have live on-air, phone-based discussions with the instructor and other viewers.

Interactive TV, transmitted on Interactive Whiteboards and LCD panels, plays a significant role in Scotland’s GLOW program, the triple imperative of which is to provide education to remote and sparsely populated Western islands, support the few in-class teachers who remain in those areas, and preserve the Gaelic language (Kizuka, 2019, p. 19; e-sgoil, n.d.).

South Korea capitalized early on the convergence of Internet and television to offer in-service professional development and continuing education to its teachers via Internet Protocol Television (IPTV) providing multimedia content—such as customized data, texts, graphics, video, and audio—high definition audio and video, two-way communication, and the ability for teachers to create playlists of professional development and education-related programming for viewing at their own convenience (Korean Education Research and Information Service, 2009, p. 12).

Interactive television is primarily Internet based, but even traditional analog, two-way television holds benefits for teacher learning. In Australia, a small study of 60 pre-service teachers in rural schools observed teaching, problem solving, and decision-making of other rural teachers via ITV. Teachers and pre-service teachers then discussed planning and activities. Via self-reported data, the 60 pre-service teachers identified four particular benefits of two-way television: the consolidation of theory into practice; the acquisition of valuable insights into teaching in rural, multi-grade classrooms; the unobtrusive nature of the ITV sessions; and the opportunity for immediate

14 The statements in this paragraph are from the author’s research notes from May 2005 classroom observations and interviews with Namibian teachers in schools in Caprivi.
feedback during the interactive discussion (Gibson & Gibson, 1995, p. 224). Today, this same practice could easily be conducted via videoconferencing, but ITV remains a potential option in areas that have better television reception than Internet access. And, as Figure 3.2 outlines, ITV is primarily geared toward children’s broadcasting, using communication tools that easily could be adapted into TV and video programming for teacher education.

### 3.5 Serialized Television

As discussed thus far, television has played an overtly educational role in teaching both learners and teachers, but these have been specific types of television—instructional and educational programming. This section examines serialized television as a potential vehicle for teacher education.

#### 3.5.1 Popular TV as Teacher?

Though not normally regarded as having educational value (or any value at all), popular TV programming has in fact proved to be a powerful educational vehicle for learning language, adopting certain behaviors, and changing mindsets. Like children’s educational programming, popular TV often has educated viewers while simultaneously entertaining them (Burns, 2017).

Serialized programs, with multiple episodes over months or years, appear particularly adept at this. In Bangladesh, the BBC Janala supernatural detective series, Bishaash, and accompanying educational gameshow, Mojay Mojay Shekha (Learning with Fun), were designed to enable millions of TV viewers to learn English. They formed one element of the British and Bangladeshi government’s English in Action (EIA) initiative, designed to improve the English-language abilities of all Bangladeshis, and the two programs were regularly viewed by 20 million and 18 million people, respectively (Mott MacDonald, n.d.).

México’s version of Sesame Street—Plaza Sésamo—displays a WhatsApp number during broadcasts so parents can request related materials via text that they then can access on their phones (Zacharia, 2020). As will be discussed in Chapters 5 and 6, social media and messaging apps are used extensively for teacher learning and could be integrated, formally and informally, into TV- and video-based professional learning for teachers.
language and attract more and better-qualified candidates to teach Irish, the Irish government turned to television in the mid-1990s. TG Ceathair, a free-to-air public service television network that also is available online and via an on-demand service TG4 Player in Ireland, has helped to make the language more attractive and accessible to viewers (Ó Ceallaigh & Ní Dhonnabháin, 2015). However, there is no evidence that the channel’s popularity has translated into higher caliber Irish-language teachers or instruction in schools.

In Latin America, where telenovelas (serialized television dramas or “soap operas”) are an institution, they have been credited with improving awareness and involvement in agricultural reform, convincing mothers of the importance of childhood vaccinations, and improving sexual health, adult literacy, and girls’ rights, as well as lowering female fertility rates (Hegarty, 2012; Inter-American Development Bank, 2009). In the United States, popular TV programs such as I Love Lucy, Friends, and Modern Family have helped shift attitudes regarding intercultural marriages, responsible adolescent sexual behavior, and same-sex relationships (Collins et al., 2003; Kornhaber, 2015; Tawney, 2019).

3.5.2 Changing Behaviors and Mindsets: The Sabido Method

In the 1970s, Miguel Sabido, a TV writer and producer in México and the former director of the Mexican Institute of Communication Studies, developed the “Sabido Method”—an “edutainment” design method, based in part on social learning theory—the premise that humans learn social behaviors by observing and imitating the behaviors of others (Bandura, 1977). The Sabido Method operationalized Bandura’s theory for a mass media age, creating programming that aims to “entertain and educate an audience about a particular issue, create favorable attitudes, shift norms, and promote and reinforce behavioral and social change” (Singhal et al., 2004, p. 5).

The Sabido Method has four specific design elements:

- **Education focus.** Entertainment-education soap operas must be designed to educate a very large audience about a particular issue or behavior (for example, educating girls).
- **High production value.** The story, narrative, and entertainment attributes should be of high quality so the program enjoys broad viewership.
- **Strong character development.** “Good” characters are associated with desirable behaviors (e.g., sending girls to school) and “bad” characters are associated with undesirable behaviors (e.g., bullying, sexism, bad teaching).
- **Clear moral message.** Good characters are rewarded and bad characters are punished, so the audience is encouraged to imitate the positive role models (Singhal et al., 2004, p. 5).

The success of Bandura’s social learning theory and the Sabido Method in promoting positive behaviors through serialized TV has been successfully disseminated, adapted, and documented across many parts of the globe—lowering female fertility rates in México while increasing enrollment in literacy programs (Hegarty, 2012; Smith, 2002); encouraging women in Niger to use modern contraception methods (Westoff et al., 2011); inculcating greater awareness of AIDS and family planning in Tanzania (Smith, 2002); promoting women’s rights in Arab countries (The Economist, 2022); and changing attitudes about female infanticide and child marriage in India (The Economist, 2017). A 2011 USAID-funded study that examined serialized television exposure and female fertility rates in 48 countries in the Global South and reported a positive connection between television exposure and increased contraceptive
use in all countries—30 of the studies were statistically significant (Westoff et al., 2011).\footnote{Twenty-eight countries were in Sub-Saharan Africa, 13 in Asia and North Africa, and 7 in Latin America and the Caribbean. Authors report that within Sub-Saharan Africa, unlike other regions of the globe, the covariates of schooling and wealth play an important role in the connection between contraception use and watching television; however, the authors note that while these covariates diminish the association between fertility and television exposure, they do not eliminate it. Indeed, television viewing “in particular is … strongly associated with the use of modern contraception and with a smaller number of children desired and fewer births... These associations generally persist after adjustment for the amount of schooling, wealth, urban residence, and other covariates” (Westoff et al., 2011, p. x).}

These achievements in social mores and public health have not been replicated within education. Though popular films like To Sir, With Love, Dead Poets Society, Stand and Deliver, Akeelah and the Bee, Goodbye Mr. Chips, and Precious have shown audiences the many facets of a teacher—a mentor, a substitute parent, role model, stickler, coach, advocate, intellect, an inspiration—the use of television for specifically educational purposes has been far less common.

This may be beginning to change. Popular television programs whose protagonists are teachers, such as Der Lehrer (The Teacher), Profu (based on Der Lehrer), and HIT—German, Romanian, and Spanish TV series, respectively—have been lauded for their realistic portrayals of teaching (La Vanguardia, 2020; Naboya, 2022). La Otra Mirada (renamed The Boarding School for English-language audiences) is a two-year Spanish TV series that takes place in a girls’ boarding school in 1920s Seville. The new, progressive (and mysterious) teacher upsets educational convention when she reconfigures the classroom layout from rows to a U-shape, changes instruction to favor more “critical thinking,” and allows students to share ideas. Radiotelevisión Española (RTVE), which broadcast the show, even included a webpage cataloguing the good instructional practices modeled by the show (RTV.es, 2019).

The popular American “mockumentary,” Abbott Elementary (produced by an ex-teacher), has introduced its viewers to complex challenges that teachers confront daily and has been lauded by teachers for its realistic and humane portrait of the profession (Jacobs, 2022). More specifically, it appears to have taken a page from the Sabido Method, wittingly or unwittingly, as its episodes appear to promote positive mindsets and practices that are critical to good teaching—the importance of collaboration, a “students-first” mentality, creative problem solving, the importance of mentors for young teachers, and the joy of teaching (Bendici, 2022).

Teaching is a much-diminished profession in many countries, with an intimidating global shortage of teachers and a COVID-related exodus from the profession (United Nations Educational, Scientific and Cultural Organization, 2016; Jacobs, 2022). While the above examples of the impact of popular television in changing mindsets are compelling, the ability of such programs to improve attitudes and beliefs toward and about teachers and teaching still remains to be seen.

Although television instruction has largely been replaced by Internet-based technologies, it remains a viable option and a source of useful examples for teacher professional development in contexts with well-developed educational and production infrastructure coupled with areas that suffer from poor Internet access. To be successful, professional development must ultimately change teachers’ embedded beliefs. Bearing in mind the caveats of the previous paragraph, no other technology mode can tell a compelling story or provide role models in ways that speak to an audience so intimately, personally, and continuously as television. No other technology has thus far shown its ability to shift mindsets and address some of the most pressing social and behavioral issues as has television (Smith, 2002).\footnote{During COVID-19 pandemic school lockdown in 2020 and 2021, a group of Ugandan teachers decided to develop online TV programs for their students. See their efforts here: https://tinyurl.com/3dmzh5vs}
3.6 Video

If teacher educators were asked to rank their favorite technology tool for teacher learning, it just might be video.

Whether it is used to support students or teachers, video is a powerful professional development tool (Gaudin & Chaliès, 2015). In addition to its lower production costs, video has numerous advantages over TV. It is easy to use. It can localize and contextualize learning as teachers can watch and record colleagues and also observe their own experiments with new instructional methods. And it is versatile. Once confined to hard discs that could be mailed from one location to another, video now can be incorporated into multiple modes of distance learning (as screencasts, MOOCs, online courses, and as teaching segments texted over mobile phones).

3.6.1 Video for Teacher Professional Development

There are multiple ways to capitalize on video to deepen teachers’ content knowledge and extend teaching practice.

Video case studies: Success at the Core and TIMMS Teaching Videos

Video case studies present teachers with a problem or situation via video (for example, how to differentiate learning in a large classroom) using supporting documentation such as lesson plans and student work and embedding it in analytic discussions. One example of this is Success at the Core, a video series designed to help American teachers implement the Common Core curriculum. Each video case includes teachers discussing their design and instructional processes and materials, shares video segments of teaching, and provides discussion and reflection questions (Since Success at the Core requires a fee, another potential case study option might be TeacherTV, which is free, though no longer updated). These case studies allow teachers to study a classroom or an instructional strategy, such as co-teaching, in depth, modelling how a process should actually be implemented.

Perhaps the most well-known video series is the Trends in International Mathematics and Science Study (TIMSS) video study site, which provides videos of math and science classes from around the globe as well as numerous documents about teaching mathematics and science. This site demonstrates the use of video as pedagogical analytical tool for teachers’ awareness of students’ reasoning (Maher et al., 2014, as cited in Major & Watson, 2018). Use of the above sites could be enhanced through tools such as Voice Thread (fee-based) which could facilitate voice- and text-based synchronous and asynchronous discussions around these videos, while free Web-based video annotation tools such as VideoAnt could potentially facilitate analysis and rich discussion of these classroom examples. As will be discussed later in Chapter 9: Teacher Professional Development, the use of case studies as part of teacher professional development can have considerable and lasting impact on teaching and learning in a teacher’s content area (Heller et al., 2012).

Analyzing one’s own practice: Southeast Asia

Video is not just a window on the practice of other teachers but a mirror of a teacher’s own practice, prompting reflection and greater self-awareness in ways that a teacher “might not notice in the midst of carrying out a lesson” (Borko et al., 2008, p. 418).

Over a several-year period, Education Development Center prompted primary school teachers in

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17 Success at the Core was created by Education Development Center and is now available at the Teaching Channel. See https://learn.teachingchannel.com/success-at-the-core-sac.
18 TeacherTV, discontinued in 2011, was funded by the Times Education Supplement. From 2005–2011, it provided free video and support materials for British teachers, school leaders, governors, teacher trainers, student teachers, and support staff. One of its aims was to promote professional development. All content is still available to watch or download for free.
19 See http://timssvideo.com/
Indonesia (2006-2011) and university instructors in Laos, Myanmar, Cambodia, Vietnam, and Thailand (2014–2019) to film their own practice. Using a video analysis protocol, teachers and instructors reflected on their practice in an online learning community or with their coach (Burns, 2019). While data collected on this process was descriptive and self-reported, evidence from experimental research points to higher cognition and motivation among teachers who use video to analyze their own practice (Seidel et al., 2011, as cited in Major & Watson, 2018). There are numerous reliable video self-reflection protocols that teachers can use to help with such self-assessment, such as the evidential reasoning and decision support model (ERDS), as well as Harvard University’s Center for Education Policy Research Best Foot Forward protocols (Center for Education Policy Research, 2022; Jang, 2019).

3.7 Considerations: Television and Video for Distance Education
As the examples above suggest, video holds tremendous potential for teacher training—for teacher self-study, case studies, group study, and to help teachers teach. Video can be made more interactive through interactive online tools, by inserting a slide of discussion questions, or via group activity assignments. Video can be archived and viewed in multiple formats—via the Web, USBs, television, laptops, smart phones, or tablets; on video-hosting sites such as YouTube; in online courses and Massive Open Online Courses (MOOCs); through social media, alone or with colleagues, or as part of formal or informal professional learning opportunities.

3.7.1 Benefits of Visually-based Distance Education
Television and video are engaging and familiar cultural and professional communication modes with unique features that contribute to teacher learning. These features are catalogued here.

Video can let teachers see what is not possible to notice during the act of teaching itself
The above examples show the power of video for teacher learning when supported by “guided noticing,” in which teachers intentionally and purposefully watch a video or part of one. Noticing involves identifying what is most salient within the observed teaching situation, drawing on one’s contextual knowledge to make inferences about the situation observed, stopping, rewatching, and connecting specific events and broader principles of teaching and learning (van Es & Sherin, 2008, as cited in Hennessy et al., 2016, p. 4).

Video can reduce cognitive load
Unlike text, which is highly inefficient, video is efficient and concise—several pages of text can be encapsulated by a brief video segment, and

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20 See here: https://www.aitsl.edu.au/standards
conceptual, abstract information can be made concrete. A video can unfold in a nonlinear fashion, whereas nonlinear text sometimes proves disorienting to the reader (Gaible & Burns, 2007). The use of video, particularly as part of an online or Web-based course, lessens the reliance on print-based learning and thus reduces cognitive load and enhances the accessibility of whatever distance learning model is used to transmit video—television, mobile learning, digital learning games, or Web-based courses (Noetel et al., 2021). (Chapter 1 discusses cognitive load or the way in which limited working memory resources constrain learning processes.)

**Video can support dual channel learning**

Because video is a dual-channel (aural and visual) learning approach, as opposed to a single-channel approach such as print or radio, television and video can blend multiple media—still images, moving images, and sound—to offer teachers a more multimodal or multimedia learning experiences than either print or audio alone. This can result in greater long-term retention of information and improved learning (Mayer, 2009).

**Video is a popular tool for self-learning**

When teachers need to learn a new skill or instructional approach, more often than not they turn to video. YouTube just may be the most popular teacher professional development site in the world. Video lectures and content-based videos, such as those from Khan Academy, can help teachers improve their content knowledge, develop technology skills, or learn how to follow procedures in a stepwise fashion and do so in ways that are often easy to absorb and comprehend.

Such a claim is supported by a substantive body of research. Over 100 randomized trials using video in higher education suggested that, on average, videos led to better learning outcomes compared with other methods and adding videos to existing content showed strong effect sizes. In the 83 studies that swapped existing learning for videos, there were small learning benefits, with meaningful positive effects in approximately half of cases where video was used (Noetel et al., 2021). In addition to its strong effect sizes, video’s ability to help learners acquire skills results from its “more authentic perspectives ... (it allows) learners to see authentic demonstrations of skills with real people ... through the eyes of the performer” (Noetel et al., 2021, p. 19).

**The ability to control viewing confers multiple benefits on learners**

Video can generally afford the learner more control over his/her learning. For example, learners can access content at different points in the video as needed; use stop, pause, fast forward, and rewind features to control the pace of learning and information processing, and adapt the presentation pace to their individual needs (Rey et al., 2019). These controls can be manipulated by the learner or designed as part of the video itself in order to highlight meaningful information, segment learning, provide structural cues, or encourage active engagement strategies, such as increased notetaking or “pop-up” quiz questions (Merkt et al., 2022; Noetel et al., 2021). This segmentation and controlled viewing have been shown to improve academic performance, learner autonomy, and self-direction, particularly benefitting learners who encounter complex learning materials, have limited prior knowledge, or exhibit low working memory capacity (Merkt et al., 2022; Rey et al., 2019).

**Video is increasingly easier and more affordable to access, use, and create, thus enhancing its potential as a distance learning option**

As they have with audio and print, the World Wide Web and mobile devices have appropriated video, making it more flexible, accessible, and ubiquitous, particularly when used with social media applications such as TikTok, YouTube, Instagram, and WhatsApp. The video capabilities of many phones have increased—particularly in the case of high-end phones—allowing for easier creation of professional-looking high-resolution video at low cost. During COVID-19 pandemic school closures across the world, governments
in Latin America, teachers in refugee camps in Bangladesh, the Education and Training Board in Ireland, and teachers across the globe shared video resources on remote teaching and using technology via WhatsApp, Facebook, and TikTok (Burns, in press; Cobo et al., 2020).

Additionally, time-shifting technologies such as digital video recorders (DVRs) allow teachers to view television programs at a time of their choosing, while place-shifting technologies such as Slingbox, which stream content from home televisions to a tablet, laptop, or phone in another location, allow users to view programs far from home. Online services to compress and stream video, and the increasing ease of creating video for use on computers, phones, and tablets, which can be freely accessed, downloaded, and stored on popular social media sites such as TikTok and Instagram or saved in a YouTube or teacher online repository playlist, make video an even more attractive and easy professional development option.

Video recurs throughout this guide as part of various practices and distance modes, as seen in particular in Chapters 5, 6, 9, 11, 12, 15, and 16. As part of coaching, for example, 360-degree cameras such as the Swivl (or smartphones) can provide a full panoramic view of a teacher’s classroom and video-based coaching can help to compensate for the absence of an on-site coach (Chapter 16). Videoconferencing, discussed in Chapter 5, can bring isolated teachers into synchronous conversations with a larger community; this can be enormously beneficial, particularly if a well-trained facilitator ensures productive and focused discussion around the video examples. As further discussed in Chapter 5, face-to-face professional development sessions or lectures at a teacher training college can be recorded in the form of screencasts so student-teachers can review them as needed.

3.7.2 Limitations of Visually-based Distance Education

As integral as they are for teacher learning, videos are not a silver bullet and their utility depends on careful attention to purpose, design, sequencing, selection, and use.

Video is a technology, not an instructional methodology or curriculum

Videos may suffer from the “If you play it, they will learn” syndrome. Videos are a piece of software, not a methodology, and their intended use, and how they are used, matter. Research suggests that utilization of videos for teacher education works only when teachers view videos with a clear outcome in mind, where clips are purposefully selected to address specific program goals and are embedded within activities that are carefully planned to scaffold teachers’ self-reflection and progress toward those goals (Akbari, 2007; Borko et al., 2008; Sherin, 2004). Thus, distance programs must integrate video as part of a sequence of online, broadcast-based or in-person instructional activities.

Nor is video a curriculum. It is a tool that must be carefully conceptualized, designed, and integrated into active and reflective learning in specific purposeful ways (Borko et al., 2008, 419; Burns, 2019). Video design matters. Poorly sequenced information in videos can induce extraneous cognitive load and can negatively impact learning (Merkt et al., 2022). As emphasized in Chapter 11: Instructional Design, no amount of learner control can compensate for poorly designed and produced videos (Noetel et al., 2021) and no amount of video can compensate for poorly designed professional learning.

Teachers need to see models of intended practice (both live and video-based), but more importantly they need time and support to analyze, design, and implement these same types of environments. Video can help with some of this. But skilled professionals, sufficient time, and in-class supports will help even more.
Television has formidable entry barriers
Television has extremely high initial production costs, recurrent costs, demands an extensive distribution network with highly skilled personnel, and requires robust bandwidth, especially for streaming and Internet-based TV. Broadcasts can be interrupted for any number of reasons, whether electrical, technical, programming, or political. Broadcast schedules may not be convenient for teachers, though this is increasingly less a problem given streaming services, Web archiving, internal and external recording devices, and Internet-based TV.

Much instructional television and video fails to capitalize on the visual medium
Design and production matter with all distance technologies. Because of their visual nature, quality design and production may matter more with TV and video. Yet it often is difficult to create engaging instructional television or video programming.

A good deal of educational video and television is plagued by poor design—talking heads, highly didactic in nature, overly long, of mediocre quality, or low resolution. As Noetel et al. (2021) discovered, passive video viewing has been shown to be “less effective than active engagement (e.g., taking notes)...constructive processing (e.g., generating a concept map) and...co-construction with another learner” (p. 4).

As distance learning tools, the weaknesses of television and video can be redressed by means of the following techniques:

- Using many of the same techniques as used in IAI—pausing, questioning the audience, providing reinforcement, and guiding and scaffolding the teacher
- Viewing videos with a clear purpose in mind, and developing structured protocols and reflection tools so teachers focus on that purpose
- Monitoring teachers’ viewing of in-class educational programming and participation in instructional programming through classroom observations, teacher logs, or teacher-created artifacts or activities that directly link to television or video programming
- Using additional communication technologies such as email, two-way audio, mobile phones (text or voice), and IVR to create interactivity between viewers and presenters, between viewers and content, or among groups of viewers in separate locations (See Figure 3.2).
- Where robust Internet connectivity allows, housing video on the Web where it can be “remixed” and where viewers can comment and ask questions (similar to the communities that form in Facebook, YouTube, or Vimeo)
- Developing instructional video—narrated short video segments, interspersed with places for facilitated group discussions, individual reflection, large-group processing, and assignments
- Generating more rigorous research supporting the relevance of video as a teacher education tool
### 3.8 Summary of Visually-based Distance Education

Figure 3.3 summarizes the role of visually based distance learning and its strengths and limitations as a distance education mode.

**Figure 3.3**  
Summary of Visually-based Distance Education (Adapted from Gaible & Burns, 2007, p. 53)

<table>
<thead>
<tr>
<th>Roles in Teacher Professional Development</th>
<th>Strengths</th>
<th>Limitations</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Television delivers content and concepts to learners across the curriculum.</td>
<td>- Video and television are both powerful and familiar.</td>
<td>- Over time, the technical quality of video and television fades and content may look, sound, feel, and be outdated.</td>
</tr>
<tr>
<td>- Video and television are used to develop teachers’ skills and knowledge.</td>
<td>- They can be used to “bring” viewers to the site of events and phenomena.</td>
<td>- The highly didactic nature of instructional television—the TV teacher essentially standing and delivering instruction—represents a strong disconnect between how information is delivered versus how students and teachers typically consume information.</td>
</tr>
<tr>
<td>- Video and television can provide views of real classroom practices and learning activities.</td>
<td>- Observing demonstrations of classroom management and other teaching practices helps teachers implement new techniques effectively.</td>
<td>- Television broadcasts may be subject to external political and economic disruptions.</td>
</tr>
<tr>
<td>- Video and television provide teachers with learning resources that show distant places and graphical representations of concepts or historical events.</td>
<td>- Television, in particular, can reach large populations of students and teachers.</td>
<td>- Television has formidable barriers: production costs and skills, access to electricity and robust bandwidth.</td>
</tr>
<tr>
<td>- Visual medium could (but typically does not) guide teacher through scripted, hands-on classroom activities.</td>
<td>- Television and video can support instructional continuity across grades and subjects.</td>
<td>- Individually or locally produced video may be of such inferior quality that it turns off potential learners.</td>
</tr>
<tr>
<td>- Video and television visually demonstrate difficult-to-understand concepts such as instructional or assessment strategies, communication strategies, and content-based procedures.</td>
<td>- Recording classes shows teachers their own interactions, habits, and progress toward effective teaching.</td>
<td>- Increasing evidence shows that declining attention spans mean that teachers “tune out” video that is more than a few minutes in length.</td>
</tr>
<tr>
<td>- Video and television demonstrate new modes of teaching and learning through views of real classroom activities.</td>
<td>- Devices are equipped with video-editing software, so video can be produced inexpensively and without a great deal of production expertise.</td>
<td>- On-demand TV facilitates TPD at times convenient for teachers.</td>
</tr>
<tr>
<td></td>
<td>- The Internet, gaming consoles (such as the Wii), Virtual Reality head-mounted displays (HMDs), and apps for smart phones and tablets can extend TV and video’s reach and functionality.</td>
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