

# SECTION 6

## TECHNOLOGIES

### FOR TEACHER PROFESSIONAL DEVELOPMENT—TELEVISION

#### GUIDING QUESTIONS

- Which of our TPD needs or goals can be met through the use of television broadcasts?
- To what extent does our country have access to the skills and facilities needed to produce programming in this medium? How extensive and reliable is the relevant infrastructure?
- How are these technologies currently used in our schools and communities? How could these programs be improved or complemented by additional programs in TPD?
- What methods and what content are appropriate to meet our TPD objectives?

#### IN THIS SECTION

- Television for TPD
- Mexico's *Telesecundaria* Junior-secondary Curriculum
- Brazil's Television for TPD
- Educational Impact
- Cost Considerations

#### SUMMARY

Television has been employed successfully in several of the largest developing countries, including Mexico, Brazil, and China. Television's strengths include the power to engage viewers, to present conceptual information visually, and to show real people and environments from throughout the world. Television can support TPD by giving teachers opportunities to observe other teachers as they implement new instructional practices. By enabling teachers to anticipate what will happen, television reduces the risk inherent in experimentation.

Mexico's *Telesecundaria* program is designed specifically to provide year-round curricula to rural junior-secondary schools, enabling college graduates with no training as teachers to guide students toward successful completion by supplementing educational programming with in-class discussion, lessons, and assessments.

With high production costs *and* high recurrent costs for broadcast airtime, television is most cost-effective when it is used to support large-scale projects. *Telesecundaria* reaches 1.2 million students each year, and over the course of its 30-year history has achieved respectable results: completion rates by *Telesecundaria* students are similar to those of students in regular schools; students' performance on exams is slightly lower than that of students' in regular schools.

In Brazil, both private- and public-sector channels carry educational programming that addresses vocational training, social issues such as HIV/AIDS prevention, and ways to improve classroom instruction. *Salto para o futuro*, broadcast by the government to address TPD, is watched by roughly 200,000 Brazilian primary and secondary teachers. The program's goal is to guide teachers in instructional change, but results are mixed.

Without close connection to the concerns of teachers and support at the school level, TPD-focused television is more appropriate as a means to improve existing teaching and learning rather than a means to effect substantial change.

## TELEVISION FOR TPD

Mexico, Brazil, and China have been among the leaders in the use of broadcast television for instruction in developing countries. Of these, programs in Mexico and Brazil are profiled.

Three main factors define the strengths and limitations of educational television:

- Powerful combinations of images and information
- High production and recurrent costs
- Highly skilled personnel

As a tool for TPD, television is often used to show teachers real teacher-student interactions in the classroom, enabling them to observe the management of learning activities. In this area, the uses of television and radio for TPD can be contrasted: whereas television *shows* teachers images of teachers and students in action, radio often is used to *guide* teachers through scripted activities.

### *Mexico's Telesecundaria Junior-secondary Curriculum*

Started in 1968 to address the shortage of teachers in rural schools, *Telesecundaria* today reaches over 1.2 million students in 16,500 schools serving grades 7 through 9—over 15 percent of total enrolment in junior secondary school.

Teacher shortages hit secondary schools especially hard, because secondary teachers are required to master advanced knowledge of one subject—typically language arts, science, math, or social studies. Addressing this challenge by broadcasting educational programming throughout the school day, *Telesecundaria* enables a single teacher to teach all subjects effectively.

Every day in *Telesecundaria* classrooms, students:

- Watch 15-minute lessons on television, then
- Take part in 35-minute follow-up activities guided by their teachers
- Complete assessments of their learning

The curriculum is focused on community-based concerns such as pollution, water issues or hygiene. Class size in *Telesecundaria* classrooms averages 22 students while that of regular junior-secondary schools is 35 students.

Teachers also participate in one-week pre-service trainings and in ongoing in-service workshops that build mastery of the curriculum and lead to improved teaching practice. The *Telesecundaria* broadcasts provide critical support for students and teachers in small rural schools.

### *Brazil's Television for TPD*

Both private-sector and public-sector channels offer educational programming in Brazil. The best-known channel, *Canal futura*, is funded by a consortium of Brazilian and multi-national corporations and operated by *Globo*, the world's fourth-largest television broadcasting company. *Canal Futura* offers over 20 educational programs. One of *Canal Futura's* first education programs, *A-Plus*, was intended for teachers.

The success of *Canal futura's* education programming is based on scale. *A-Plus* was originally intended for teachers, but over time it expanded its programming to reach 13 million viewers; the Brazilian education system employs only two million teachers.

In 1996, the national Ministry of Education launched its own channel, *TV Escola* (“School TV”), broadcasting programs via satellite on TPD and student learning. The *TV Escola* program *Salto para o futuro* marked its 10th anniversary of daily broadcasting in 2005. The hour-long program presents a debate among three experts in education focused on issues in education theory and practice. Debates—a very low-cost format—are supplemented by short video clips that show practices and learning activities in action in real classrooms.

Teachers often view *Salto para o futuro* in groups at their school. The program is interactive: During the broadcast, teachers send questions, ideas, and opinions to the panel via fax, email, and telephone.

## Educational Impact

The *Telesecundaria* and *TV Escola* channels are both operated by their national governments independently of commercial broadcasting. For this reason, programming can address audiences of students or teachers that are much too small for commercial broadcasters: *Telesecundaria* reaches 16,500 schools, 50,000 teachers, and 1.2 million students, and *Salto para o futuro* reaches roughly 200,000, or 10 percent, of Brazil's primary and secondary teachers per year. *Telesecundaria* has reported the following results:

- **Completion rates equal to students in regular schools**

73 percent of students enrolling in grade 7 at a *Telesecundaria* complete grade 9, a completion rate that is 5 percent lower than students in regular secondary schools. This difference is not statistically significant.

- **Student achievement lower than that of students in regular schools**

62 percent of *Telesecundaria* students pass grade 9 reading exams, while 40 percent pass grade 9 math. Pass rates for students in regular schools are 76 percent and 50 percent.

*Telesecundarias* serve rural areas, populated by poor families in which youth often work. In this context, *Telesecundaria's* completion rate is impressive. To properly assess the *Telesecundaria* test scores, results would require adjustment for socio-economic status and other factors.

*TV Escola: Salto para o futuro* tries to use TPD-focused programming to influence teachers' classroom practices. Independent evaluation suggests that even though it incorporates interaction via fax, phone, and email, the program may not be connected closely to teachers' day-to-day concerns to be effective. Researchers suggest that for *Salto para o futuro* to be effective, “it must advance beyond making requests or suggestions to in-service teachers, to become linked to the educational life of the school, rather than to proposals imposed by the central office.”<sup>9</sup>

## Cost Considerations

Television production costs are high, and airtime is expensive. In 1998, production of a 15-minute *Telesecundaria* module cost between US\$30,000 and US\$50,000 and required about 20 days to complete. *Telesecundaria* re-uses its instructional programs, but still reports high recurrent costs:

- Recurrent costs, over half of which are teacher salaries, are three times greater than the annualized investment in video production.
- Costs per student, at more than US\$500 per year, are 15 percent higher than in regular schools.
- Initial investment in program production (US\$594 million) has been followed by recurring costs of US\$425 million per year.

<sup>9</sup> See Castro, A. M. (2002). *Descentralização e Autonomia: Limites e Possibilidades de um Programa de Formação de Professores*. *Educação Online*. Available: [http://www.educacaoonline.pro.br/art\\_descentralizacao\\_e\\_autonomia.asp](http://www.educacaoonline.pro.br/art_descentralizacao_e_autonomia.asp)

## Questions for Further Discussion

Supported by long-term commitment and resources, *Telesecundaria* has achieved substantial impact in educational access and improvement. However, questions can be raised about opportunity costs and program flexibility:

- Over the course of the *Telesecundaria's* 30-year history, what other long-term capacity-building and educational-improvement measures might have been by-passed as a result of the financial and organizational commitment to television?
- How can *Telesecundaria* take advantage of new developments in Internet access, video production and delivery, cut costing techniques and improvements in learning outcomes?
- With a substantial investment in *Telesecundaria*, how might Mexico's secondary school program adapt as the country begins to emphasize computers and the Internet in schools?

## Consider Using Television to Support TPD When...

Minimum capacity and infrastructure requirements can be met, including:

- Stable electricity is supplied to 90 percent of the area targeted
- Design, production, and other technical skills are available
- Committed long-term funding is *at least* equal to initial start-up and production costs
- Government or commercial broadcasting networks are available, with satellite broadcasting available if rural areas are involved

Problems to be addressed include:

- A scarcity of qualified teachers, especially in rural areas
- A large number of students who are unschooled or receive inadequate teaching

Program objectives include:

- Changing teaching and learning throughout the entire system
- Increasing teachers' and students' access to rich educational content

## WEB RESOURCE

- *Providing Teacher Training through Educational Television: The China Experience*  
Yidan Wang provides an overview of the context, history, and impact of China's use of in-service educational television to address the country's high numbers of unaccredited and under-skilled teachers.  
[http://pdf.dec.org/pdf\\_docs/PNACH453.pdf](http://pdf.dec.org/pdf_docs/PNACH453.pdf)

## TELEVISION IN TPD AT A GLANCE

Roles in TPD & education	Strengths	Limitations	Cost profile	Other considerations
<ul style="list-style-type: none"> <li>Addresses shortages of trained teachers</li> <li>Primary means of delivering content and concepts to students across the curriculum</li> <li>Development of teacher skills and knowledge</li> <li>Provides views of real classroom practices and learning activities</li> <li>Provides teachers with learning resources that show distant places, graphical representations of concepts, historical events, etc.</li> </ul>	<ul style="list-style-type: none"> <li>The medium is both powerful (moving images, audio, etc.) and familiar</li> <li>Can be used to “bring” viewers to the site of events and phenomena</li> <li>Observing demonstrations of classroom management and other teaching practices helps teachers implement new techniques effectively</li> <li>Potential to reach large populations of students and teachers</li> <li>Addresses equity and access issues—although access requires electrical power</li> <li>Supports instructional continuity across grades and subjects</li> </ul>	<ul style="list-style-type: none"> <li>Visual medium does not guide teacher through scripted, hands-on classroom activities—unlike radio, television promotes “watch and learn,” not “do and learn”</li> <li>High development costs may limit testing, review, and revision before programming is launched</li> <li>Value of content may degrade over time—costs of revisions and new programming are high; visual images “show their age”</li> <li>Broadcast airwaves are subject to political and economic events</li> <li>Television production requires sophisticated skills and facilities</li> <li>Costs of production and airtime may influence programming to reach audiences outside of schools</li> </ul>	<ul style="list-style-type: none"> <li>Fixed broadcast schedule—can be augmented by taping</li> <li>Limited by access to electrical power</li> <li>Hardware costs for reception (television, satellite dish, cabling) and power generation may be too high for poor communities and schools</li> <li>High production costs—often US\$1,000 per minute</li> <li>Commercial broadcast rates are very high</li> <li>Local installation includes dish (in rural locations)</li> </ul>	<ul style="list-style-type: none"> <li>Per-student recurrent costs of large-scale programs are low—but low recurrent costs have not ensured sustainability</li> <li>Funding may combine contributions from ministries of communication, broadcast authorities, commercial broadcasters, and others</li> <li>Lack of interactivity can be addressed through a range of affordable technologies—fax, email, telephone “call-in” formats—and by incorporating wait time, discussion questions, and facilitator directions into programming</li> <li>Impact is increased by teacher development, printed materials, school site visits and other means</li> <li>Limited quantitative evidence of impact on teacher development</li> </ul>