

Chapter 4

Technology and Preschool Education in Mexico

A Country in Transformation

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ABSTRACT

The last nine years have seen major change in the Mexican educational system as sweeping reforms across all levels have been implemented. In particular the early years of education have become the focus of legislation to increase quality, open access, and improve curriculum. How technology shaped these sweeping reform efforts will change the future of Mexico in a global community. Early childhood education must support the use of technology if the population is to move into a techno-society.

INTRODUCTION

In other chapters you have read about preschools, teachers and technology in New Zealand, Taiwan, and Japan. This chapter will focus first on Mexico and then briefly on the border regions which connect the United States to Mexico. Given global trends that indicate that the world's predominant growth populations are largely non-Anglo students, we can expect that tomorrow's schools will need more teacher experts who can cross all borders that separate groups, whether the borders are geographic, physical, linguistic or cultural. One of the strengths of the digital generation is they are global

with no borders to bind the education, business and communication systems. As most countries of the world become more economically dependent on the global money market it is important for all countries to prepare their populations for technology use. Universally higher levels of education for larger numbers of students are being demanded of educational systems that were designed decades or centuries ago to meet very different requirements (Darling-Hammond, 1996). While challenges remain such as training for teachers (Stevens et al, 1997), glimpses of hope are provided as different factions call out for education for all, especially in areas of meeting early childhood needs.

The first author of this chapter has worked in the field of physics for several years. My degrees

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include a B.S., M.S. and PhD in Physics. I have done Postdoc work at the Niels Bohr Institute, Copenhagen Denmark and the Lawrence Berkeley Lab in Berkeley, California. At this point you may be wondering if this chapter will be filled with equations and you may be questioning the reason a Physicist would be writing a chapter connecting young children and anything. While working at the University of Texas at El Paso I developed an interest in how students learn. During my experiences it became my belief that the early years are the most important for development of thinking. Through the funding of the National Science Foundation (NSF) I had the opportunity to develop science activities for preschool children and became involved in the Ysleta Preschool Center. This experience has changed the direction of my work. Since then my belief has been confirmed that these age groups and teachers are crucial to the future of the globalization of all cultures. Within this population lie the answers to how we can connect and support successful learning for all children. I now write children's books, develop science activities, and work with grants for teacher training and international understanding of culture on early childhood learning. My co-author always knew the importance of early childhood and was the Regional Coordinator of the Centros de Desarrollo Infantil in Cd. Juarez. Her many years of experience with young children in Mexico provides the practitioner component for the development of this chapter. Between us we have tried to approach this chapter to address university and practitioner concerns about technology and young children in Mexico.

Mexico has been referred to as a "developing country" in many reports and articles. This term comes from a Western analysis of economic development. This may mislead readers as Mexico had been developed in many areas for centuries. We have a rich cultural history, the country of Mayas and Aztecs, of civilizations that were considered highly technical and advanced. There is still a large indigenous population in our country. There

are 62 indigenous towns in Mexico, where one of the 80 languages and their variants is spoken. This diverse cultural heritage influenced how education has developed. The impact of technology has changed the economic system in Mexico. In 2009 Wikipedia listed Mexico as the country with the 13th largest gross domestic product. The change has been rapid and the educational systems struggle to keep up with the technology needs of our citizens.

As a practicing scientist for many years I have become concerned about the future of science and science education. The economic system is important but even more important is the future of science education which depends on the inclusion and investigation of diverse populations and how best to develop and utilize these resources in school environments. Cumulative research over the last five decades shows that children's development can be modified and enhanced by the quality of their early environments and experiences. Research provides strong evidence that early childhood care and education programs boost children's physical health and well-being, their cognitive and language skills, their social emotional skills and their enrolment in primary school (UNESCO 2006).

Technology is and has always been vital to the development of science. Long before the general population used the internet to communicate the science community shared research and ideas through technology and on a global basis. Computer simulations are increasingly used in experiments to explore and develop science research. As the world becomes more technology dependent there is a clear need to insure all children have the best possible educational preparation in technology. We can no longer separate communities or narrowly identify groups of people based on ethnicity if we are to meet the needs of a global community. Because early childhood cognitive and socio-emotional development strongly predict later school enrollment and life success, we cannot afford to ignore the importance of technology

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