

## Chapter XII

# Integrating Human Computer Interaction in Veterinary Medicine Curricula

**Gale Parchoma**

*University of Saskatchewan, Canada*

**Susan M. Taylor**

*University of Saskatchewan, Canada*

**Jonathan M. Naylor**

*Ross University School of Veterinary Medicine, West Indies*

**Sameeh M. Abutarbush**

*University of Prince Edward Island, Canada*

**Katharina L. Lohmann**

*University of Saskatchewan, Canada*

**Kathy Schwarz**

*University of Saskatchewan, Canada*

**Cheryl Waldner**

*University of Saskatchewan, Canada*

**Sharon Porterfield**

*University of Saskatchewan, Canada*

**Cindy L. Shmon**

*University of Saskatchewan, Canada*

**Lydden Polley**

*University of Saskatchewan, Canada*

**Chris Clark**

*University of Saskatchewan, Canada*

### ABSTRACT

*This chapter discusses contemporary global challenges facing veterinary educators and summarizes some of the economic, social, political, and technological pressures underlying curricular and pedagogical change initiatives. Integrating human computer interaction (HCI) into veterinary medicine curricula, as a strategy for implementing pedagogical transformation, is reviewed. Computer-assisted learning (CAL) projects recently developed at a veterinary college are described. Results of studies evaluating the effectiveness of CAL approaches to HCI integration within the veterinary medicine curricula are reported. Future research directions are proposed.*

## **INTRODUCTION**

Contemporary veterinary medical education is in a transformative state. Veterinary educators are responding to public demands for the expansion of veterinary roles, for specialized veterinary care, and increased concern for animal welfare, global demands for standardization of veterinary curricula, and veterinary teaching hospital practice in the context of coping with a diminishing pool of academic veterinary researcher/educators who must manage a rapidly expanding knowledge base. Increasingly, veterinary educators are seeking human computer interaction (HCI) solutions to addressing these emergent challenges. This chapter examines these emergent challenges and describes international initiatives focused on integrating HCI into veterinary medical curricula. The chapter includes an in-depth examination of technology-enhanced learning (TEL) research and development program at the Western College of Veterinary Medicine in Canada.

## **EMERGENT CHALLENGES**

Contemporary veterinary educators are responding to a series of emergent challenges. Increasing public demands to expand veterinary roles into public health-assurance issues are at the fore of these challenges. Veterinary responsibilities for ensuring a secure, sustainable food supply and managing industrial-scale food animal production—within a climate of public fear of pandemic disease outbreaks—have globalized these issues within veterinary colleges, regions, and governance bodies. Animal welfare concerns, as well as ecological and environmental, issues are affecting not only what is taught in veterinary school, but also the way in which it is taught. Public demand for access to specialized veterinary care and expanding pressures on veterinary teaching hospitals to train specialists and increase caseload have resulted in a predominance of secondary and

tertiary cases (referrals from practicing veterinarians) being evaluated at veterinary teaching clinics, decreasing the access of veterinary students to “general practice” cases.

Meanwhile, the pool of veterinary educators is diminishing as more financially rewarding opportunities abound in private practice and the corporate sector. All veterinary colleges cannot secure, in a timely fashion, candidates for open positions in veterinary teaching. Therefore, student access to inter-institutional experts and specialists is an emerging necessity. The veterinary knowledge base is rapidly expanding, so that it is no longer realistic to teach veterinary students “everything they need to know” within their four-year curriculum. Debates about the merits of traditional broad-based curricula versus early specialization, the appropriateness of national and regional versus global credential standards, and even pedagogical approaches to veterinary teaching and learning are recurrent themes in current veterinary literature. The combined effects of these challenges for change in veterinary teaching methodologies have resulted in calls for HCI alternatives to traditional lecture-based pedagogy and to invasive animal use in veterinary educational laboratory exercises (Association of American Veterinary Medical Colleges, 2005; Fernandes, 2004).

## **Globalization of the Veterinary Profession**

The veterinary medical profession is increasingly expected to contribute to the development of solutions for global problems. This new responsibility makes the teaching and practice of veterinary medicine a global concern. Societal expectations that the veterinary profession should “undertake roles relevant to the re-assurance of human well-being, in terms of public health,” and address “the increasing consciousness in issues of animal welfare, sustainable animal production and environmental protection” (Rodriguez-Martinez, 2004,

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