

# Chapter VI

## Impact of Information and Communication Technologies and Influence of Millennial Students on the Role of CTE Teachers and Trainers

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### ABSTRACT

*Today's career and technical education (CTE) teachers and trainers are subjected to a number of challenges caused by work systems and processes that are science and technology-based. Furthermore, the advent of information and communication technologies (ICT) and characteristics of Millennial students has greatly influenced their roles. This chapter examines the impact of ICT and influence of today's students on the role of the 21<sup>st</sup> Century CTE teachers and trainers. The chapter describes information and communication technologies, application of ICT in education and training, characteristics of millennium students; contextual challenges and role changes for today's teachers and trainers, and provides suggestions to integrate ICT with instruction.*

### INTRODUCTION

The impact of information and communication technologies (ICT) is evident in every aspect

of today's societies. The information and communication technologies, mainly electronic mail (e-mail), the Internet, and cell phones, have affected the way we communicate or perform day-

to-day business. The Internet, for instance, has transcended geographical boundaries between nations, and has basically transformed the world into a global village by eliminating barriers for the movement of information within and across borders (Renard, 2005). The ICT advances have also revolutionized education and training thereby changing the way we teach and train and how students learn. There is evidence of growing use of ICT in educational institutions.

In education and some industrial sectors, the Internet has brought about new possibilities in course offerings, changes to school curricula and expanded the information base for teachers, trainers and students (Hovenga, 2006). There are now numerous online universities and web-based courses (Milligan & Buckenmeyer, 2008) and also, e-learning has become an important learning format in corporate America to provide industrial training (Hairston, 2007). Furthermore, the use of computers and advanced communication systems have been an integral part of teaching in schools for some time and today, many teachers are incorporating ICT with instruction. In short, the advances in ICT have impacted the role of teachers and necessitated a review of teaching strategies and teacher roles.

Nowadays, there is also heavy reliance on ICT by individuals, particularly the Net Generation or millennial students (Hohlfeld et al., 2008). The Millennials, born between roughly 1982 and 1995, have fully embraced the latest information and communication technological advances as part of their lives, and so, many of today's students integrate these technologies into how they learn, live and work.

In contrast to students from other generations, Millennials are described as:

*Impatient... expect results immediately... [and] carry an arsenal of electronic devices -- the more portable the better. Raised amid a barrage of information, they are able to juggle a conversation on Instant Messenger, a Web-surfing session, and*

*an iTunes playlist while reading Twelfth Night for homework.* (Carlson, 2005, p. 1)

In short, this generation is known for its heavy reliance on the available information and communication technologies and multitasking abilities. And, they would find it difficult to survive without the latest gizmo.

With so much information, too much information in some cases, now available by the stroke of a few keys on a computer and a generation of students so used to not waiting to get information (Renard, 2005), gone is the premise that the person in the front of the classroom has all the information, answers or something to share (Carlson, 2005). Therefore, as teachers and trainers prepare the Millennial students to function in the information age, there is need to examine the impact of ICT and behavior of today's students on teaching in order to find appropriate instructional methods.

This chapter provides an overview of information and communication technologies, and describes common ICT in education, characteristics of millennial students, role changes for the 21<sup>st</sup> century trainers and career and technical education teachers, and suggestions for integrating ICT with instruction in training and career and technical education.

## **BACKGROUND**

Information and communication technologies is a broad area that covers telecommunications technologies, such as telephony, cable, satellite and radio, as well as computers, information networks and software. Many of these technologies have expanded capabilities due to the shift from narrowband to broadband signal transmission. Among the major developments to ICT has been electronic mail (e-mail), the Internet, and Intranet (Passey, 2000). Other examples of ICT include: computers, video and television, MP3 players,

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