INTRODUCTION

Online teaching differs from face-to-face instruction in terms of physicality. Teachers and students are not in the same space at the same time. For that reason, the senses have less information to base decisions about information; a disconnect occurs as gestures are less able to be interpreted, for instance, even in video conferencing venues. Theoretically, when instruction exists without any images or sounds of teachers or students, the impacts of age is minimalized; people are less likely to impose their preconceived notions of generations in the educational setting. With that assumption made, some instructors may think that online courses can be standardized for a global audience.

However, such an assumption is false. People bring their backgrounds and experiences to their online learning situation, and interpret the course in light of their existing mental schema. In comparison to face-to-face interactions, it may be more difficult for teachers and students to ascertain the basis for individuals’ contributions and responses in the online environment. With less information about the individual available, misinterpretations may actually increase in number. For example, if an e-learner asserts that birth control is bad, it helps to understand that person’s statement if it is known that the learner is a twenty-year old Black male rather than a sixty-year old Latino.
Age impacts online instructional design and delivery in two ways: developmental/biological and social/cultural. As the brain develops, it processes and communicates information in different ways. Furthermore, the time period in which individuals live shapes their online experience. Therefore, as the online community reflects lifelong learning, it behooves online educators to factor in age when developing and delivering online instruction.

**CHILD DEVELOPMENT AND ONLINE TEACHING**

Learning changes with physical development, even at the pre-natal stage as billions of neurons are formed and connected (Sousa, 2001). That interconnectivity activity continues unabated until puberty when the brain determines which connections should be permanent. Other windows of learning opportunity also occur in childhood. For instance, children’s ability to learn motor skills peaks at age six. The window for developing emotional control is the first two and a half years. The window for language acquisition closely largely by age eleven.

The question is not if children should learn with technology; today’s students are technology natives (Kaiser Family Foundation, 1999). As far back as 1994 it was determined that the average age that children started using computers was between 18 and 24 months old (Casey, 1997). By the time a child is seven, their learning style is pretty much set, so even kindergartners should have learning experiences using technology in order to feel more self-confident about using digital skills. Since individuals with abstract sequential learning style preferences, which style is more often exhibited by males, tend to like computers more than individuals with other learning style preferences, early success with computers also can take advantage of the brain’s early malleability (Ames, 2003).

Rather the issue is how children use technology, specifically e-learning, particularly in early grades. The Northwest Regional Education Lab (Van Scoter & Ellis, 2001) offers useful guidelines for technology use in light of child development factors. For example, to meet children’s social and emotional development needs, one computer should be used by two students in a learning structure that insures that both students have hands-on experience and opportunities to talk about their efforts, including in online conversations. The American Association for the Advancement of Science (1999) found that more peer teaching and helping occurs when students use computers; with web 2.0 tools, this peer interaction can occur in cyberspace. In terms of language development, students should play with reading-rich digital resources and be encouraged to talk about their processes while using technology in order to develop more complex speech and reading fluency; again, social networking can broaden the basis for language use. To address motor development, word processing – if done using smaller keyboards – can actually be easier for some children than physically forming letters. Of course, computer use should be brief for little ones in order to prevent obesity and vision problems. Usually a combination of on-computer and off-computer activity within a learning activity yields the best academic and social results (The American Association for the Advancement of Science, 1999).

**ADOLESCENT DEVELOPMENT**

This generation of adolescents is probably the most diverse in terms of ethnicities, backgrounds and experiences. Nevertheless, some psychological conditions resonate for most teenagers today. In their study of teenagers, Girl Scouts (2002) found the following common characteristics.