

Chapter XXIV

Instructional Design: Sex Driven?

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ABSTRACT

In this chapter, we have analysed three main aspects of instructional design (online learning communities, learning styles, and digital games) on the basis of gender preferences. We have noted the visible differences between males and females when interacting with technology, and reviewed the available literature in these areas. The included survey, conducted on males and females with an average age of 21 years, highlights the preferences between genders when related to the use and playing of computer games. The resulting conclusions have been summarized to form part of the suggested guidelines for gender neutral and gender specific instructional design. It is hoped that with these guidelines, appropriate instructional design can open the area of learning equally to both sexes and foster equal participation of males and females in traditionally male-dominated topics.

INTRODUCTION

It has long been assumed that instructional design, whether for e-learning or for non-computer-based teaching, is grounded in gender-free approaches. However, it now seems that the majority of instructional design is failing females, particularly in technical and scientific disciplines:

A report from the National Science Foundation estimates that in 2001, 35% of the students enrolled in undergraduate physics, computer science, and math classes and 16% of those enrolled in undergraduate engineering classes were female. Meanwhile, women comprised less than 10% of students enrolled in graduate physics and engineering classes. (Malone, 2005)

Currently several European countries as well as The United States of America are attempting to redress this balance in order to encourage more girls to study in these male dominated areas.

Before this can be done, it is important to consider what are the educational motivators and the inhibitors for both genders.

Extensive research has taken place in area of instructional design (Taylor, 1996) but generally this has been looked at from a male perspective, even if this has not been acknowledged. We hope that the contribution this chapter will make to the design of e-learning will improve this situation and allow designers to recognise that there are potentially different motivations between the two genders.

INSTRUCTIONAL DESIGN AND GENDER

“Instruction” is what instructors do (e.g., a music instructor), and is mostly focused on training, whereas ‘Design’ stands for creativity for example, an environmental designer focuses on creating the external ambience. Thus Instructional Design can be viewed as process of designing the learning experiences for learners. If we accept that Instructional Design is a system of procedures for developing educational and teaching programmes in a consistent and reliable fashion (Reiser & Dempsey, 2001), it should also be consistent for the gender of the target audience.

Based on the decades of studies related to gender and software design, Huff (2002) argues that the instructional design of teaching programmes designed for males had game characteristics like competition, time pressure, and were focussed on hand-eye coordination. Application for females looked like goal-based learning tools, that is, drill and practice programs including conversation features. Most interesting is the further result of the study, what was claimed as gender unspecified

instructional design had characteristics of typical design for boys in particular:

Programs designed for ‘students in general’ were really programs designed for boys. Interestingly, 80% of the designers of our programs were female, many of whom expressed concern that educational software was male-biased. (Huff, 2002, p. 113)

Gorizz and Medina (2000) state that game designers have to create compelling content while at the same time understanding the context of use and societal attitudes of computer usage to be able to address girls and boys. Only when using true gender-neutral content, both genders are equally reached.

Klawe (2002) argues that there is still a surprisingly big gender difference in comprehending interaction and occupation with computers as “mainly a boy-thing.” This reflects on the dominance of software and games for boys as well as on their physical access to computers. According to Huff (2002), gender-influenced instructional design mirrors the experience of interacting with the software, especially when the software is used in public. The participant experiences visible stress when interacting with the software created for the other gender.

A person’s beliefs about his or her capabilities are a significant part of self-knowledge. (Lester & Brown, 2004, p. 4)

The central question therefore is, what is gender appropriate instructional design?

The focus of gender appropriate instructional design considers how we may offer the same topic to both genders while also creating suitable learning experience for females.

Respect and accommodate differences in preference in activities and usage styles of computers whether gender based or not.

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