Chapter IX
Digital Sport: 
Merging Gaming with Sports to Enhance 
Physical Activities Such as Jogging

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ABSTRACT

Recent advances in computing technology have contributed to a new trend that merges digital gaming with physical sports activities and combines the advantages of both; such as contributing a health benefit and supporting distributed participants. This chapter describes prominent examples, and their underlying theoretical concepts and perspectives. In particular, it presents a design prototype, “Jogging over a Distance,” which offers social joggers the opportunity to run together, although being in two different locations. This approach demonstrates the potential for the merging of computer gaming technology with sports activities, to offer combined effects that have traditionally been limited to each respective domain. Future work on enhancing existing sports and gaming activities will support novel experiences previously not possible. This exciting new field has the potential to enhance users’ lives by making positive health contributions.

INTRODUCTION

Digital computer games, from their early beginnings in arcades to the multi-million dollar titles of today, follow rule-sets; often allow for interactions; and are predominantly high-score focused. Furthermore, digital games encourage their players to improve upon their skills in a competitive fashion. Very similar characteristics are attributed to sports. Also, gamers can become members of internationally organized clubs and participate in prestigious gaming tournaments, similar to the ones that exist in professional sports (Pedersen, 2002). Such activities have been labeled “online sports” or “e-sports”. Further, there is a voluntary characteristic associated with both sports and computer games, and both are believed to be motivated by a perception of fun (Wulf, Moritz,
It appears that physical sports and computer gaming have many aspects in common. However, what differentiates computer gaming from traditional sports is its lack of support for physical exertion. Unlike sports, computer games do not encourage the use of gross motor skills, as their focus is mostly on fine motor skills. They do not intend to exert players physically, because they do not demand physical effort to reach the game’s goal. This is very different to sport’s focus on training and mastering the human body, which dates back to the ancient Greek’s celebration of the body and its movements. Computer games involve predominantly the development of cognitive skills and neglect involving the body in its supported activities. Players are only required to press buttons on a keyboard, game pad, or mouse in order to control an avatar’s movements, even though these avatars perform actions that, in reality, would require great strength and endurance. The mapping of users’ actions is not proportional to the represented activities. This lack of inclusion of physical activities is characteristic for computer games, but that means gamers also miss out on the benefits of physical activity.

Sports have many advantages, including physical, social and mental health benefits. From a physical perspective, sports can contribute to a healthier body by reducing the risk of obesity, cardiovascular disease and diabetes (Pate et al., 1995). From a social and mental health viewpoint, sport is believed to teach social skills (Morris, Sallybanks & Willis, 2003), encourage team-building, and support individual growth, as well as community development (Gratton & Henry, 2001). Some argue sport can foster social integration and personal enjoyment (Long & Sanderson, 2001; Wankel & Bonnie, 1990); provide opportunities to meet and communicate with other people; and contribute positively to self-esteem and well-being (Bailey, 2005). These are benefits that also contribute to the growth of social capital (Huysman & Wulf, 2004; Putnam, 2000). Sports activities can facilitate bonds between people, resulting in loyalty and team spirit. Team sports, in particular, are considered to be character building. Sports clubs not only function as a place to exercise, but also as a social space (Putnam, 2000). International sporting events also demonstrate that sports have the ability to overcome the language barrier and bring people together from various cultural backgrounds.

In summary, sports offer many benefits. The health and social benefits are of particular focus here. Computer games share some of these concepts, but fall short in offering a fitness aspect, due to interaction mechanisms that focus on fine-motor skills. Their role in facilitating social support is ambivalent. However, computer game technologies have now emerged that allow for novel social experiences, such as participating in shared activities between geographically distant players.

The objective of this chapter is to introduce the reader to an emerging approach in the amalgamation of digital games technology and sports activities. By combining the unique advantages from computer gaming technologies (such as supporting geographically distant participants) and the health benefits of sports, new experiences can be facilitated that offer mutual benefits to users, previously only available in each area.

Computing technology has been used in sports applications before. However, such work has mainly focused on supporting performance enhancement of professional athletes. Less work has been undertaken on using computing technology to enhance the experience of very differently fit sports people, and to support the social benefits associated with sports activities. The work presented here aims to demonstrate that there is potential for computer gaming technology to support a wide range of sports participants and even offer new experiences.

To highlight the feasibility of this approach, a system called “Jogging over a Distance” is described. It demonstrates how gaming technolo-
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