Childhood obesity is a national epidemic, according to alarming reports regularly released by fitness experts at colleges and universities across the country. Video games, according to some studies, are part and parcel of a sedentary childhood lifestyle that can lead to weight problems and, ultimately, serious health issues for children.

But is it possible that certain types of interactive video activities can be part of the solution, an innovative, effective method of combating childhood obesity?

That's what Stephen Sanders, director of the USF School of Physical Education, Wellness and Sport Studies, hopes to determine via research being conducted at the XRKade Research Lab, the nation's first interactive fitness research lab for children.

The lab, which opened its doors in January, is the result of a unique partnership between the USF School of Physical Education & Exercise Science (in the USF College of Education) and iTech Fitness of Denver, Colo.

Among the technology driven activities installed in the lab are Dance, Dance Revolution; Catrype game bikes; X-board; 3-Kick; and Cybex Trazer.

"Some of these activities have become part of our American culture," Sanders says. "Video games are not going away. These games require that children must be physically active in order for the game to work. For example, the faster a child pedals the game bike the faster the car will go on the video screen. Or, the more a child jumps while wearing the Cybex Trazer belt the more points he or she can score in the video game. The physical activity possibilities are endless."

Interactive fitness, also known as "exergaming," the use of technology-based interactive activities (including video games) in order to raise physical activity levels in children, is increasingly being used by public school systems, YMCAs, recreational centers and private fitness clubs across the United States to help children of all ages increase physical activity levels and maintain a healthy weight.

Although exergaming has increased in popularity, little research is available to suggest the kind or degree of impact that these interactive activities have on fitness and activity levels.

"We don't really know the long-term impact of exergaming," Sanders says. "The XRKade is really the only university lab like this, with 15 different types of activities that can be used by children, and observed by researchers. Other schools mostly have looked at single pieces of equipment. We're going to experiment with all of the different types of equipment and find out how children feel about the activities. Are they fun or not? Which ones are they most excited about?"

The mission of the XRKade Research Lab is threefold, according to Sanders. First, the lab will be a resource for working elementary and middle school teachers, as a place to obtain reliable information on exergaming and its benefits. Secondly, the lab will help to prepare undergraduate education majors to prepare for their roles in the work force, in terms of helping future students with physical-fitness regiments. Finally, the lab will be a center for research, to be conducted by several departments within the College of Education, and in collaboration with pediatric physicians at the College of Medicine and researchers.
What are the implications of the increased use of exergaming equipment among children? Does exergaming actually increase children's fitness levels? What are the social and academic benefits of interactive gaming activities? Are there benefits for special needs students? Which types of interactive fitness games are most appealing to children, and why?

Researchers at the XKRade lab will investigate these questions and others over the coming months and years. "The big picture on all of this is that as educators, we're trying to create a culture of physical activity," Sanders says. "Typically, there is time in schools set aside for children to be physically active. We want to make sure that qualified teachers are available to help kids reach their fitness goals."

The XKRade lab was funded through donations from iTech Fitness and their corporate partners, who together will support the USF lab's research for a period of as long as five years. "We are extremely excited to be working with USF on this project and we believe that the research will only help solidify the positive effects we have seen throughout the country in exergaming fitness clubs," said Michael G. Hansen, COO and co-founder of iTech Fitness.