



# PE Teachers' Perceptions of Dance Dance Revolution (DDR) as a Component of Physical Education

L. Moore, EdD, C. Harris, PhD, A. Bradlyn, PhD, K. Kennedy, MPH, K. Blower, MA, L. Abildso, MS, & J. Coffman, MA

## Background

- The use of physically interactive video games, such as Dance Dance Revolution (DDR), as an alternative to traditional forms of exercise has grown in recent years. 1
- Recent studies have found that using DDR can elicit heart rates that meet or exceed the minimum recommendations of the American College of Sports Medicine for developing and maintaining cardiorespiratory fitness. 2,3,4
- In 2006, West Virginia University, in partnership with Konami and the state's Public Employee Insurance Agency launched a program to increase the physical activity of children by incorporating Konami's Dance Dance Revolution into the state's physical education curriculum. 5

## Objective

- The objective of the present study was to explore PE teachers' perceptions of the use of DDR in physical education. Of particular interest were these teachers' perceptions of :
  - The utility of DDR as a method to increase physical activity
  - DDR as a method to engage sedentary students in physical activity
  - DDR as a component of the physical education curriculum

## Method

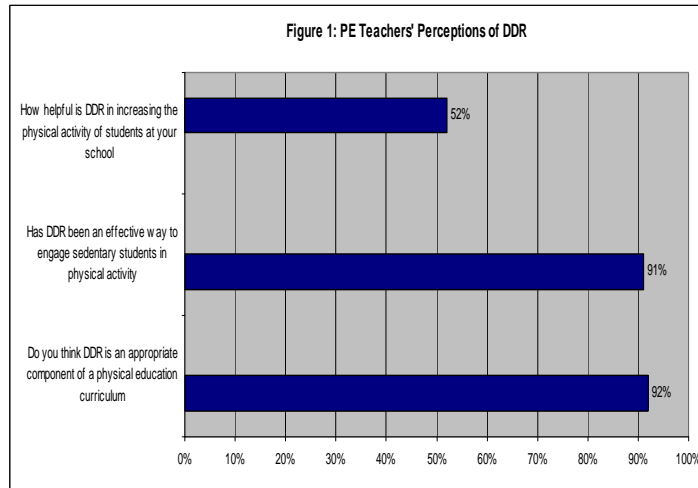
- The present study surveyed PE teachers in conjunction with a state-wide evaluation of West Virginia's childhood obesity legislation – The WV Healthy Lifestyles Act, which was passed in April of 2005.
- All traditional public schools in West Virginia (N = 696) were mailed a PE Teacher survey, and a total of 398 PE teachers responded (57% response rate).
- As part of this survey, PE teachers were asked a series of questions pertaining to the use of DDR in PE class as well as outside of PE.

Table 1: Demographic Characteristics of PE Teacher Respondents

| Gender                  |       |
|-------------------------|-------|
| Male                    | 51%   |
| Female                  | 49%   |
| Education               |       |
| Bachelor's degree       | 50.3% |
| Master's degree         | 48.2% |
| Post-graduate degree    | 1.5%  |
| Years of experience     |       |
| < 1 year                | 2.8%  |
| 1-5 years               | 13.3% |
| 6-10 years              | 14.6% |
| > 10 years              | 69.3% |
| School Level            |       |
| Elementary              | 64%   |
| Middle                  | 17%   |
| High                    | 14%   |
| Combined (K-8, K-12)    | 5%    |
| Certification           |       |
| PE specialist           | 81.9% |
| Multi-subject certified | 18.1% |

## Results

- 51% of the PE teachers surveyed were male, 50% had a bachelor's degree, and the majority had greater than 10 years teaching experience (see Table 1).
- 53% of the PE teachers surveyed reported using DDR in their classes.
- 26% of the PE teachers surveyed reported using DDR outside of PE class (e.g., during lunch, before or after school, during study periods).
- Of the teachers who reported using DDR in their PE classes, approximately 75% reported using DDR several times a month or more.
- More than half of the PE Teachers who reported using DDR felt it was somewhat of very helpful in increasing the physical activity of students at their school, and over 90% believed DDR was (a) an effective way to engage sedentary students in physical activity and (b) an appropriate component of the PE curriculum (see Figure 1).



- Analysis of the PE teachers' qualitative responses regarding the use of DDR revealed that both teachers and students held favorable perceptions of DDR.

"The students really love DDR and I have been trying to work it in as much as possible both in PE classes and at lunch time. I also wrote a grant to try to promote DDR more and to add more dance pads to the two we have now."

"I especially like it when you have those (students) who are weak in some areas but can excel at using DDR."

"All my students enjoy it and want as many opportunities as they can to use DDR."

- While the response from PE teachers regarding the use of DDR was generally positive, many voiced concerns associated with the use of DDR. The most common concerns related to DDR were: (a) the cost of DDR (b) the lack of equipment and physical space to use DDR, (c) the inactivity of students who watch while others use DDR (d) the use of DDR with younger students ,(e) set up time when using DDR, and (f) the potential for students to become bored with DDR.
- Presented in Table 2 are a sample of quotes from PE teachers which illustrate these concerns.

Table 2: Concerns and Challenges Associated With the Use of DDR

|  |
|--|
| <b>Schools do not have enough equipment or space for regular use.</b>  |
| "We have only 2 pads and 6 practice pads that are used in stations. We have double classes at a time and not enough DDR equipment or any storage for more."  |
| <b>DDR equipment is too expensive.</b>   |
| "DDR is great I just feel the cost is outrageous. I have used all my budget for the past 2 years just to purchase it."   |
| <b>Students who are not playing stand and watch.</b>   |
| "I use it [DDR] as a fitness station and as an option for free choice days. Although students not on the pads may follow along, I have found they tend to just stand and watch, reducing the amount of time they are actually active." |
| <b>The time required to set up DDR is extensive and limits how often and when it can be used.</b>  |
| "It takes time to set up, take down, and implement. I plan to use it in the future but right now I don't have the time."   |
| <b>It may not be appropriate for younger students.</b>   |
| "I would use it more if my students were a little older and I felt comfortable they could operate the system with little supervision in a fitness station."  |

## Conclusions

- Overall, PE teachers who used DDR had favorable perceptions of it as a component of the PE curriculum and as a method to increase physical activity at school.
- Perhaps most encouraging, given the prevalence of childhood obesity in West Virginia, is that more than half of the PE teachers who use DDR believed it is an effective way to engage sedentary students in physical activity.
- The use of DDR was perceived to be positive by many, however, there were concerns and challenges associated with its use.
- While the use of DDR has been found to be beneficial in regard to cardiorespiratory fitness, further research is needed to explore the benefit of DDR specifically in the school setting.

## Support

- Support for this project was provided by a grant from the Robert Wood Johnson Foundation®

### References

- Epstein, L.H., Beecher, M.D., Graf, J.L., & Roemmich, J.N. (2007). Choice of interactive dance and bicycle games in overweight and non-overweight youth. *Annals of Behavioral Medicine*, 33(2), 124-131.
- Luke, R.C., Coles, M.G., Anderson, T.A., & Gilbert, J.N. (2005). Oxygen cost and heart rate response during interactive whole body video gaming. *Medical Science in Sports and Exercise*, 37, S239.
- Tan, B., Aziz, A.R., Chua, K., & The, K.C. (2002). Aerobic demands of the dance simulation game. *International Journal of Sports Medicine*, 23, 125-129.
- Unnithan, V.B., Houser, W., & Fernhall, B. (2006). Evaluation of the energy cost of playing a dance simulation video game in overweight and non-overweight children and adolescents. *International Journal of Sports Medicine*, 27, 804-809.
- WV Games for Health (n.d.). Retrieved on January 14, 2008 from <http://wvgamesforhealth.wvu.edu>.