



Dance Dance Revolution in Schools: A New Approach to Physical Education

INTRODUCTION

Dance Dance Revolution (DDR) is an interactive music video game that provides a healthy, energetic, fitness workout performed to high-energy music. Players are challenged to match their dance steps with the flashing arrows on the screen while keeping up with the beat of the music.



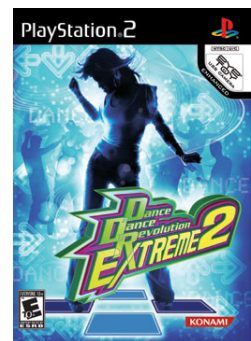
The game is commonly played on a dance pad showing four directional arrows. The player presses the arrows with his or her feet in response to arrows that appear on the screen in front of the player. The screen's arrows are synchronized to the general rhythm or beat of a chosen song, and success is dependent on the player's ability to time and position his or her steps accordingly.

HISTORY

Introduced nine years ago into the arcades of Japan, DDR has become a small craze among a generation of young Americans who are more open to the individual sports that modern technology affords, and less favorable to conventional team sports.



Incorporating DDR into gym class is part of a general shift in physical education, with school districts supporting the less competitive activities rather than the traditional sports.



“Traditionally, physical education was about team sports and was very skills oriented,” said Chad Fenwick, who oversees physical education for the Los Angeles Unified School District, where about 40 schools now use Dance Dance Revolution. “What you’re seeing is a move toward activities where you don’t need to be so great at catching and throwing and things like that, so we can appeal to a wider range of kids.”

HEALTH BENEFITS

Several news media have reported how playing DDR can be good aerobic exercise; some regular players have reported weight loss of 10–50 pounds. Although reports of weight loss have not been scientifically measured, many schools use DDR as a physical education activity in gym, and in Norway, DDR has even been registered as an official sport.

In February, Ms. Carson and her main collaborator, Emily Murphy, a doctoral candidate at the university's School of Medicine, announced results of a multiyear study. They found significant health benefits for overweight children who played the game regularly, including **improved blood pressure, overall fitness scores and endothelial function, which reflects the arteries' ability to deliver oxygen.**

Schiesel, Seth.
"P.E. Classes Turn to Video Game That Works Legs."
New York Times 4/30/2007



Many home versions of the game have a function to estimate calories burned, given a player's weight. Also, players can use "workout mode" to make a diary of calories burned playing DDR and any self-reported changes in the player's weight.

SCHOOLS

At the start of 2006, Konami, producer of the series, announced that the DDR games would be used as part of a fitness program to be phased into West Virginia's 756 state schools, starting with its 103 middle schools, over the next two years. The program was conceived by a researcher at West Virginia University's Motor Development Center and sponsored by a partnership of West Virginia's Department of Education, its Public Employees Insurance Agency, West Virginia University and Konami. Caltech allows its students to use DDR to fulfill its physical education requirements, as students may design their own fitness program.

At Patrick Henry Middle School near Los Angeles, there is a **PE class kids can't wait to get into.** "They just don't want to leave it alone. It's addicting. But it's a good exercise for them," says coach Chad Fenwick.

The machines also teach things like balance, timing, and coordination...some people learn faster than others.

And, as students claim:

"Most importantly, it's brought all of us together, like you see us right now. Dancing, laughing and just having a good time. You can't beat that with anything else."

"This game is great. It helped me with asthma and to make new buddies. I can now run farther distances than before without getting short on breath, and I feel lighter and healthier."

Dance Dance Revolution has become part of Governor Arnold Schwarzenegger's challenge among all k-12 schools to get California students healthy and fit.

EQUIPMENT

There are only four required components for a DDR system:

- A television or alternative display device
- A video game console
- A software copy of a DDR game
- A dance mat

Assuming that a television is already available, it is possible to get a complete new DDR setup for as little as \$200.

Physical education is moving away from competitive team sports and is more about encouraging lifetime fitness, and DDR is a part of that. Kids can do it on their own, and they don't have to compete with anyone else.

In order to allow more than two to play at the same time, additional complete setups are required.



A number of schools use non-interactive pads to allow many students to practice steps along with others while two players use the interactive pads with the game.

For a school seeking to implement a DDR program that can accommodate 20 children at once, a realistic funding goal is \$1,000, which includes two durable interactive mats, materials for non-interactive mats, a hardware console, and DDR software. New versions of DDR software are released regularly.

FUNDING IDEAS

Digital Dance-A-Thon, a product of CD Resources USA, LLC, incorporates DDR into traditional sponsorship-based fundraising programs. It provides materials and step-by-step instructions to run the fundraiser successfully, averaging a 10% profit.

The machines, which cost the school as much as \$8,000 apiece, are free to students during class. At lunch or after school, it's 25 cents a dance... **"They just don't want to leave it alone.** It's addictive. But it's a good exercise for them," says coach Chad Fenwick.

Over the past few years, numerous grants have been awarded to schools and after-school programs that utilize DDR. Funds from these grants typically cover the cost of the hardware and software.

Arcade versions of DDR are also available. These are all-in-one units that have the most durable mats and can be upgraded with new software if/when desired. During school use the machines can operate coin-free, but to offset their costs they can require coins to operate during off-hours. Patrick Henry Middle School near Los Angeles has done just this (*see adjacent quote*).

*For more information please contact Judith Jaslow at MarinOnTheMove.org:
(415) 473-2940 jjaslow@co.marin.ca.us*

Tips for Running a DDR Program in Schools

Rotation procedures through live pads

Since you can only have two live dance pads hooked into the game, only two kids at a time will play DDR for live feedback. Remaining students will “dry dance” on imaginary dance pads, poly spots, taped down arrows or whatever else you may want to use to mimic a live dance pad schematic. Rotate kids through live dance pads using whatever change-out system works best for your class. Rotation takes place at the end of each lesson section or song title.

How to play DDR

The goal of DDR is to match placement of your feet on the directional arrows of the dance pad (live or dry) with corresponding arrows on the screen. Try to step on the correct arrow at just the right time — which is when the moving arrow fills the arrow outline near the top of the screen.

Players can use "workout mode" to make a diary of calories burned playing DDR and any self-reported changes in the player's weight.



Lesson Mode

The Lesson Mode which can be selected from the main menu is a great way to teach game basics. *Reminder:* only one dance pad can be used live in Lesson Mode.

You probably won't need to go through many lessons before trying out a song in Workout Mode with dance pads set at the Beginner level.

Select a Song

Dance each song you select at least twice. The second time dancing a song is always easier than the first time because students begin to anticipate arrow patterns and can dance the song more confidently. Even a third time through can work well.

Review workout results

Upon each song completion, the workout results screen will appear automatically. This is a great opportunity to show how many calories were burned by dancing the song just completed, and how many calories were cumulatively burned since the beginning of class. Cumulative comparison with swimming, jogging, and jumping rope are a point of interest for students.

Accommodates varying skill levels

If the Beginner level is not challenging enough for some in the class, you may easily change one of the dance pads to *Light* or even *Standard* level. This allows students to self-select which side of the screen they will follow — the easier Beginner side, or the more challenging Light or Standard side.