Technology Implementation Project Mio Alpha Heart Rate Monitors

Donny Green

Fresno Pacific University

March 2, 2014

Dr. Sailor

**Technology Implementation Project Mio Alpha Heart Rate Monitors**

**Introduction**

The technology selected for this project is the heart rate monitors and sports watch made by Mio. Mio was created in 1999 by founder and CEO Liz Dickinson. Her latest creation is entitled the Mio Alpha. The Mio Alpha is a state of the art strapless sports watch. It is ideal for students at the secondary level to use. It is simple and functional. This heart rate monitor can be ordered online from various web sites or purchased from the local Academy sporting goods store. The first sentence in Mio’s mission statement sums up why this grant should be awarded. “Mio believes everyone should have access to the best fitness tools to support personal performance goals”. By purchasing a set of 150 Mio Alpha heart rate monitors, students will be motivated to exercise and improve their fitness level, improve test scores, and learn to be healthy for a lifetime. (Mio Global)

**The Needs of Target Population**

Students in the physical education setting need to be active. By having a heart rate monitor watch, the Alpha, this will encourage them to participate in activity daily. It will also motivate them to continue with fitness activity long term. If the students have an iPhone with the appropriate app, they will be able to upload their results and keep track of their activity and fitness. (Heart Rate Monitors USA)

**Obesity in Youth Caused by Inactivity: Problems**

Students lead sedentary lifestyles and are not active enough. Students are not motivated to be more active. This could be for a variety of reasons. It could be their culture, learned behavior, or financial reasons. For example, let us assume a student wants to play on sports team and participate in daily physical activity. The parents agree at first, but later restrict the student and force the student to stay at home at a specific time to “babysit” younger siblings. The child is then at home, missing out on physical activity, as well as, enjoying childhood. In addition, missing out on physical activity and necessary childhood “play” that both mold and shape the psyche and physical body of these students can also cause anger and resentments to form, fester and eventually cause multiple issues such as emotional trauma, acting out and of course, add to the obesity epidemic in our country. Students that are obese will have a higher risk for diabetes or other health problems as they become older.

**Organizational Description**

A school that will greatly benefit is a junior high that is based in Arlington, TX. The school is a Title I school and is comprised of over 1,000 students from diverse backgrounds with varying degrees of special needs. The act of offering such state of the art tools as the Mio Alpha heart rate monitor to students of a Title I, or needs-based school, such as Carter Junior High, is like throwing out life jackets to victims of a shipwreck. Many of the children are being brought up by single parents, often mothers with very low incomes, who may have to work multiple jobs in an attempt to provide basic necessities for their children. Junior high age students and younger often take over not only the chores of the home, but the supervision of younger siblings. Utilizing the students physical education and athletics class periods by providing the Mio Alpha heart rate monitors to understand how importantly health, exercise, and nutrition all work together to build a strong foundation for mental, as well as physical strength.

**Solution**

A solution to curb the obesity problem in youth at this school is to place a Mio Alpha strapless heart monitor on every student during physical education class. By incorporating the Mio Alpha heart monitor technology, students will become more motivated to exercise and monitor their own fitness level. Students will be “wowed” by the simple yet effective features of the Mio Alpha. Students will be able to have their heart rate checked continuously while running, working out, or other fitness games and activities. Students will be able to keep track of their fitness and workout information if they have the appropriate app on their phone. Another way this will motivate students involves students using their technology on their phone to monitor their fitness goals. This will help them stay in their desired target area to burn calories while staying in the “safe” zone. The students will be more likely to stick with an active lifestyle if they take ownership in it at this age. (Walking About)

**Goals**

The goal is for each student to wear and participate in physical activity with the Mio Alpha on their wrist on a daily basis. In turn, this will encourage them to pursue and lead an active and healthy lifestyle, not only in their teenage years, but for a lifetime.

**Budget**

The desired purchase is the Mio Alpha, which is a strapless sports watch and heart rate monitor that measures the heart rate continuously. The price for each one is 199.00 dollars plus tax. There will need to be 150 monitors purchased. This quantity will be divided between the two gyms. The amount that will be needed not including shipping is 30,000 dollars. This was calculated by multiplying 150 heart rate monitors by 200 dollars. If you take this amount (30,000) and divide it by the number of students (1000), the cost allocated for each student for this purchase is 30 dollars. This is a small price to pay for the many benefits. The chart below shows this data.

**Evaluation**

One could view Fitness Gram data from previous years without using a heart rate monitor. One could then view the Fitness Gram data from the years while participating with the Mio Alpha heart rate monitor and compare the data. The results should be a good indicator if the technology implementation was effective. If a study was done, there should be an increase in test scores as well. Since, it has been proven that students that have maintained an active lifestyle will also learn more and have higher test scores.

**Objectives / Outcomes**

The students will record their heart rate with a monitor while performing various physical activities. The students will have a basic understanding of reaching their target heart rate zone

**Plan to Implement in Physical Education and Athletics**

The plan to implement the Mio Alpha heart rate monitor is a simple one. Students will each be assigned a watch with a number on it. There will be an organizer hanging on the wall with a corresponding number posted on each pouch. The student will get the watch and put it on daily according to the teacher and the assigned routine. If students have the cell phone with an appropriate fitness app, they will be allowed to sync it to the heart rate monitor and track their fitness routine or activity. Students will know their heart rate by looking at the watch as it reads it automatically. The students will know if they are working hard enough to be their target zone. If they look at the Mio Alpha and they are not in the target zone, then the students know to increase the intensity of the exercise.

**Activities and Timeline**

The timeline for the desired purchase of the Mio Alpha monitors depends on the funding from this grant. Once the grant receives approval, the purchase order can be filled out through the school and district. The vendor must be on the approved vendor list. Upon arrival of the 150 Mio Alpha heart monitors, they must be checked in stored appropriately. They should be engraved with a number on them to keep track of them. They should be stored in pocket organizer with mesh see-through pockets like the one shown here from Sportime.



At the end of class students line up one at a time and place their assigned monitor back in the numbered pouch. Since the pouches are see-through, the teacher is able to make sure that all heart rate monitors are secure and accounted for. (Sportime) With these new monitors teacher can add them to any activity they feel is appropriate for the heart rate monitors. They should be able to participate in most activities.

**Outcomes**

The results should show that by incorporating the Mio Alpha heart rate monitor, students’ physical fitness and activity levels should improve significantly. As previously mentioned, this will be proven and analyzed after viewing the Fitness Gram data from the corresponding years.

**Impact**

As previously mentioned the school consists of 1000 plus students. There should be 150 Mio Alpha heart rate monitor watches purchased. This would allow 75 heart rate monitors for each of the gyms. In other words, there will need to be 75 heart rate monitors purchased for the girls gym and another 75 purchased for the boys gym. My largest physical education class at this time consists of 80 plus students. At one point earlier in the year there were 110 plus students in one gym. This quantity desired for purchase would allow students in most every class to wear their own watch for the specific period. The heart monitor will not only benefit the physical education program, but it will significantly impact the athletic program. The athletes will be able to train smarter for cross country and track meets. They will reach new goals and achieve the target zones, while maintaining their safety.

In conclusion, by granting the specified funding of 30,000 dollars for the 150 Mio Alpha heart rate monitors students will benefit greatly at the junior high. The Mio Alpha heart rate monitor and technology implementation will motivate the students to participate in daily exercise, it will improve overall test scores, and it will encourage them to lead healthy and active lifestyles for both now and in the future. ( Tine and Butler )

**Part II Manual / Lesson Plan**

**Name of Activity:** Recording/Calculating Heart Rate

**Purpose of Activity**: To test student's ability to record their heart rate using a Heart Rate Monitor and to guide students to several activities that will allow them to attain their target heart rate zone.

**Suggested Grade Level:** 7-8

**Checklist of Materials Needed**:

\_\_\_\_\_\_\_Recording Heart Rate Task Card

\_\_\_\_\_\_\_Jump Ropes

\_\_\_\_\_\_\_Mio Alpha Heart Rate Monitors

**Directions:** Record your beats per minute (BPM) using your Mio Alpha Heart Rate Monitor immediately after each activity then respond to the statements and questions at the bottom of the sheet.

**Activity BPM:**

Sitting Down \_\_\_\_\_\_\_\_\_\_\_ Sprinting (100 yards) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Walking (100 yards) \_\_\_\_\_\_\_\_\_\_\_ Jumping Rope (30 seconds) \_\_\_\_\_\_\_\_\_\_\_\_

Jogging (100 yards) \_\_\_\_\_\_\_\_\_\_\_ Sprinting shuttle run (15 yds.) \_\_\_\_\_\_\_\_\_\_

Jogging (300 meters) \_\_\_\_\_\_\_\_\_\_\_\_ Line jump (1 minute) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1) Which activity resulted in the highest BPM? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2) Calculate your target heart rate zone. Provide the equation and answer in the space below.

3) List the activity or activities that allowed you to reach your target heart rate zone.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Carter Junior High Lesson Plans** | | | | | | | | | | | | | |
|  |  |  |  |  | **Name:** | | Coach Green | | | | | | |
|  |  |  |  |  | **Grade:** | | 7TH AND 8TH GRADE | | | | | | |
|  |  |  |  |  | **Subject:** | | PHYSICAL EDUCATION/BASKETBALL BALL | | | | | | |
|  |  |  |  |  | **Day** | | **Week** | | **Six Weeks** | | | | |
|  |  |  |  |  |  | |  | |  | | | **Six Weeks** | |
| **Warm-up:** | | | -PUT ON HEART RATE MONITORS  -WALK AROUND IN GYM  -FITNESS WARM-UP  -STRETCH FOR FLEXIBILITY  -JOG | | | | | | | | | | |
| **Objective:** | | | -SKILLS INVOLVING THE GAME OF BASKETBALL  -STUDENTS WILL LEARN RULES DIFFERERNT BASKETBALL GAMES AND DRILLS  -STUDENTS WILL LEARN TO THROW THE BALL  -STUDENTS WILL LEARN TO CATCH THE BALL  -STUDENTS WILL LEARN TO SHOOT THE BALL | | | | | | | | | | |
| **TEKS (Number and Statement):** | | | **7.1/8.1 A-C, F, G- COORDINATE MOVEMENT WITH TEAMMATES TO ACHIEVE TEAM GOALS; DEMONSTRATE APPROPRIATE SPEED FOR ACTIVITY; DEMONSTRATE SKILLS FOR SPORTS; MODIFICATION OF INDIVIDUAL OR TEAM SPORTS. 7.2/8.2A-G CREATE AND MODIFY SKILLS FOR NONDOMINANT SIDE; IDENTIFY AND APPLY TO OTHER SPORTS; IMPORTANCE OF GOAL SETTING IN SKILLS; DETECT AND CORRECT PERSONAL AND PARTNER ERRORS; MAKE CHANGES BASED ON FEEDBACK IDENTIFY AND APPLY BASIC BIOMECHANICAL PRICIPLES; USE BASIC STRATEGIES WITH A MODIFIED SPORT. 7.3/8.3A-I PARTICIPATE IN GAMES; IDENTIFY FAVORITE ACTIVITY; PARTICIPATE IN CHALLENGING ACTIVITY OFTEN; EVALUATE FITNESS LEVEL; USE APPROPRIATE TECHNOLOGY; MAINTAIN HEALTHY LEVELS OF FLEXIBILITY; DEVELOP AND MAINTAIN MUSCULAR STRENGTH; SELECT AND USE APPROPRIATE TECHNOLOGY TOOLS TO EVALUATE, MONITOR, AND IMPROVE PHYSICAL DEVELOPMENT.7.4/8.4A-D, G-H LIST LONG TERM PHYSIOLOGICAL AND PSYCHOLOGICAL BENEFITS; ASSESS BEFORE AND AFTER ACTIVITY; MATCH PERSONAL PHYSICAL ACTIVITIES TO HEALTH RELATED FITNESS COMPONENT; ANALYZE THE STRENGTH AND WEAKNESS OF SELECTED PHYSICAL ACTIVITIES; DESCRIBE AND PREDICT THE EFFECTS OF FITNESS-RELATED STRESS MANAGEMENT TECHNIQUES ON THE BODY; EXPLAIN THE EFFECTS OF EATING AND EXERCISE.** **7.5/8.5A-D USE EQUIPMENT SAFELY AND PROPERLY; USE PROPER ATTIRE TO PROMOTE PARTICIPATION; INCLUDE WARM-UP AND COOL-DOWN AS PREVENTION AND TREATMENT. 7.6/8.6A-B DISTINGUISH COMPLIANCE AND NONCOMPLIANCE WITH RULES AND REGULATION; DESCRIBE FUNDAMENTAL COMPONENTS AND STRATEGIES USED IN VARIOUS ACTIVITIES. 7.7/8.7A-E SOLVE PROBLEMS IN PHYSICAL ACTIVITES; WORK COOPERATIVELY IN A GROUP; ACCEPT DECISIONS MADE BY GAME OFFICIALS; USE PEER INTERACTION POSITIVELY TO ENHANCE PERSONAL PHYSICAL ACTIVITY; RECOGNIZE THE ROLE OF GAMES, SPORT ETC IN GETTING TO KNOW OTHERS.** | | | | | | | | | | |
|
| **Costa's Level of Questioning** | | | **1 \*** | | | | | **2 \*** | | | **3 \*** | | |
| **AVID Methodology (WICR)** | | | **Writing** | | | **Inquiry** | | | | **Collaboration \*** | | | **Reading** |
| **AVID Methodology Examples** | | | NA | | | | | | | | | | |
| **Activity** | | | -CATCH AND THROW THE BASKETBALL  -RUN FROM ONE END OF THE GYM TO THE OTHER  -SCORE POINTS FOR THEIR TEAM  -PLAY WITH OTHERS / REACH AND MAINTAIN TARGET ZONE WITH HEART RATE | | | | | | | | | | |
| **Closure** | | | -BRING CLASS TOGETHER  -CHECK HEART RATE ON MIO ALPHA MONITOR AND TO FIND OUT HOW HARD THEY HAVE WORKED IN THE ACTIVITY  -EVALUATE IF THEY WERE IN THEIR TARGET HEART RATE ZONE | | | | | | | | | | |
| **Assessment** | | | -TELL THEM WHAT THEY CAN IMPROVE ON TO GET IN THEIR TARGET HEART RATE ZONE IF IT WAS NOT IN THE ZONE | | | | | | | | | | |

**Sources / Resources**

http://walking.about.com/od/prhrm/fr/Mio-Alpha-Review.htm

http://www.pelinks4u.org/articles/tech0608.htm

<http://www.sportime.com/>: Wall Organizer  
<http://www.heartratemonitorsusa.com/Pages/Mio/mio-all.html>: MIO Select Sport

www.mioglobal.com

Michele T. Tine & Allison G. Butler (2012): Acute aerobic exercise impacts

selective attention: an exceptional boost in lower-income children, *Educational Psychology: An International Journal of Experimental Educational Psychology*, DOI:10.1080/01443410.2012.723612

To link to this article**:** http://dx.doi.org/10.1080/01443410.2012.723612