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# Integrating Fitness and Literacy: Why and How

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## Abstract

*While the idea of teaching with an integrated curriculum has been long-embraced by literacy educators and is anything but innovative, it has primarily been connected to content areas such as science, social studies, and mathematics. Extending this content integration to all areas of fitness (physical, nutritional, social, and emotional) is innovating for reading educators. In this article, I provide six reasons for integrating fitness and reading. I then suggest and explain how using fitness literature, as one component of a fitness literacy lesson, is a practical, do-able way to achieve this integration.*

Few days go by without sobering news regarding the health of our nation's children. Childhood obesity is in the media spotlight, and often with startling statistics. For example, Anderson and Whitaker (2009) report that nearly one in five American four-year-olds is obese and that the rate is even higher among different groups. These researchers are troubled by their findings because of the many accompanying health problems associated with childhood obesity. They are not alone. Dr. Reggie Washington, childhood obesity expert and chief medical officer of Rocky Mountain Hospital for Children in Denver, Colorado notes that children live in an *obesigenic environment*, which he defines as an environment that sees a decrease in physical activity both in and out of school and the proliferation of snack foods that have little or no nutritional value. His solution includes making people aware of issues that surround childhood obesity and focusing on prevention (Washington, 2009). Disney's bold solution is to ban junk food advertisements in children's programming (including television, radio stations, and websites aimed at children), making it the first major media company to do its part in helping to ward off childhood obesity (Associated Press, 2012).

While there are many contributing factors associated with obesity, there is little question that lack of physical activity and poor nutrition are two. We have long known that physical activity improves children's circulation while strengthening their bones and muscles. Just as important, though, is compelling evidence that when students engage in physical activity, their *academic achievement improves* (APA, 2012; Berg, 2010; Castelli, Hillman, Buck, & Erwin, 2007; CDC, 2010; Coe, Pivarnik, Womack, Reeves, & Malina, 2012; Landry, 2012; Medina, 2008; Ratey, 2008; Wittenberg, Northrup, & Cottrell, 2012).

As with physical activity, nutrition also relates to academic achievement. An ever-increasing body of research reveals that poor nutrition and obesity are two contributors to lower levels of student achievement (Currie, 2005; Florence, Asbridge & Veugelers, 2008). The implication is that when educators support better nutrition, they also support increased academic performance (Satcher, 2008). Without a doubt, children's overall health and their success in school are connected (Basch, 2010; Landry, 2012; Wechsler, McKenna, Lee, & Dietz, 2004).

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Many entities such as the America Alliance for Health, Physical Education, Recreation, and Dance (AAPHERD), the Association for Supervision and Curriculum, (ASCD), the Center for Disease Control (CDC), and Designed to Move (DTM) to name four, are working diligently and collaboratively to do their part in resolving childhood obesity. Why and how might literacy educators want to contribute to this cause, one that some claim threatens our economic future (Bipartisan Policy Center, 2012)? The purpose of this article is to address this question. I begin by explaining six reasons for integrating fitness and literacy. I then suggest and explain how using *fitness literature* as one component of a *fitness literacy* lesson is a practical, do-able way to achieve this integration.

### Why Integrate Fitness and Reading?

Teaching with an integrated curriculum (i.e., teaching two or more content areas together) is an idea long-embraced by literacy educators. The overarching goal is to help children better learn by showing them how different subjects are inter-related. Through content integration, children's understanding goes deeper and therefore has staying power. This deep understanding and meaningful learning comprise one reason for integrating the two in all subject areas, including fitness (i.e., physical, nutritional, social, and emotional).

While integrating literacy with content areas such as science, social studies, and mathematics is common practice for many educators, integrating literacy, specifically reading, with fitness is not. Instead, the onus has fallen on physical educators to embrace content integration and to become language arts teachers (Buell & Whitacker, 2001; Ballinger & Deeney, 2006; Erwin, 2010; Gaus & Simpson, 2009; Heynen, 2008; Hruska, 2008).

But just as fitness educators can do their part to help children understand how fitness and literacy are connected and to do their part in helping to ward off childhood obesity, so, too, can literacy educators do the same by making deliberate plans to integrate the two topics into their existing classroom literacy routines such as readers' and writers' workshop.

A second reason is the alarming statistics regarding childhood obesity. A sad irony is that while we as a nation are beginning to recognize the problem, we are at the same time so obsessed with leaving "no child behind" *academically* that we may in fact be contributing to the obesity epidemic. In our desk-bound "race to the top," recess is often cut and physical education programs are scaled back, if they exist at all (Winter, 2009). Inactivity contributes to obesity (Currie, 2005; Welk & Blair, 2000; Waite-Stupiansky & Findlay, 2001). Integrating fitness and literacy, then, is a way to combat this problem because both can be accomplished in a given class period. Fitness and literacy can join forces to increase children's learning capacity and, simultaneously, fight against obesity.

A third reason which closely relates to the second is to assist all educators in answering the call of the *Let's Move in School* initiative housed within the American Alliance for Health, Physical Education, Recreation, and Dance (See [www.LetsMoveinSchool.org](http://www.LetsMoveinSchool.org).) In order to fulfill a Comprehensive School Physical Activity Program (CSPAP), and to achieve the nationally recommended 60+ minutes of daily activity, the group suggests four ways that physical activity during school can be achieved. Integrating physical activity into classroom lessons during the school day is one suggestion. Reporting on the results of a recent study conducted in Louisiana that showed connections between physical activity and academic growth, Landry (2012) offers the same suggestion.

Fourth, children are often led to believe that they must choose between being hooked on fitness or hooked on book learning, that one cannot be passionate about both. This is a misconception that we can dispel by showing children the thought processes and skills that are used in fitness and also used in literacy in general and reading in particular. In order to accomplish any aspect of fitness or reading, learners need to be active, purposeful, evaluative, thoughtful, strategic, persistent, and productive (Duke & Pearson, 2002). Helping students to understand that these thought processes are similar whether engaging in a fitness activity or reading is a sure way to help them understand that both contribute to a healthy lifestyle and both require thinking and meaningful practice (see figure 1).

**Figure 1 Thought Processes and Skills that Transcend Fitness and Reading**

Active	One component of fitness is physical activity, which calls for active participation. Participants also have to engage the intellectual aspect of fitness as they think about how to complete the activity and what they might already know about it in order to perform it.	Readers read the text bringing their own experiences to the text to construct meaning. They make predictions, make decisions such as what to read and reread, and when to adjust reading rate.
Purposeful	Fit individuals have definite purposes, which is what makes them select specific activities, eat certain foods, and determine how to interact with different individuals.	Readers have purposes in mind when they read a text. They then read with these purposes in mind.
Evaluative	Fitness participants evaluate their performance when doing an activity to determine their level of performance.	Readers evaluate what they are reading asking themselves if the text is meeting their initial purposes for reading it.
Thoughtful	Fitness participants think about the physical activity before, during and after completing it. Before performing, they think about what they know about it. During the activity, they think about how their performance and alter it as needed. After the activity, they think about what they got out of the experience and if they want to repeat it.	Readers think about the text selection before, during and after reading. Before reading they think about what they might already know. During reading, they think about how the current text relates to what they already know. After reading, they think about what the text offered and their interpretations of it.
Strategic	Fitness participants use strategies such as monitoring and visualizing to ensure that they are completing a task correctly. They use monitoring when they chart their gains. They use visualizing as they see themselves performing an activity.	Readers use specific strategies such as monitoring, and visualizing ensuring that they comprehend the text.
Persistent	Fitness participants stay with a task as long as they see that it is helping them to accomplish a specific purpose.	Readers keep reading a text even when it might be rather difficult if they feel that the text is helping them to accomplish a set purpose.
Productive	Researchers repeatedly report that fit individuals are more productive at work and play. They also experience lower stress levels and have fewer bouts with illnesses.	Readers bring their own experiences to the text at hand to construct or produce their understanding of it.

A fifth reason draws on the research findings of researchers who investigate motivation. Their reported findings indicate that motivation plays a powerful role in learning (Guthrie & Wigfield, 2000). As it relates to fitness and reading, sometimes an interest in fitness motivates reading. At other times, reading motivates fitness. Take the many readers who like to read the sports page of the newspaper or books about sports. An interest in organized sports is the driving force behind the reading. On the other hand, reading about fitness can motivate readers to become more fit. For example, when reading

selections that focus on how to run faster, readers may sprint from their armchairs to the neighborhood track to give the ideas a spin. As they read about nutritious meals and how to prepare them, readers may be tempted to “go healthy” in their own kitchens. Sixth, several researchers have written about the achievement gap that exists among various populations and have offered practical, helpful suggestions about what educators can do to address this achievement gap (Tatum, 2005; Freeman & Freeman, 2002). Yet the achievement gap persists. Could it be that one reason it remains is the lack of focus on the optimal

wellness of students, as Basch (2010) and Currie (2005) suggest? Both make clear in their research reviews that students who are healthy are better learners. Currie (2005) also notes that children of poverty eat foods that lack critical nutrients, which contributes to their obesity problem and thwarts their neural and cognitive development. Focusing on students' optimal wellness seems appropriate to help address the achievement gap.

## How Can Literacy and Fitness Be Integrated?

Using *fitness literature* or *FitLit* (author, 2010; 2011; 2012), children's literature and other forms of text that spotlight the multiple aspects of health and wellbeing is one sure way. It entails helping children do more than simply reading about fitness topics. Instead, it is part of a more comprehensive *fitness literacy lesson* (FLL) focused on helping children use one or more literacy dimensions (i.e., reading, writing, speaking, listening, and viewing) and fitness to better understand why and how they can take action over their own lives to live a healthy lifestyle.

With a *FitLit* selection as a springboard to target specific fitness learning (e.g., understanding heart rate, the differences between servings and portions, how

to identify advertising tricks used to lure children into buying and eating unhealthy foods) teachers can use a specific literacy teaching strategy to develop lessons that pack a one-two punch, simultaneously developing children's critical reading skills and their overall health. For example, to help them better understand the importance of flexibility, teachers can use a *vocabulary knowledge-rating guide* (Blachowicz & Fisher, 2006) to introduce children to words associated with flexibility. They can then engage children with reading about flexibility and participating in flexibility activities such as yoga. In so doing, they can help children understand how remaining flexible in movement is beneficial to their overall health and how remaining flexible in their thinking benefits their reading ability. In yet another lesson, teachers can show their students how to crack open the *text structure* typically used to frame nutrition labels. Teachers can then help children understand that knowing how to read such labels enables them to make informed decisions about what and how much they should eat at any one sitting.

Since I first started investigating fitness and reading nine years ago, I have compiled an extensive bibliography of *FitLit* titles, using six selection criteria to compile the list (see figure 2).

**Figure 2. *FitLit* Selection Criteria**

Selection Criterion	Rationale
1. K-5 picture books, both fiction and nonfiction, related to a specific area of fitness (physical, nutritional, social, emotional).	<ul style="list-style-type: none"> <li>• Pictures help support readers, especially those with limited background information</li> <li>• Content-specific words help readers attain necessary vocabulary in a meaningful context</li> <li>• Information is less overwhelming than textbooks.</li> <li>• Some students gravitate toward fiction whereas others gravitate to nonfiction.</li> </ul>
2. Focus on a specific fitness category and a skill(s) within it.	<ul style="list-style-type: none"> <li>• Help develop understanding of the many different skills associated with any given area of fitness.</li> <li>• Provide focal point for both reading and fitness.</li> </ul>
3. Cast a positive light on any given area of fitness.	<ul style="list-style-type: none"> <li>• Images and story lines are powerful in their suggestions to readers. Therefore, all books had to portray fitness as a value added to one's life rather than as torture that is rewarded with unhealthy food such as candy.</li> </ul>
4. Age-appropriate content	<ul style="list-style-type: none"> <li>• Students can best comprehend if the material is within reach.</li> </ul>
5. Easily integrated into existing classroom routines.	<ul style="list-style-type: none"> <li>• There is little time to add content into the school day.</li> </ul>
6. Accessible in bookstores or libraries.	<ul style="list-style-type: none"> <li>• Easy access leads to easy use.</li> </ul>

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## FitLit In Action

Let's explore FitLit in action in a classroom setting by taking a look at *Catch the Beat!*, a lesson I developed and used with second-grade students to help them better understand the importance of *making predictions*, a comprehension strategy, to learn about their pulse rates, to discover how physical activity increases it, and to learn more about physical activity. The students and I also investigated why an increased heart rate is beneficial to their overall health, and how to take action for their own health by documenting their physical activity outside of school.

## Before Reading

Using the three-phase lesson plan shown in figure 3, I gathered all students in the meeting area. Once all were settled, I commented, "You have been learning a lot about what good readers do when they read. You know that *making predictions* is one strategy they use before and during reading. But did you know that you also can make predictions when learning about other subjects such as fitness? That's exactly what I am going to show you today. We're going to make predictions about your heart rates and learn how they relate to physical activity."

I continued by asking, "What do you think I mean by *heart rate*? Let's make some predictions." As students made their comments, I wrote them on the smart board so that all could see. I then commented, "Let's see if any of your predictions are accurate." Using the chart shown in figure 4, I showed students how to take their pulse rates by first taking my own. I then asked for a volunteer so that I could demonstrate with a student. Finally, I had students take their own heart rate and write the number and their name on their sticky notes.

"Because you were sitting still, or resting, when you took your heart rate, the number you just wrote on your sticky note is called a resting heart rate," I noted. "What do you think might happen to it if I have you do some marching in place? Let's make some predictions. If you think it is going to increase, put your sticky note in the column on the board that says 'Increase'. If you think it is going to decrease, put it in that column. And if you think that it is going to stay

the same, put it in the 'Stay the same column.'" After giving students time to place their sticky notes in the appropriate column, I stated, "Ok, now I want you to stand up and when I say begin, march in place until I say that time is up. Ready? Begin."

After one minute, I stopped students and instructed them to take their heart rates. I then had them write their number on a second sticky note. Next, I had them retrieve their sticky note from the board and compare the two. "So what happened? Were your predictions accurate?" After some students volunteered their responses, I noted, "You discovered that when you move, your heart rate goes up. Do you know why?"

"I think it's because the heart is working harder," says Heidi. "And you are exactly right," I assured her. I then added, "When you move, you make your heart work harder. It has to push blood in and out more quickly than when you are sitting still. So if you want to have a strong heart, you have to move. You have to be physically active. And that is what you are going to be reading about today during small group reading time."

## During Reading

When meeting with students during small group reading, I reminded them the purpose for reading by stating, "Today you are going to practice *making predictions* to learn about physical activity. Before you start reading your book, let's make a group list of physical activities you think you might discover." Once volunteers had shared responses and I had written them on a chart large enough for all to see, I briefly introduced each title and let students choose the one they wanted to read and stated the reading expectations:

- Read to yourselves.
- Look for specific ideas that tell about physical activity.
- Reread your books if you are finished before I call you back together as a small group.
- Check to see if any of the ideas you read about are on our group chart.
- Be ready to talk about your book when all are finished reading.

**Figure 3. *Catch the Beat* Fitness Literacy Lesson**

**Objective:** To practice making predictions, a comprehension strategy, to detect pulse rate, to discover how physical activity increases it, and to identify physical activities that can be used both inside and outside of the school day.

<p><b>Texts</b></p>	<p>1: <i>Run and Hike, Play and Bike: What is Physical Activity?</i> by Brian Cleary                  2: <i>Get up and go!</i> by Nancy Carlson                  3: <i>Exercise and Play</i> by Cath Senker                  4: <i>The Busy Body Book: A Kid’s Guide to Fitness</i> by Lizzy Rockwell                  5: <i>Why Should I Get Off the Couch? And other Questions About Health and Exercise</i> by Louise Spilsbury                  6: <i>Wallie Exercises</i> by Steve Ettinger                  7: <i>We Like to Move: Exercise is Fun</i> by Elyse April                  8: <i>Ready, Set, Skip!</i> By Jane O’Connor</p>
<p><b>Before Reading</b> <b>Whole class</b></p>	<ol style="list-style-type: none"> <li>1. Gather the class together in the whole-group meeting area.</li> <li>2. Give students a sticky note and ask them to write their names on it.</li> <li>3. Show students how to take their pulse (See Figure 1.2). Explain that pulse rate is how many times their heart beats in one minute. It is felt as blood is pushed through an artery located in their wrists. Once students have their rate, have them write it on their sticky notes.</li> <li>4. Ask them what they think might happen to their pulse rate if they start to move. Do they think it will stay the same? Increase? Decrease?</li> <li>5. Have students place their sticky notes in the column that corresponds to their answer and to provide reasons for their choices.</li> <li>6. Have the students march in place for one minute.</li> <li>7. Have them take their pulses and write down the number.</li> <li>8. Have them check their predictions. Were they correct? Did their number stay the same? Increase? Decrease?</li> <li>9. Provide time for students to discuss why they think their heart rate went up. Point out that completing activities to increase heart rate strengthens the heart. Emphasize that they can take action for developing healthy hearts by being physically active.</li> </ol>
<p><b>During Reading</b> <b>Small groups of 5</b></p>	<ol style="list-style-type: none"> <li>1. Call groups of five to read and respond with you in small groups. Remind students that just as they made predictions about their heart rate, they will now make predictions when reading.</li> <li>2. Brainstorm ideas about physical activities and write their responses on a chart large enough for all to see.</li> <li>3. Provide a brief overview of the books and allow time for student selection.</li> <li>4. Invite students to use the cover and title to predict what they think their book will tell them about physical activity.</li> <li>5. Explain the procedure for reading their books:                         <ul style="list-style-type: none"> <li>• Read to yourselves.</li> <li>• Look for specific ideas that tell about physical activity.</li> <li>• Reread your book if you finish before I call you together as a small group.</li> <li>• Check to see if any of the ideas you read about are on our group chart.</li> <li>• Be ready to talk about your book when all are finished reading.</li> </ul> </li> <li>6. As students read, provide help as needed.</li> <li>7. Provide time for sharing of ideas.</li> </ol>
<p><b>After Reading</b> <b>Whole Class</b></p>	<ol style="list-style-type: none"> <li>1. Once all have finished reading in small groups, gather the whole class together.</li> <li>2. Display the small group charts and use them to construct a class chart of Physical Activities.</li> <li>3. Encourage students to state reasons why being physically active is important and add additional essential points as needed.</li> <li>4. Show and explain the “My Physical Activity Log.”</li> </ol>

**Figure 4. How to Measure Your Pulse Rate**

How to Measure your pulse rate:

1. Hold out your left hand with your palm facing up.
2. Place your right fingertips on your left wrist.
3. Press firmly to feel the thump of your pulse.
4. Count the beats for sixty seconds.
5. Write the number of total beats you count during the sixty seconds.
6. This is your resting heart rate.

Normal resting heart rate for children is 80–90 beats per minute.  
 \*Adapted from *Heartwave* (p. 5). Heart Center of the Rockies, Fort Collins, CO.

I then gave them time to read silently providing help as needed. Once finished, I asked students to write one idea they learned about physical activity and to show the rest in the group where the idea was stated or shown in their book.

**After Reading**

Once all had finished reading in their small groups, I called the class together to share ideas with one another. I displayed the group charts showing the different ideas each group had generated about physical activity, and commented, “Each group made a list of physical activities when reading with me in small group. Let’s take a look at all of them and see if we can pull them all together in a class list that we can post as a reminder for the many ways we can be physically active.” As students looked for and stated common traits, I made a class list titled, “Physical Activities We Can Do.” I closed the lesson: “Let’s review what we have learned about being physically active” and invited volunteers to comment. I then concluded, “As you have learned, being active is very

important in order to be healthy. One way that you can make sure that you are being active and taking control of your health is to keep a list of the activities you do. Some of your activities will be like those on our class list. But there may be others that you do outside of school. You can use this chart to keep track of your physical activities.” I then gave a chart to my students (see figure 5) and showed them how to complete it.

**For the Upper Grades, too!**

While the previous example focuses on primary grades, similar lessons can be developed and used with older students. For example, *Fueling the Body and Mind for Physical Activity*, is one that middle school fitness teacher Mike Vance developed and used to help his seventh-grade students understand how to use self evaluation to get more out of fitness and reading. He conducted the lesson within his fitness circuit classroom, further sending the message that reading can and is completed before, during, and after physical activity. See figure 6 for his lesson.

**Figure 5. My Physical Activity Log**

My Physical Activity Log    Name _____ Week: _____	
<b>Day</b>	<b>Activities I Performed</b>

**Figure 6. Fueling your Body and Mind for Physical Fitness Fitness Literacy Lesson**

**Objective: To practice using self-evaluation to determine fitness awareness and reading comprehension**

<p><b>Texts</b></p>	<p>All texts are articles obtained from <a href="http://www.teenshealth.org">www.teenshealth.org</a>:</p> <ol style="list-style-type: none"> <li>1. Stretching</li> <li>2. Sports and Exercise Safety</li> <li>3. Motivation and the Power of Not Giving Up</li> <li>4. Strength Training</li> <li>5. Figuring out Fat and Calories</li> </ol>
<p><b>Before Reading</b> <b>Whole class</b></p>	<ol style="list-style-type: none"> <li>1. Gather the class together on the floor in the center of the circuit center.</li> <li>2. Review questions given the day before (See figure 7) and discuss how they rated themselves on each question.</li> <li>3. Explain why the self-evaluation tool was open-ended and provide time for volunteers to share their insights.</li> <li>4. Conclude by emphasizing that our bodies are like a car. They need to be warmed up and fueled properly in order to get the most out of them and to protect them.</li> <li>5. Transition to reading by explaining that all of the questions on their self-evaluation guide are connected to what they will be reading about today.</li> </ol>
<p><b>During Reading</b> <b>Small groups of 5</b></p>	<ol style="list-style-type: none"> <li>1. Briefly introduce each article.</li> <li>2. Allow time for students to choose the one they would like to read. Emphasize that they will need to have a second or third choice because there are only five copies of each article.</li> <li>3. Explain the procedure for reading their articles:             <ul style="list-style-type: none"> <li>• Group yourselves by like title.</li> <li>• Read to yourselves.</li> <li>• Look for specific ideas that tell about your main topic as identified in the title of your article. Find at least three points that you think others should know.</li> <li>• Reread your article if you finish before I call you together as a small group.</li> <li>• Be ready to talk about your article when all are finished reading.</li> </ul> </li> <li>5. As students read, provide help as needed.</li> <li>6. Once all are finished, discuss your articles and the points that you think the most important for others to know.</li> <li>7. After coming to agreement on three ideas, create a chart that shows the title of your article and the three ideas.</li> </ol>
<p><b>After Reading</b> <b>Whole Class</b></p>	<ol style="list-style-type: none"> <li>1. Gather the whole class together.</li> <li>2. In turn, have each group share out their charts.</li> <li>3. Once all have shared, provide time for them to self-evaluate how well they thought they read and participated.</li> <li>4. Connect self-evaluation with fitness and reading by stating something such as, "Self-evaluation is something we use both in fitness and reading. It helps us to be aware of our goals and how well we performed relative to those goals. We can also use it to set new goals."</li> </ol>

**Figure 7. Self-evaluation**

Name _____
1. How would you rate your effort on warm-ups?
2. How would you rate your quality of diet before exercise?
3. How would you rate your safety awareness during exercise?
4. How would you rate your motivation before AND after exercise?
5. How important is stretching before exercise?

### Conclusion

The time is right to extend integrating literacy from content areas such as science, mathematics and social studies to all areas of fitness (i.e., physical, nutritional, social, and emotional). Clearly, there is a reciprocal relationship between fitness and literacy. As the two lessons in this article illustrate, using *FitLit* as one component of a *fitness literacy lesson* is one way to weave the two together. In so doing, we are more apt to provide all children with the necessary practice of connecting literacy and fitness learning thus deepening their understanding of both.

Children need our help in understanding how they can use literacy to live healthy lifestyles. I remain steadfast in my belief that we literacy educators can join entities such as the America Alliance for Health, Physical Education, Recreation, and Dance (AAPHERD), the Association for Supervision and Curriculum, (ASCD), the Center for Disease Control (CDC), and Designed To Move (DTM) who are working diligently and collaboratively to do their part in resolving childhood obesity. I wholeheartedly agree with Wechsler and colleagues (2004, p. 6) who state: "Schools alone cannot solve the obesity epidemic on their own, but it is unlikely to be halted without strong school-based policies and programs." As literacy educators, we can do our part.

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