

PHYSICAL ACTIVITY OF ONLINE HIGH SCHOOL STUDENTS

By

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Abstract of Thesis

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## Physical Activity of Online High School Students

Today, there are a growing number of overweight and obese teenagers. This is a result of low activity levels, poor eating habits, and a society driven by convenience and technology. Many people, especially teenagers eat unhealthy fast food because it is convenient for them. Along with an increase in unhealthy eating, teens have more access to technology. Most teens today incorporate technology into their social activities, and this can decrease their physical activity. They do not have to physically be with friends to have chats or even play games.

This study focused on determining if online high school students were as physically active as traditional face-to-face students. The study surveyed 77 online high school students from a Wisconsin Charter School, IQ Academy, and 122 traditional face-to-face students from Waukesha North High School in Waukesha, Wisconsin. Surprisingly, the results for the two groups were very similar. The study found that the online students had almost the same activity level as traditional face-to-face high school students.

This results of the study also suggested that the students' self-image was comparable. The students seemed to have the same pressures to lose weight and be healthier.

Physical educators play an important role in the activity levels of high school students. They need to teach and expose students to activities that can positively influence the health of all students.

Educators need to make every student's health a top priority.

Regardless of a student's learning environment, educators around the nation need to encourage activity for students so that we can move toward solutions for the growing obesity problems.

## CHAPTER I

### INTRODUCTION

The activity levels of teenagers in our nation today are on a downward trend. The author has been a Physical Education and Health teacher for 11 years. In that time, the author has noticed the increased interest in computers, video games, and other forms of technology among students. Whether in a traditional face-to-face classroom or in the virtual classroom, the students talk about the hottest video game, music, video, phone, or about instant text messaging from the night before.

All types of students are spending more hours with technology rather than engaging in physical activity. Many of the current students from a Wisconsin Online Charter School, IQ Academy, describe their most common form of exercise as the latest game for the Nintendo Wii. According to a Kaiser Family Foundation study (Cassidy, 2003), the average child age 2-18 spends the equivalent of a full workweek, nearly five and one-half hours a day, watching television, playing video games, surfing the Internet, or listening to music.

Decreased fitness levels in our country are a huge problem; one that cannot be solved instantly. As a society, we encourage a sedentary lifestyle. With the invention of the Internet, it is becoming less and less necessary to leave the house. We can shop, communicate, and even go to school behind a computer. In addition, all schools continue to face budget cuts. Physical Education programs are often the first target of cuts or see an increase in class size, which creates its own unique set of challenges.

It is important for Physical Education and Health teachers to become aware of what is going on with the health of our teenagers, as well as the current trends. Do they have an active lifestyle? What can influence their activities? How can we incorporate the new workout trends in our classes? Hopefully, by learning this information about these teens, we can encourage and promote habits that teens can carry into their adulthood regardless of the type of school that they attended.

### *Literature Review*

Obesity in our children is on the rise. According to Lemonick and Bjerkle (2004), between the years of 1976 and 2000, the number

of people who were considered obese in the United States went from 15.1% to 30.5%.

With the combination of a sedentary lifestyle and convenience food eating, children are becoming less and less healthy. Childhood obesity is linked to future adult obesity, but more serious is the direct correlation to medical issues with teenagers. Such issues include an increase in maturity-onset diabetes in the young (MODY) as well as orthopedic issues and a lower quality of life because of the inability to do certain activities. Some students may also not be as advanced socially and educationally because of their obesity (Flodmark, Lisseau, & Pietrobelli, 2005). In addition, kids are getting adult diseases such as diabetes because they are overweight and inactive, and they live on junk food. According to Cassidy (2003), "Kids as young as 10 are on cholesterol-lowering drugs." Observations suggest that up to 80% of overweight adolescents will become obese adults (Daniels, Arnett, Eckel, Gidding, Hayman, Kumanyika, Robinson, Scott, St. Jeor, & Williams, 2005)

Increased activity is a major factor in winning the fight against teenage obesity. Reports of successful weight loss and weight

maintenance emphasize the importance of incorporating regular physical activity. Children are similar to adults in that regular exercise provides additional health benefits for overweight individuals, including lowering disease risk, improving insulin sensitivity, reducing blood pressure, and improving socialization through group participation in activities (Daniels, Arnett, Eckel, Gidding, Hayman, Kumanyika, Robinson, Scott, St. Jeor, & Williams, 2005). Exercise, along with healthy eating habits and lifestyle choices can reduce disease and help us as a country to fight teenage obesity.

Mental health also becomes a factor in obesity. One of the best-studied areas is depression. In a study by Pine and colleagues (2001), adults who had been diagnosed with clinically defined major depression during their youth had a greater body mass index (BMI) than adults who did not suffer from depression during their youth (26 versus 24 kg/m<sup>2</sup> at 10 to 15 years of follow-up). Many other studies have also confirmed the association between depression and subsequent obesity. Goodman and Whitaker (2002) examined 9,374 adolescents in grades seven to twelve and found that elevated BMI was related to depression at one year of follow-up. The depression

scores were highest in the children with the greatest increase in BMI (Daniels, Arnett, Eckel, Gidding, Hayman, Kumanyika, Robinson, Scott, St. Jeor, & Williams, 2005). Exercise can improve teen self-confidence and self-image. Not only will teens be healthier and look better, but also they will feel better about themselves and others.

The development of overweight and obese teens may also be related to social difficulties. One of the primary mediators of the psychopathological relations with obesity is peer relationships. Overweight children have fewer friends and social network mapping suggests that normal-weight children have more relationships with a central network of children, whereas overweight children appear to have more isolated and peripheral relationships. In addition to having fewer friends, being teased about weight is a significant factor in psychosocial distress. Teasing overweight youth has been shown to be associated with an increase in both their suicidal ideation and number of suicide attempts (Daniels, Arnett, Eckel, Gidding, Hayman, Kumanyika, Robinson, Scott, St. Jeor, & Williams, 2005). Because the teens with more friends and more self-confidence most often are normal weight, schools need to take their activity classes more

seriously. Instead of cutting Physical Education, schools need to promote their programs and that will improve the overall health of their students.

Schools need to take responsibility for getting young people active. The State of Wisconsin has graduation requirements for Physical Education. In a traditional face-to-face learning environment, students must pass 1.5 credits of Physical Education. Currently in one of the online charter schools, IQ Academy of Wisconsin, the Physical Education requirement is one half credit of Health and one half credit of Physical Education or one credit of Health/Physical Fitness. Because IQ Academy is a charter school, they have flexibility with the state requirements.

Around the nation, there are schools that are offering Personal Fitness courses online as their Physical Education requirement. In Minneapolis, they began to offer Physical Education online as a way to appeal to students who were self-conscious about their body. "We have a significant number of kids who don't want to work out in school, don't want to change clothes in front of people, and don't want to run around a track because they can't run" (Stover, 2005).

This idea is a great option for the student who feels more comfortable learning fitness, changing clothes, and exercising on his or her own.

At the Virtual School of Florida, Physical Education is one of the most popular offerings, and it actually requires some real world exercise. How much and how hard the students work out, however, is largely up to them (Bowman, 2003). This became increasingly important because in 2003, approximately 1,600 students in Florida were expected to enroll into a cyberspace gym class. These requirements are different at each school. Online learning has to be activity based. Most students feel that they are more active in their personal fitness class than they would be if they were in traditional classes (Bowman, 2003).

Regardless of how students are educated, it is important that all teachers offer programs that encourage and incorporate family participation. Family activities can be a key factor in reaching the goal of a healthier population. This is why lifetime fitness and activity classes are becoming more and more popular. They encourage activities that people at all levels of fitness can enjoy. These activities include tennis, volleyball, bowling, badminton, exercise

walking, biking, and many more. Not only can you do these activities with almost anyone, you can continue to participate in these activities forever.

Motivation is another important factor that should be looked at when addressing the issue of obesity and physical activity. Programs that are designed only because it is “good for you” tend not to be successful because of the limitations in building a foundation for long lasting or lifestyle change. This is important when working with teenagers. Motivating teenagers can be difficult, but it can be done. Incorporating rewards, music, competition with others or self, and enthusiasm can help.

It is suggested that physical activity should be made PHAT (pretty hot and tempting), so people will participate for the joy of the activity or for the feeling it gives them. In order to make activities PHAT, professionals must first be aware of what activities children are interested in beyond traditional group sports and games, as well as recognize how much the current culture and trends impact their decision making (Edwards & Poff, 2008). It is important that these activities be timely to this generation of students instead of just a

traditional textbook activity in which they may be less interested. For example, instead of square dancing in class, try the Dance, Dance, Revolution game. It can teach students dance fundamentals, and that physical activity can be fun and trendy. This is one reason that the Nintendo Wii has become so popular with teenagers. It combines the video game with aerobic and anaerobic activities.

### *Purpose of the Study*

The purpose of this study was to see if online high school students were as physically active as traditional face-to-face learners. It was intended to determine their physical activity levels and how they felt about their activity, and their body size and shape. The author expected to see that traditional face-to-face learners were more physically active than online high school students.

### *Research Questions*

The following questions guided this research:

1. Are the types of physical activity that high school students participate in the same for online learners as they are for traditional face-to-face learners?
2. How do students feel about their body size and shape?

3. How much physical activity do the students get each week and do they enjoy this physical activity?

## CHAPTER II

### METHODS

Seventy-seven online higher school students and 122 traditional face-to-face students completed a survey of their self-image and physical activity. The survey is included as Appendix A and the responses to each item are reported in the following chapter. The survey included five demographic items, three self-image items and seven physical activity items.

The 77 online high school students were from a Wisconsin Charter School, IQ Academy, and registered in the required Health/Physical Fitness class. These 77 online high school students were given the survey in Appendix A as an assignment, filled out the survey, and returned the survey to the author.

The 122 traditional face-to-face students were from Waukesha North High School, in Waukesha, Wisconsin, and registered in the required Health class. These 122 traditional face-to-face students were given the survey in Appendix A as an assignment, filled out the

survey, and returned the survey to their instructor who forwarded the survey to the author.

## CHAPTER III

### RESULTS

The results from the survey are reported below for each item. Means were determined using a 5-point Lichert scale where letter A was worth 5 points. Most of the percentages total 100%, but for items that asked the students to mark all that applied, the totals did not equal 100%.

Immediately following are the results for the five demographic items.

	<b>Online</b>	<b>Traditional</b>
<b>1. What is your age?</b>		
Mean	15.1	14.95
Median	15	15
Standard Deviation	0.86	0.52
<b>2. What is your gender?</b>		
Male	32	65
Female	45	57

	Online	Traditional
<b>3. What is your height? (Inches)</b>		
Mean	65.5	66.3
Median	65	66
Standard Deviation	3.5	3.84
<b>4. What is your weight? (Pounds)</b>		
Mean	140.5	139.5
Median	140	130
Standard Deviation	26.76	32.1
<b>5. Where do you attend school?</b>	77	122

Immediately following are the results for the three self-image items.

	Online	Traditionally
<b>6. How would you describe your body?</b>		
A. Extremely Underweight	0%	0
B. Underweight	5	9
C. Normal	68	76
D. Overweight	23	14
E. Extremely Overweight	4	0
Total	100%	100%
Mean	2.74	2.93

	Online	Traditional
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**7. How do you feel about your body size?**

A. Love it	22%	8%
B. Like it	30	36
C. It's ok	28	47
D. Dislike it	16	7
E. Hate it	4	2
Total	100%	100%
Mean	3.5	3.4

**8. If I could change one thing about my weight, I would**

A. Gain weight	10%	18%
B. Lose weight	58	51
C. Don't want to change anything	32	31
Total	100%	100%

Immediate following are the results for the seven physical activity items.

	Online	Traditional
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**9. On the average, how much physical activity do you participate in daily?**

A. Less than 1 hour	20%	20%
B. 1-2 hours	35	47
C. 3-4 hours	33	25
D. 4-5 hours	9	7
E. More than 5 hours	3	1
Total	100%	100%
Mean	4.27	3.75

	Online	Traditional
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**10. Where do you participate in the majority of your activity? (Mark all that apply)**

A. School	14%	20%
B. Home	41	51
C. Health club or athletic facility	18	13
D. Park- Community	30	14
E. Other	47	17

**11. How do you feel about physical activity?**

A. Love it	34%	33%
B. Like it	52	39
C. It's ok	9	23
D. Dislike it	5	2
E. Hate it	0	2
Total	100%	99%
Mean	4.14	3.98

**12. Describe how you feel when you are participating in physical activity?**

A. Feels great	47%	38%
B. Feels good	16	26
C. Feels ok	25	25
D. Sometimes pain	12	10
E. Hurts like crazy	0	>1
Total	100%	100%
Mean	3.93	3.76

**Online      Traditional**

**13. When are you involved in an organized sport? (Mark all that apply)**

A. Fall	25%	47%
B. Winter	30	41
C. Spring	28	43
D. Summer	26	38
E. Not involved in an organized sport.	53	29

**14. Where do you participate in an organized sport? (Mark all that apply)**

A. School	8%	61%
B. Home	2	0
C. Health club or athletic facility	17	17
D. Park-Community	18	25
E. Other	20	8

**15. If you were going to a friend's house, how would you most likely get there?**

A. Walk	16%	25%
B. Bike	19	20
C. Drive	14	10
D. Get a ride	51	44
E. Other	0	1
Total	100%	100%
Mean	3	3.21

## CHAPTER IV

### DISCUSSION

The results of this study suggest that there were few differences between the physical activity levels of online high school learners and traditional face-to-face students. This results of this study also suggest that the students' self-image was comparable. The students seemed to have the same pressures to lose weight and be healthier no matter how they attended school. By comparison of the means, most of the results were very close. It is important to examine the results a bit closer for some of the items.

For item six, 9% of the traditional face-to-face students said that they were underweight, but for item eight, 18% of the same students said that they would like to gain weight. This could mean that some of these students were of normal weight and want to get big. Possibly, there may be athletes that want to gain strength.

Another interesting comparison relates to the results for item seven. When comparing the online learners to the traditional face-to-face students, 22% of the online learners love their body size

compared to 8% of the traditional face-to-face. This could mean that online learners had a better self-image because they were not dealing with peer interaction as much. Also, for the same item, only 28% of online learners said that their body size was “ok” compared to 47% of the traditional face-to-face students. This means that the face-to-face students were just satisfied. This could also mean that online learners were more critical about their bodies. It may be easy to describe your body as “ok” rather than being more specific.

It was not surprising to see that in the physical activity section of the survey, 30% of the online students participated in the majority of their activity in the park or community. Many online students were extremely active in their community and church. Only 14% of the traditional face-to-face students participated in a park or community.

For item fourteen, over half of the online students were not involved in an organized sport compared to less than a third of traditional face-to-face students. This made a lot of sense when in response to item ten 9, 61% of the traditional face-to-face students participated in their organized sport at school. This may have been

because most organized sports are held at traditional schools. The opportunity was available for the face-to-face students.

For item fifteen, instead of riding a bike or walking to a friend's house, over half of all students surveyed said that they would get a ride. This simply described the fast paced society in which we live. Teens today are in a huge hurry. Other factors that may be involved in this answer could be safety, location of friends or time constraints, but the fast paced, convenience based society probably had a lot more to do with explaining this result.

### *Conclusion*

The results of this study are reassuring in demonstrating that teenagers are teenagers no matter where they go to school. Certainly, there were some differences in the survey results, but overall online learners were close to if not just as active as traditional face-to-face students. The results of this study also indicate the importance of a positive self-image. It is beneficial for teens to have a positive self-image if they want to have strong mental health.

If we are going to fight the fight against teenage obesity, we will have to discourage sedentary lifestyles. Teens need to be motivated

to participate in activities. By making the activities fun, incorporating technology, and keeping up with the trends, teens are more likely to be active and more likely to be healthy. This is why the hottest game for the Nintendo Wii is the new Wii Fit. This game is selling fitness as fun. It is a game that can help you lose weight, tone your body, and increase your fitness level. This is a big motivator.

Teens can also fight the battle against obesity by spending more time on their eating. Fast and convenience eating on a regular basis is unhealthy and contribute to overweight and obesity problems. Unhealthy eating is also a factor that is contributing to the diagnosis of many adult diseases. By spending more time on food preparation and planning, teens will strengthen their fight against obesity.

It is important for all educators to expose students to many types of activities so that they can find one that is fun and allows them to be successful. As physical educators, we must impact the school district's priorities and make our students' health a top priority. By making their physical health a top priority, their mental health will improve helping to minimize other distractions in their lives.

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## Appendix A

**Activity Survey**

1. What is your age? \_\_\_\_\_ (Years)
2. What is your gender?
  - A. Male
  - B. Female
3. What is your height? \_\_\_\_\_ (Inches)
4. What is your weight? \_\_\_\_\_ (Pounds)
5. How do you attend school?
  - A. Traditional Face-to-face
  - B. Online
6. How would **YOU** describe your body?
  - A. Extremely underweight
  - B. Underweight
  - C. Normal
  - D. Overweight
  - E. Extremely overweight
7. How do **YOU** feel about your body size?
  - A. Love it
  - B. Like it
  - C. It's ok
  - D. Dislike it
  - E. Hate it

8. If I could change one thing about my weight, I would

- A. Gain weight
- B. Lose weight
- C. Don't want to change anything

9. On the average, how much physical activity do you participate in daily?

- A. Less than 1 hour
- B. 1-2 hours
- C. 2-3 hours
- D. 4-5 hours
- E. More than 5 hours

10. Where do you participate in the majority of your activity? (Mark all that apply)

- A. School
- B. Home
- C. Health club or athletic facility
- D. Park- Community
- E. Other

11. How do you feel about physical activity?

- A. Love it
- B. Like it
- C. It's ok
- D. Dislike it
- E. Hate it

12. Describe how you feel when you are participating in physical activity?

- A. Feels great
- B. Feels good
- C. Feels ok
- D. Sometimes pain
- E. Hurts like crazy

13. When are you involved in an organized sport? (Mark all that apply)

- A. Fall
- B. Winter
- C. Spring
- D. Summer
- E. Not involved in any organized sport

14. Where do you participate in your organized sport? (Mark all that apply)

- A. School
- B. Home
- C. Health club or athletic facility
- D. Park- Community
- E. Other

15. If you were going to a friend's house, how would you most likely get there?

- A. Walk
- B. Bike
- C. Drive
- D. Get a ride
- E. Other