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Professional Experience at Farmington High School

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COLLEGE OF KINESIOLOGY

Professional Experience at

Farmington High School

A GRADUATE PROJECT

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Masters in Exercise Science

by

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Abstract

For my Capstone project I chose to do a professional industry experience was at Farmington High School with Scott Meier, Head of Strength and Conditioning. The goals for this experience were to improve my skills in proper form identification, providing instructions, and program development. I spent two and a half months with Mr. Meier assisting him in his weight training classes and working directly with the students. For the research project component, I conducted a literature review and presented a PowerPoint presentation to five high school weight lifting classes on the importance of sleep and its effects on athletic performance. This experience gave me the opportunity to develop the skills I need to enter into the Exercise Science field with the confidence to become a Strength and Conditioning coach.

Keywords: *form identification, instruction, program development, sleep*

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Chapter 1: Before the Experience

Introduction

My name is Jacob Vorhies. I am thirty-five years old, have been married to my wife for nine years, and we have two sons, ages ten and five. I originally went to college for Law Enforcement and had been working as a Corrections Officer for the past ten years. I decided a year or two ago to make a career change and am pursuing my masters in Exercise Science so I can be a strength and conditioning coach. While working on my master's degree, I have been working as a parts manufacturer, which provides me with the schedule I need for school and the professional industry experience for the Capstone project. One day I would like to work with high school or college aged individuals. I have worked with youth in the past as a Corrections Officer, but I want to work with young people in a more positive atmosphere, to help them be physically and mentally healthy.

Student Learning Outcomes

As a student in a CSP graduate program, you are required to meet three programmatic learning outcomes. These are assessed during the Capstone course, for which you will be completing this experience. Below you will find these three student learning outcomes.

By the end of this course, students should be able to:

1. Analyze and synthesize theoretical and research concepts from multiple perspectives in the professional discipline of Exercise Science, Orthotics & Prosthetics, or Sport Management to inform inquiry and practice
2. Integrate scientific research to identify and analyze problems or trends related to the fields of Exercise Science, Orthotics & Prosthetics, or Sport Management to formulate creative responses to these complex issues

3. Model ethical decision-making and respect for differences among people represented in the various aspects of the discipline and in our diverse society

Coursework and Student Learning Outcomes

Being new to this field of study, I did not have much experience working or learning about Exercise Science. A lot of my previous knowledge came from past experiences in physical fitness and interactions with people involved in the fitness industry. My coursework up to this point in the pursuit of my Masters in Exercise Science has allowed me to meet the three learning outcomes of this program.

I have been able to analyze and synthesize theoretical and research concepts in various classes in the Exercise Science program. I feel that each course allowed me to research different concepts pertaining to the specific focus of the course. For example, in the very first course I took in the summer of 2021, Biomechanics in Exercise Science, I developed my skills in assessing proper techniques and body movements. I used the knowledge learned in the course to complete an assignment where I assessed the form of an individual performing the back squat. For this assignment, I used video technology called Kinovea to record the individual's movements and track how far their joints moved. Kinovea also allowed me to track the path of the bar, which showed me some uneven movement. This information allowed me to critique the individual and let me coach them in performing the movement properly. Similarly, before taking the KHS 605 course, Nutrition and Metabolism, I had basic knowledge of metabolism, which I was able to expand upon, especially through an assignment and discussion board specifically related to metabolisms. The discussion board asked the question "Independent of possible medical conditions is there such a thing as a slow, or fast, metabolism?" and the assignment asked us to "explain metabolism and how the body uses/converts food for energy using

both catabolic and anabolic pathways. How does energy balance relate to weight and metabolism?". To answer these questions and learn more about metabolism I used research tools such as the online Concordia library and Google Scholar to find peer reviewed articles that explained how metabolism breaks down nutrients to create and store energy. I was able to explore theories about fast and slow metabolisms including different theories for each side of the argument. I was able to discuss these theories with my classmates on the discussion boards. These assignments and discussions allowed me to analyze and synthesize the concepts by researching the topics, compiling the information, and putting that information into my own words to present to my professors and fellow classmates.

For the second learning outcome, there were multiple courses in this program that I learned how to integrate scientific research to analyze problems and trends in the industry. Throughout the courses of study, I used peer reviewed research articles for discussion board questions and course assignments. The course, Exercise Prescription, had an assignment of a case study of a 72-year-old man with multiple risk factors such as his history of smoking, high blood pressure, high cholesterol, obesity, and dyspnea. I assessed his health issues then used scientific research articles to support my assessments and recommendations for prescribing a low intensity exercise program.

I met the third learning outcome by respecting everyone in my courses and the professors who taught them. I interacted with the other students through the discussion boards and treated everyone with the same respect no matter who they were or their thoughts on a subject, which I found easy to do. There are students in the program who come from different backgrounds. Even though I live in Minnesota, there are students from all over the world. Since I am not currently in the Exercise Science field, I wanted to get to know my classmates including different aspects of

each of their positions. I found it enlightening to learn from each of my fellow classmates. One classmate that I especially learned from is named James Dang. He is currently in the Air Force and is in Japan. He brought a lot of knowledge to our discussions and uses his military experience to provide different opinions on some of the topics. In KHS 580, Mechanisms of Skilled Neuromuscular Behavior, there was a discussion about a motor skill we are proficient at. James talked about his ability to perform the back squat and how this helps him in his current profession in the Air Force. He mentioned how the skill prepares him for emergency operations that may need explosive power and endurance.

Another classmate who I appreciated learning from is Lauren Taylor, who has been teaching for almost twenty years. She brought a lot of experience to the discussions which I appreciated because I think experience is the greatest teacher. In the course KHS 513, Strength and Conditioning, one of the first discussions included what characteristics we thought a successful strength and conditioning coach possess. It also included challenges a strength and conditioning coach might face. Lauren used her experiences in her answers. Her characteristics included honesty with the clients and confidence because you want that trust with the client and you should be able to know the movement or how to use the equipment. The challenge that she mentioned that stuck out was about being reflective in the sense that if something is not working then we must be able to look at what we are doing and make adjustments that benefit the athlete.

When communicating with the professors, I always tried to use a professional tone and respect their position. I always addressed my instructors with the title of “Professor” because it shows respect to the amount of work they have completed to earn that title. I had online Zoom calls with Professor Brenda Davies and always spoke with her politely and with respect for the

time she took to answer my questions. It is always important to me to show respect for everyone I come into contact with.

As for the ethical decision-making portion of this learning outcome, I never put myself in a situation where I would compromise myself or anyone that I worked with. I always told my professors what was going on if I needed help. I never plagiarized any of my assignments or discussion posts. I am an honest person so I pride myself on being truthful and upfront with my work.

Professional Industry Experience and Student Learning Outcomes

My industry experience continued to help me develop these learning outcomes. My industry experience opportunity was with the Farmington High School Strength and Conditioning team. I shadowed Mr. Scott Meier, who is the Head of Strength and Conditioning at the high school. Mr. Meier teaches four weight training classes in a day. He also leads after school weight training for specific sports teams. I spent most of my internship time with him to increase my knowledge of how to run a strength and conditioning class. Often, I spent my time talking with Mr. Meier, assisting the students in their lifts, learning what mistakes to watch for in certain lifts, and how to interact with a diverse student body. My goal was to learn the basics of what it takes to work with youth in a high school program because this is something I would like to do in my future.

In my time at Farmington High School, I was able to continue to analyze and synthesize theoretical and research concepts by having conversations with Mr. Meier about different approaches to weight training and seeing it performed by his students. I then would go back home and research his opinions and concepts that we discussed. One example of this is his thoughts on triphasic training for high school athletes. After our initial discussion, I found that

Mr. Meier had written a blog article about this subject for a website called, SimpliFaster.com. Meier detailed his thoughts on the triphasic approach and gives a breakdown of what he does with Farmington High School. Meier stated that, “Triphasic is fantastic for both beginning lifters as well as advanced. Everyone can use it and will benefit from doing so. There really are no right or wrong ways to apply the triphasic training principles. They can be very flexible, and coaches can apply them in ways that work best for them and their situations. Continuous tweaking and modifying can always occur. Don’t be afraid to experiment.” (Meier, 2021, para. 54-55) This info really made me feel like there may not be one right answer and it is up to me to decide what is best for the athlete and why.

Later in my internship, Mr. Meier wanted to try something different with some of his advanced students. He wanted to test the theory of unilateral lifts instead of bilateral lifts. He implemented this on lower body exercises such as the single-legged Romanian deadlift, single-legged leg press, and Bulgarian split squats. I did not stay long enough to see the final results of this training but I do know that the athletes were enjoying the challenge when I was there.

My internship did not directly have me doing any scientific research while I was there. Since it was a high school setting, I mainly worked with the students to help instruct them on proper technique. For that task, I used the information that I learned in previous courses including, Biomechanics in Exercise Science. Closely related to Mr. Meier’s exploration of unilateral lifts, I collected some peer-reviewed research articles to bring to Mr. Meier so we could discuss the information I found. One article that we discussed was by Kurt Mullican and Ramsey Nijem (2016) titled, *Are Unilateral Exercises More Effective Than Bilateral Exercises?* This article discussed some of the points of unilateral lifts versus bilateral lifts. The main difference between the two types of lifts was the bilateral force deficit (BLFD), which happens

when the force created by individual limbs are added together and the total is greater than the force created while the limbs are used at the same time. This opened some discussion between Mr. Meier and I. As the article points out, “The BLFD appears to be more prominent in untrained or less trained populations, suggesting the phenomenon is influenced by training and sport history ” so unilateral training at the high school age should prove to be beneficial to reduce the deficit. (Mullican & Nijem, 2016)

In order to meet the research requirements of the experience, I prepared a presentation that presented scientific research on sleep and athletic performance. I selected this topic after speaking with Mr. Meier about research topics; he identified that sleep and rest were his top choices because it seemed to be a big issue with the students that he works with. For the presentation I focused on finding information about sleep and the effects it has on athletic performance. I prepared a PowerPoint presentation to that I presented to the students in Mr. Meier’s classes. This information is detailed in the next chapter.

During my industry experience I worked with various teachers and coaches that come from different backgrounds. The students that I worked with were from all different genders, races, and ethnicities. I interacted with each of them with the same respect and professionalism as I would anyone else. In one of the classes, there was a group of Developmental Adapted Physical Education (DAPE) students that had an additional teacher with them. I helped the teacher understand some of the lifts and movements since she was not used to coaching or instructing weight training exercises and did not know how to do some of the lifts. It was a great experience and something that I did not think about when entering this experience.

Professional Industry Experience Goals

Three skills that I planned on improving in my industry experience were proper form identification, improving on giving instruction, and learning more about program development. I wanted to focus on the things I could not learn online or through books, since I have little to no experience in the industry.

In the future I would like to be a Strength and Conditioning Coach. Knowing the proper form for each exercise is key to helping each athlete perform the lift correctly. When working with youth, they do not always have experience performing certain lifts. Therefore, as a coach I need to be able to recognize what they are doing wrong and help them correct their mistakes. My time with Mr. Meier was a great way to see an experienced coach give helpful critiques to young athletes who are beginners at weight lifting.

I have worked with youth before but in a totally different setting. As a Corrections Officer, my interactions with juvenile clients were more of a commanding presence and telling them what to do. It was a negative atmosphere and I want to work in a positive atmosphere. Communication is key to building rapport and trust with the athletes. My industry experience helped me develop a better way of communicating with young athletes. My experience working with the DAPE athletes emphasized that communication is very important. I was able to work on changing the language of the provided instructions so that these students understood what they needed to do. Being able to slow things down and simplify instructions are an important skill when working with both youth and those who have a disability.

The last goal for my industry experience was to learn more about program development. As a Strength and Conditioning Coach, I will have to be able to create programs for diverse athletes. In such a position, I will be evaluating each athlete and deciding what is the best

approach for each individual. I saw Mr. Meier do this with his students during the industry experience. The first two weeks of the trimester were used to evaluate each student and their max strength in the back squat, front squat, bench press, hang clean, vertical jump, and 40-yard dash. In this setting, the program was mostly the same for every student, so I did not get to see too much individualization. Mr. Meier would set up the schedule for the class using an app called TrainHeroic. This app allowed each student to put in their one repetition max (1RM) for each lift and the program would then do the calculations for sets, repetitions, and percentages of 1RM weight for each lift they were to complete for that class. For example, if a student was to do bench press and do three sets of eight reps at 70%, the app would automatically show them what 70% of their max is and it would simplify the process so they did not waste time trying to calculate how much they should be lifting. Mr. Meier was in charge of setting the lifts in the app each day and would program the app for the whole trimester. I was able to view the program that he set for his students. In October, there was an event called “Squatober” that had the athletes do squats for the whole month of October. Using different variations, percentages, and weight loads ultimately the results showed that most of the students increased their one rep max in their back squats. This month-long event provided a different approach to program development that provided a change for the athletes to keep them interested in the class.

Conclusion

In the end, my time with Mr. Meier and the rest of the Farmington High School Strength and Conditioning staff was very informative. It allowed me to see what it really is like to work with youth athletes in a weight training setting. This experience helped me achieve my goals for the professional experience. I was able to observe more athletes that I would have ever imagined. The different levels of athletic experience helped me identify some mistakes made by those with

less experience and the importance of skill level. The atmosphere that Mr. Meier and the other coaches have created made it easy to approach the students to give them feedback and instruct them on their lifts. While I wish there was more individualization for the programming component, I feel like I got to experience what it is like for professionals in a school setting. It is easier for Mr. Meier to set a general program for each student to follow. This helps in the grading component of being a teacher by creating a set of lifts that the students are to perform and increase their 1RM and then grading them on those lifts. This creates a measurable component for the teacher to grade. This is not exactly the path that I plan to follow because I don't want to be a classroom teacher but it allowed me to learn his thought process and how he adjusts his programs for each class. Overall, this experience gave me a great look at the professional side of Exercise Science and gives me some experience to take in the field after I graduate.

Chapter 2: During the Experience

Introduction

Since my industry experience was set in a high school it was hard to find a project that I could actually perform in the classroom. I spoke with one of my professors, Dr. Brenda Davies, to identify routes for completion of the research component. I then spoke with Mr. Meier about different topics that he feels teenagers struggle with concerning their physical fitness. We agreed that I would create a PowerPoint presentation about the effects of sleep on athletic performance.

To find information that dealt with sleep and its effects on athletes, I used the Concordia online library. I found peer reviewed original research articles and literature reviews that had information about youth sleep recommendations and the effect of sleep on athletic performance. I compiled this information together in a PowerPoint presentation. However, I did have to present in a total of five minutes so it would not take up too much in class and allow the students to still finish their workout program for the day.

The results that I found were not surprising. They showed that sleep is very important to both athletes and non-athletes because it helps improve mood, decreased fatigue, and helps prevent injuries and illness. Most people know that sleep is important, but they do not get enough. It was my job to show the students why sleep is important to athletic performance. I found articles that detailed what negative effects lack of sleep can have on an athlete. For example, one article that I found during my research states, “Athletes who slept on average <8 hours per night were 1.7 times more likely to have had an injury compared with athletes who slept for ≥8 hours.” (Milewski et al., 2014). I also found an article that gave tips for getting more sleep and better-quality sleep. These tips included creating an appropriate sleep environment, having a wind-down routing, and staying away from electronics in the hours before bedtime. (Fry, 2022) For a full list of the references used in the presentation, see the final reference list to

this paper. I was able to put all this information together and present to the students the information on why they should be getting more sleep to increase athletic performance.

As I look towards my future, I can use the information from my research as a Strength and Conditioning coach. It is not just my goal to be able to instruct individuals how to perform exercises, but also to be able to provide information about what can help them improve their performance overall. This may include information about nutrition, supplements, and sleep. I want to be well rounded as a coach and the best leader possible. By using the analytical and research skills I developed in the program, I will be able to continue to present youth athletics with valuable information.

Experience Location Deliverable

My deliverable is a PowerPoint and is included as an attachment with this paper.

Conclusion

To conclude, my focus for my research project was to provide information on the importance of sleep and its effects on athletic performance. Using Concordia's online library and Google Scholar, I prepared and presented a PowerPoint presentation to the classes that Mr. Meier teaches. This information is important and will continue to be important when I become a Strength and Conditioning coach in the future because sleep and rest are important factors to healthy living and athletic performance.

Chapter 3: After the Experience

In review, my professional industry experience was with Scott Meier who is the Head Strength and Conditioning Coach at Farmington High School. I also researched the importance of sleep and its effects on athlete performance. I put that research into a PowerPoint presentation and presented it to the students. This is significant because it gives me experience executing a literature review and presenting the findings to young athletes. It gave me a real opportunity to provide information to help athletes understand how an increase in their sleep which will help could increase their athletic performance.

Review of Student Learning Outcomes and Experience

Looking back at the three student learning outcomes I was able to analyze and synthesize theoretical and research concepts by assessing Mr. Meier's triphasic program and completing research at home exploring the benefits of this training style. Additionally, I was able to integrate scientific research to identify and analyze problems by researching the benefits of unilateral and bilateral exercises. I was also able to integrate scientific research in my project about the benefits of sleep and athletic performance. I was able to model ethical decision-making and respect for differences among people throughout my experience. No matter what the backgrounds of the coaches and students, I treated them as individuals and did my best to build rapport and trust to strengthen the relationships.

Experience Goals and Skill Reflection

During my experience, I wanted to really focus on building and developing my skills that can only be done in person. The three skills I thought I needed the most help with were proper form identification, improving on giving instruction, and learn more about program development. Overall, I increased my skills on all of these goals. I became more confident in

identifying mistakes made during a lift. I became more comfortable in providing instruction and feedback to the athletes. I also learned some basics of developing a strength and conditioning program. I learned a lot from this experience and it helped me get comfortable with going into this profession.

Supervisor and Colleague Support

Everyone that I worked with at Farmington High School was friendly and extremely helpful. Mr. Meier was the main person I worked with. Mr. Meier has been teaching physical education and a Strength and Conditioning Coach for Farmington High School for 22 years. He has experience coaching weightlifting and also has experience as a personal trainer. In 2020, Mr. Meier was named the NHSSCA Mid-American Region Strength Coach of the Year. (See Figure 1 for a statement from Mr. Meier about my presentation) His way of coaching and teaching his classes taught me a lot about how to work with young athletes. He would show me what to look for when an athlete was performing a lift and how to address the athlete. He is full of knowledge about different types of exercises and programs that are beneficial to the athlete. The short amount of time I got to spend at the school, I learned a lot because of Mr. Meier and his willingness to work with me and teach me what he knows.

Limitations of Experience

The only limitations of this experience that I can think of is my lack of availability and not being able to do individual programs. I work full-time and have a family, thus I could not afford to do an experience every day, so I was only able to do it once a week. This limited my time with the students and working with the coaches. If I would have been able to do a full-time experience, I could have done a lot more with setting a program or doing more assessments. The other limitation was that it was in a high school setting, so the program was general for all

students. This allowed Mr. Meier to set a baseline and then made it easier for him to grade. If I went to a sports performance center or a college, I would have been able to see more individualized programs.

Application to Future Career

The things I am most excited about for my future that this experience has given me are the positive atmosphere, comradery, and an environment of always learning. I used to work in such a negative environment that getting to experience a place where everyone is upbeat and wanting to be there was a wonderful feeling. When everyone wants to be there, works hard, and trusts in each other, there is a comradery with both the athletes and the coaches that I really enjoy. With sports and athletics, there is always more to learn. I am just starting my journey in this career field; thus, I have a ton to learn still. This experience has given me just a taste of the future and has put a desire in me to learn as much as I can so I can be the best coach I can for my future athletes.

Conclusion

The purpose of choosing the Professional Industry Experience for my Capstone project instead of the thesis option was to gain firsthand experience in the Exercise Science field. I am not currently in this profession and wanted to gain experience before officially making the transition. My goal is to work with youth athletes so the opportunity to intern at Farmington High School was a great option. There were limitations with my schedule but the time I was able to be at Farmington was very informative and prepared me to enter the exercise science field. I was able to improve my proper form identification, my ability to give instruction, and provided me with a look at creating an exercise program. The most important thing for me to take away from this is just knowing what it is like to work in this field. It is such a different career than my

previous field. This experience confirmed to myself that I still want to pursue this career path. This internship gave me the confidence to know that I can be an excellent Strength and Conditioning coach.

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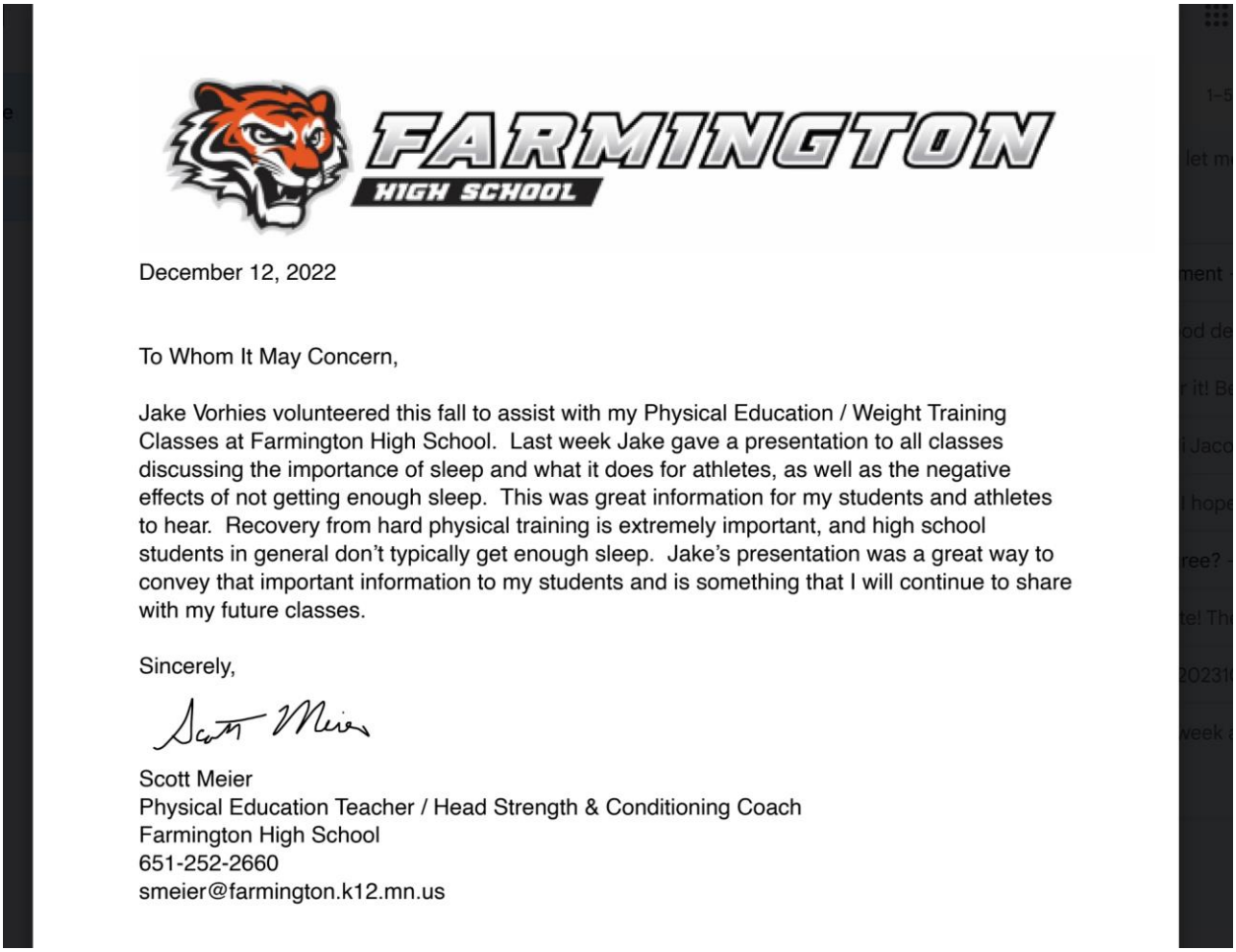
Figures:



FARMINGTON
HIGH SCHOOL

December 12, 2022

To Whom It May Concern,

Jake Vorhies volunteered this fall to assist with my Physical Education / Weight Training Classes at Farmington High School. Last week Jake gave a presentation to all classes discussing the importance of sleep and what it does for athletes, as well as the negative effects of not getting enough sleep. This was great information for my students and athletes to hear. Recovery from hard physical training is extremely important, and high school students in general don't typically get enough sleep. Jake's presentation was a great way to convey that important information to my students and is something that I will continue to share with my future classes.

Sincerely,

Scott Meier
Physical Education Teacher / Head Strength & Conditioning Coach
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Figure 1