

# Inquiring Minds: Helping PETE Students Develop and Apply Undergraduate Research



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# Activity: What do you think?

- Briefly visit 2-3 posters
  - Jot down a few thoughts and impressions

*You're not going to hurt our feelings;  
honest dialogue appreciated!*

# We are charged with guiding teacher candidates to learn and apply:



Sound  
Pedagogy



Pedagogical  
content  
knowledge



Professional  
dispositions



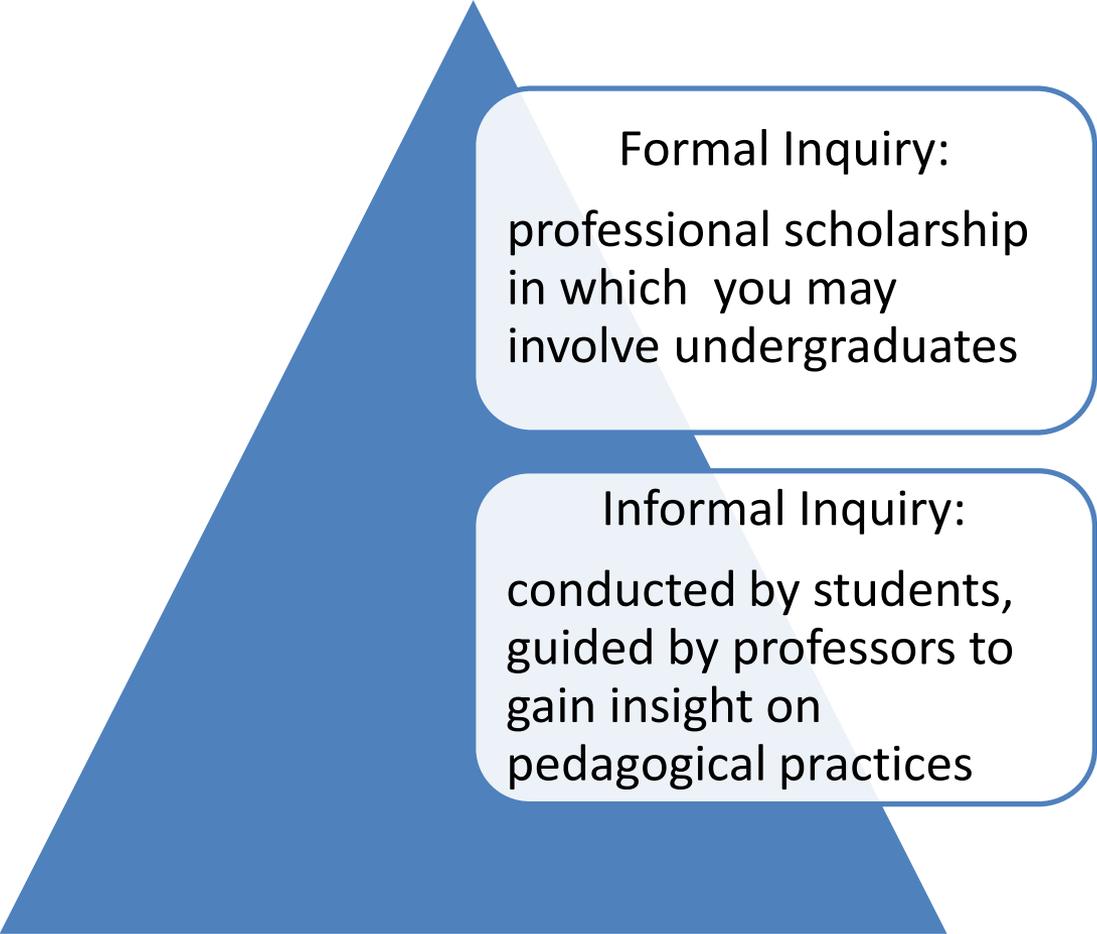
# Research suggests:

- *Teachers do not perceive themselves to be participants in or users of research.*
- *However, best practice requires the acknowledgement that methods and content must evolve with children's needs.*

*(Sari, 2006)*



# Let's operationally define research:



Formal Inquiry:

professional scholarship  
in which you may  
involve undergraduates

Informal Inquiry:

conducted by students,  
guided by professors to  
gain insight on  
pedagogical practices



**In addition, as PETE educators, we are charged to help our students ...**

5.3 Utilize the reflective cycle to implement change in teacher performance, student learning and/or instructional goals and decisions.

6.2 Participate in activities that enhance collaboration and lead to professional growth and development.

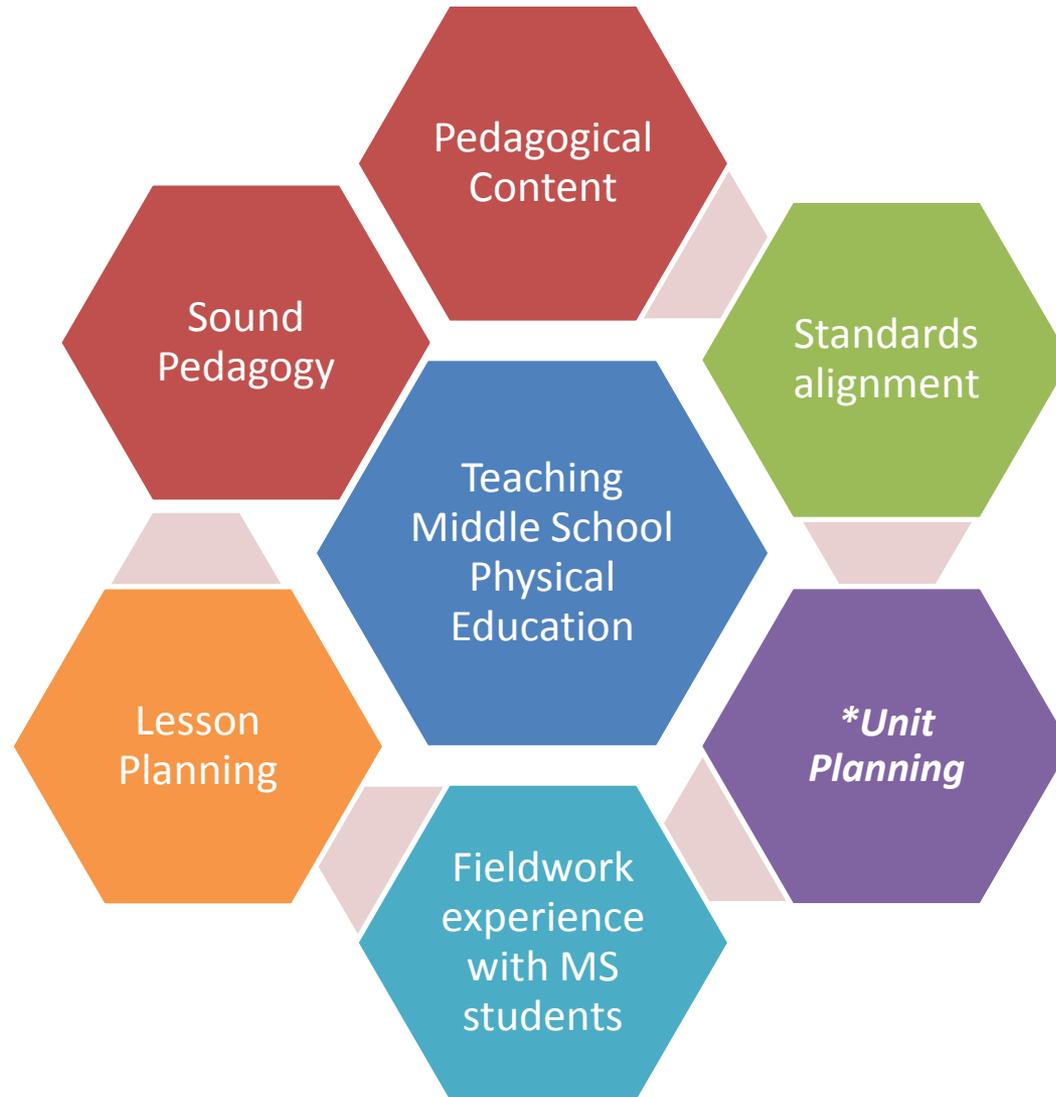
(NASPE, 2008)

# Purpose for Students Exploring their own curiosities



- Student teachers have to follow mentor teachers guide and district scope and sequence
- Middle Schools
- PETE students need opportunity to experiment – modeling what were tasking them to teach

# In a perfect world ... PETE student inquiry would be added to ...



# Content covered prior to the research project

Middle School students' characteristics and developmental learning needs.

GLSP - appropriate task selection and progression for the age group.

Teaching Middle School Course Content

Promoting Personal and Social Responsibility – Hellison's TPSR

Activity categories, writing measurable lesson objectives aligned to state standards.

# *How was student inquiry guided?*

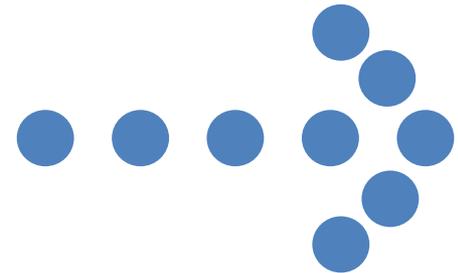
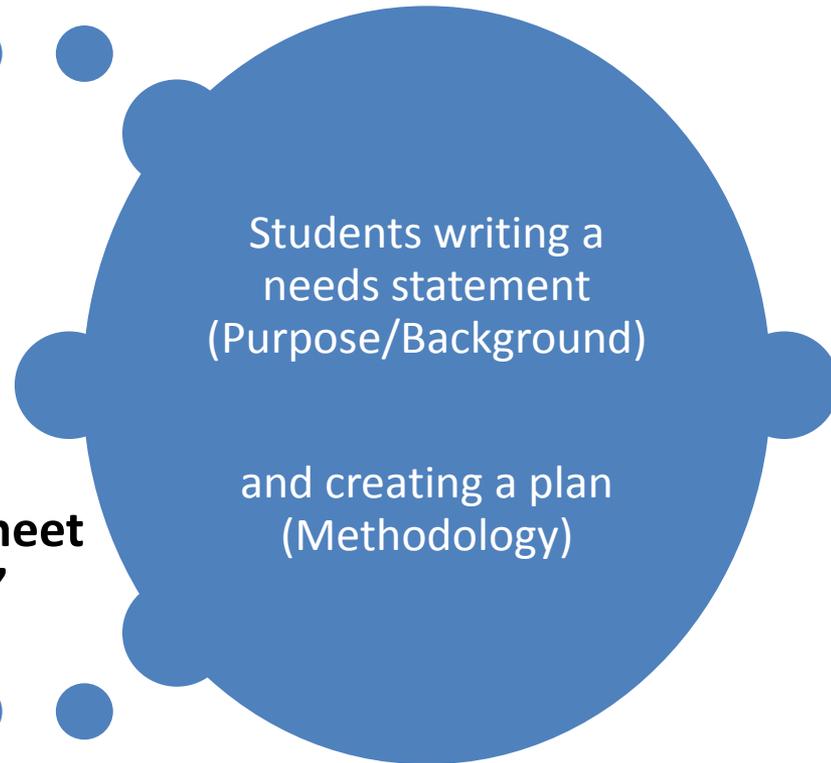
**Theme or topic selected by professor aligned with a particular NASPE outcome.**



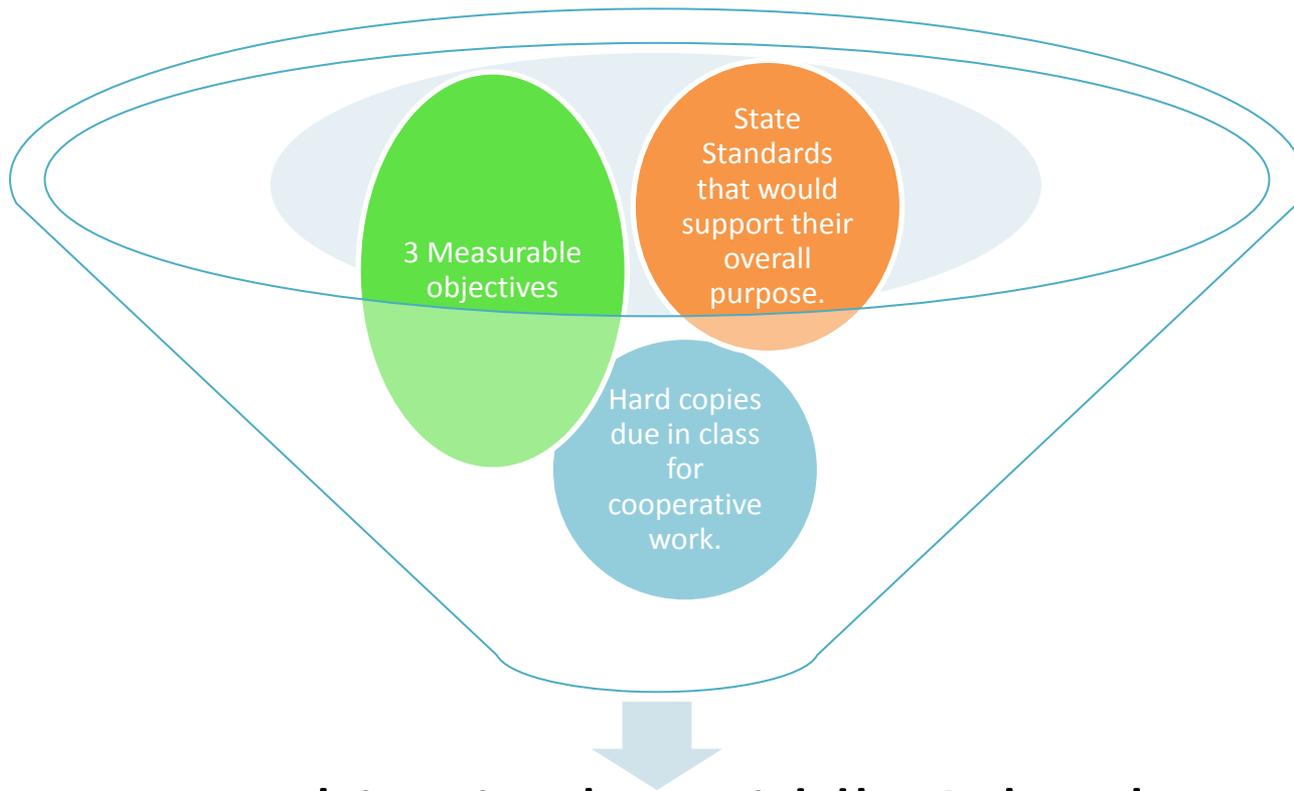
**Discussion of current trends/investigation of teaching.**



**Student discussion on teaching strategies to meet middle school students' needs.**



# Once they knew their purpose ...Lesson Planning



Teaching in the Middle School  
(Project Implementation)

# 2008 – Middle School Community Needs

- **NASPE Outcome 6.2:** *Participate in activities that enhance collaboration and lead to professional growth and development.*
- **Guiding Question:** What are the needs of this particular middle school to be able to increase students' level of physical activity?
- **PETE Students Creation and Implementation Process**
  - Time with young adolescents
  - Lead up assignments and planning for activity
  - Requirements
  - Challenges to the process

# Before School Activity Program

Ashlynn Antoni

John Crews

## Abstract

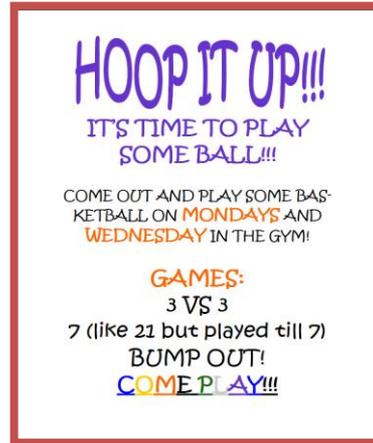
Inactivity and the growing epidemic of childhood obesity are some of the reasons it is vital to develop a responsive activity program for middle school students. Young adolescents are in a pivotal stage of developing mentally and physically. This is the time when we need to spark their interest in becoming active for life by assisting them in discovering activities that are not only fun but also motivating for them. This program will provide students with the opportunity to engage in physical activity while contributing to their knowledge of different ways to be active.

## Needs

During adolescence children are going through essential developmental stages. Social, emotional and physical development need to be taken into consideration when creating appropriate activities. Due to the physiological differences between boys and girls it is important to recognize these differences when incorporating a successful and beneficial program.

## Purpose of the Project

The purpose of this project is to develop and implement a before school activity program designed specifically to meet the needs and interests of students at the middle school level. Based on what we know about the characteristics of young adolescent's, and factors that influence their participation in physical activity as described above, it is important to develop physical activity programs that meet the needs of this population.



## Methodology

To determine what the kids were truly interested in we went to the school and asked students open ended questions such as, "what are some activities you like to play", "what's your favorite sport", and "if we had an activity program before school would you come". Our main goal was to get in a conversation with these students and learn what they wanted to see in a before school activity program. We had a lot of really great feedback and gained knowledge of the student's personalities and some activities they might be interested in trying.

We chose to offer individual activities such as jumping rope, self-defense, weight lifting, and turbo jam to provide students who want to participate in physical activity a chance without putting them in uncomfortable social settings. Along with individual activities we provided group sports such as basketball, volleyball, soccer, and medic.

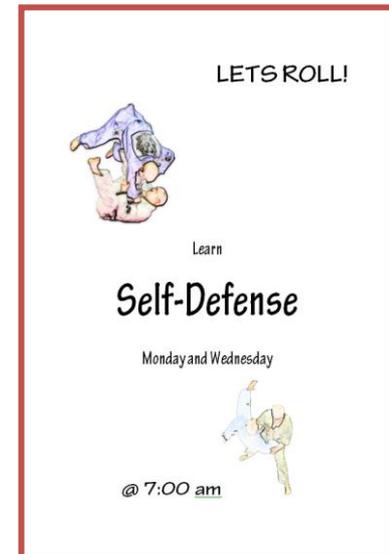
These activities took place in the gym, the weight room and the stage in the gym at a local middle school. This took a group of dedicated individuals to make sure they are at the school with the necessary equipment along with delegated responsibilities of who will run what activity.

## Results

We had a lot of participation during the program. We found the team sports such as basketball and volleyball were the most popular. Although the alternative activities like self-defense, weight room and turbo jam were a little less popular they provided students with different perspective on physical activity therefore opening their minds to a unique workout. It is clear according to the results of our project that kids just want to play and if we simply provide the opportunity they will.

## Discussion

This project has brought more attention to the problem of inactivity in today's youth. We designed our program around the idea that we could contribute to the overall health of the students if only for a short period of time. We did this project in hopes to inspire others to come together and create more opportunities for kids to be active.



## Abstract

Our project was designed to help the Flagstaff Middle School students be more physically active in the mornings. We established goals for our project. These goals were:

- Provide students with an alternative activity in the mornings.
- Motivate students to become engaged in physical activity.
- Try to enhance students' self-esteem.
- Potentially improve their academic success.

## Needs

Middle school students have needs in all three domains; affective, cognitive and psychomotor. To meet the needs of the affective domain we provided them with many opportunities to socialize with their peers. We brought in new and different activities that some students did not know how to play which affected their cognitive domain. Also a study recognized by NASPE (2002) indicated that middle school students who are more physically fit perform better academically in school. Students at this age are growing and it is important for them to be physically active which has an impact on their psychomotor domain.

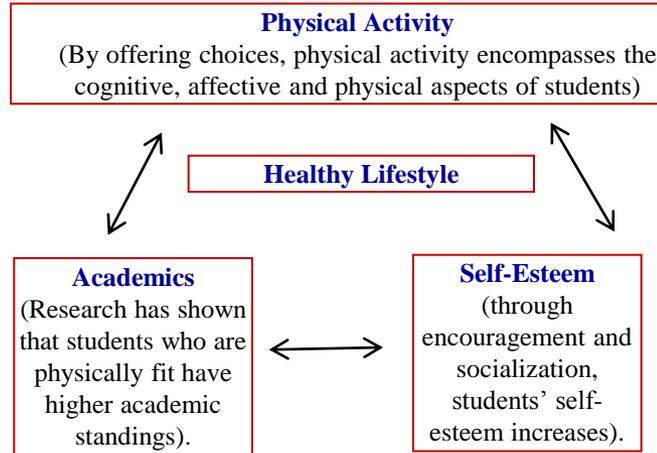
## Purpose of the Project

The purpose of this project was to offer students an opportunity to be physically active in an environment that offers choice, fun activities, and a chance to socialize. We provided the students with an opportunity to enhance their self-esteem and potentially impact their academic success.

Angela Barnes  
Maria Braun

Sara Ethington

Courtney Quinn  
Brandi Waugh



## Methodology

To meet our goals, our group offered a wide variety of physical activities to engage students before school. Our group met at Flagstaff Middle School from 7:00am-7:40am, Monday thru Friday, March 2<sup>nd</sup> -12<sup>th</sup>. A group member was in charge of an activity each week. The person in charge informed the students of the activity being provided, what they wanted the other group members to do, and provided a safe environment. Flyers were posted around the school and a boom box was used to attract students. Each activity implemented the developmental needs such as socialization and choices.

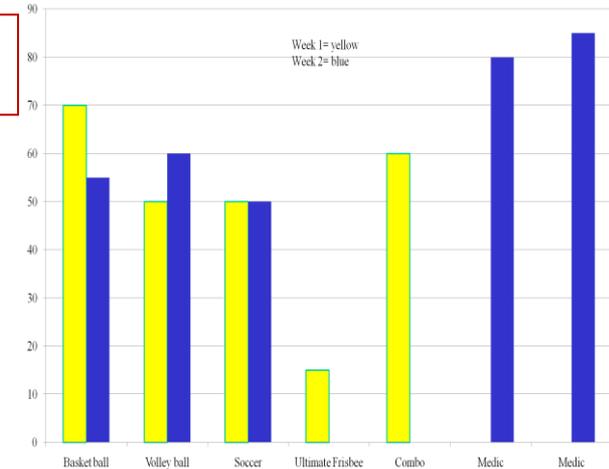
### References

Knowles, T., & Brown, D. (2000). What every middle school teacher should know. Portsmouth, NH: Heinemann.

National Association for Sport & Physical Education (2002). New study supports physically fit kids perform better academically. Retrieved February 11, 2009, from [http://www.aahperd.org/naspe/template.cfm?template=pr\\_121002.html](http://www.aahperd.org/naspe/template.cfm?template=pr_121002.html)

## Results

### Before School Activity Program



## Discussion

Young adolescents are going through many different developmental issues. These issues include social, moral, and emotional aspects as well as searching for their identity. The students would only join in activities that their friends would play. Some students had an attitude, which had negative connotations with the activities being played. Exploring the activities with their friends, however, helped students to enhance their self-esteem. This is evident because in the second week some students joined in without their friends.

This before school activity program was an amazing experience for us. We realized that being overly prepared is important. By having some understanding of young adolescents, we were able to prepare ourselves in order to provide a positive experience for the students at Flagstaff Middle School.

Overall, providing a program that effects the affective, cognitive and psychomotor domains of an adolescent is important for a healthy lifestyle.

# 2009 – Teaching Strategies: Styles and Tools

- **NASPE Outcome 3.1:** *Design and implement short and long term plans that are linked to program and instructional goals as well as variety of student needs.*
- **AND/OR 3.7:** *Demonstrate knowledge of current technology by planning and implementing learning experiences that require students to appropriately use technology to meet lesson objectives.*
- **Guiding Question:** What might you want to try either in a regular PE classroom or before school setting that you are curious about?
- PETE Students Creation and Implementation Process
  - Lead up assignments and lessons
  - Requirements
  - Challenges to the process

# Reciprocal Teaching Using Video Cameras

Pat Tucker, Zac  
McNally, Eric  
Sparenga,

Cristian Carlesso,  
Josh Gustafson

## Abstract

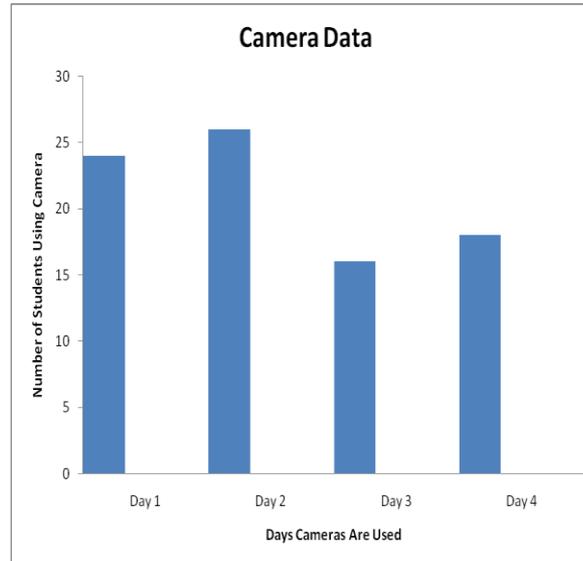
Our middle school project took place at Flagstaff Middle School during the month of March. Our middle school lesson project went away from the traditional teaching methods and focused on reciprocal teaching by the students. We used video cameras in our lessons to help the students visually see themselves during the activities. Our lessons were directed at smaller groups so that one group at a time could make use of the technology. We found at the conclusion of our project for the use of the video cameras to be beneficial for the students. When the cameras were used we found that each student's form improved and they could identify what cues were being focused on in the lesson. After being a part of this experience we all came out with an understanding of how technology and video cameras can support learning in the physical education realm.

## Needs

For our program we will need video cameras, lesson plans, whistles, and appropriate equipment for each day's activity. This behavior provides the learner with the opportunity to make post-impact decisions

## Purpose of the Project

The main purpose for bringing technology into the classroom is so that students have the opportunity to guide what they are going to learn. By using technology such as video cameras the students will be able to visually see their performance a number of times to recognize the appropriate form and correctly cue one another. The purpose of this class project is to show students the benefit of using technology in a physical education classroom.



## Methodology

Our group is going to meet the needs listed above by providing student assisted lessons in pickle ball and fitness. This means allowing the students to use video cameras to assist a fellow student during an activity. We are offered this instruction at Flagstaff Middle School in the month of March.

## Results

This project consisted of six days of instruction; three days of Pickleball and three days of Groups Fitness. Each of the five instructors used a camera four out of the six days to enhance instruction. Students were taken aside from the class in groups of three or four to film each other and give feedback on proper technique and cue usage. Journals were kept for everyday to keep track of the results. When the cameras were used we found that each student's form improved and they could identify what cues were being focused on in the lesson. We thought that the students were not paying attention or learning during instruction. Although once the cameras were used and the students were giving feedback, we were pleasantly surprised that they were paying attention to the cues that were given during instruction.

### Project Goals

Our first goal was to offer another way of instruction. We used video cameras and reciprocal teaching style so that the students can see video footage of their form and use it as a tool to correct their mistakes.

Our second goal was to give the students more opportunities for self-learning. This was accomplished by the use of the cameras and having them correct themselves and their peers after watching the video footage that they shot of each other. After viewing the video footage, students offered pointers to each other that helped their form and master the cues given during instruction earlier in the class.

Our third goal was to provide more peer interaction specific to the lesson. This goal was obtained by having the students talk to each other about the cues that they were working on during class after they got done filming one another.

## Discussion

This project was great learning experience for all of us in the group and opened our eyes up to new teaching styles. We had some bumps in the road, although efforts toward getting the students to participate and stay on task we were successful. The cameras were discovered to be very useful in helping the students actually see their performance. The first day we used the cameras we noticed that as a whole the students were more on task then when we did not use the cameras. The students that gave us some trouble staying on task became engaged when either controlling the camera or having the camera on them. After watching the recordings the students actually discussed and shared some insights about each other's performances including form and cue accuracy. The males that we asked to participate with the camera and reciprocal teaching all participated while the females tended to be more focus on their physical appearances instead of the skills. At the end of the week we opened up a discussion to the students asking them questions regarding how beneficial the use of the cameras was. The students responded positively mentioning that actually watching their performance motivated them to try harder.

Conclusion, the cameras would be useful in the physical education realm. From our experiences we expect that camera use in the Physical Education setting will be beneficial for both teachers and students.

# Pedometer Power !

## The Influence of Pedometers in a Middle School Setting

Jessi Jones, Lauren Whitaker, Kim Skinner, Kat Ashley,

Danielle O'Reilly, Brian Mitchell, Natalie Robles

### Abstract

The use of pedometers at the middle school level has the potential to motivate students. The visual recognition of work being done could inspire more movement and physical activity among students. The use of pedometers provides another opportunity for physical educators to encourage daily physical activity. Students are able to personally monitor their daily activity and set goals based off of their results.

### Needs

Curricular development at the middle school level supports social, emotional and physical needs of middle school students. Each middle school student is unique and individual, and we strive to create an atmosphere that engages all personalities. It is key to have an assortment of activities available to middle school students to help them be intrinsically motivated toward exercise and physical activity.

### Purpose of the Project

The purpose of this class project is to compare and contrast pedometer data between group exercise and pickle ball in middle school students. We plan to identify the benefits of pedometers and show middle school students how they can utilize pedometers in daily life. Ultimately we aim to promote healthy, lifelong physical activity habits through exercise:

Our goals for this project are:

- Meet March 3, 5, 6, 10, 11, 12 at Flagstaff Middle School with approximately 60 eighth grade students.
- Teaching proper pedometer protocol to all students.
- Meet state standards for both activities.
- Meet objectives for all six lessons.
- Record the steps taken for each student for all six lessons taught.



### Methodology

Students were given pedometers at the start of each class period. On day one we instructed the students on proper pedometer use. Pedometers helped them visually see the rewards of their physical activity level. The pedometers seemed to be a motivating tool and encouraged students to work harder each day to beat their previous number. Our study of physical education and pedometers reveals a direct correlation between motivation and physical activity levels. We noticed varying levels of excitement not only day to day but between pickleball and group exercise as a whole. Students were empowered by the experience and realized how they could successfully incorporate pedometers into their everyday life. Our data indicates increased number of steps taken over the course of each unit.



### Results

Average Steps Per Day

	Day 1	Day 2	Day 3
Group Exercise	943	1217	1331
Pickleball	1308	1358	1667

We found that our overall steps increased throughout the week. Pickleball consistently had more steps than group exercise, regardless of the lesson. Group exercise measured 943 steps on day one, compared to 1308 steps from pickleball. The step counts from the first day reflected the amount of time spent on instruction. We can see this as the step counts increased over the next two days. Day two of group exercise netted 1217 steps compared to 1358 steps from pickleball. The second lessons consisted of pickleball and kickboxing stations which helped to increase the overall steps on pedometers. The final day of both activities displayed the greatest number of step counts: 1331 steps from group exercise and 1667 from pickleball. The third lessons consisted of pickleball tournaments and create your own combination for kickboxing.

### Discussion

Our data indicates increased number of steps taken over the course of each unit. Although we created six unique lessons, we quickly realized how important it is to make modifications and reflect while teaching

Upon conclusion of this service project, we were enthusiastic about incorporating pedometers into future physical education lessons. We are curious as to how other sports would be affected by the use of pedometers. For instance, we would be interested in comparing soccer and badminton pedometer steps. We would also like to compare two games in the same activity category, such as football and basketball (invasion classification). Our study of physical education and pedometers suggest a correlation between pedometer use motivations for increased physical activity levels

# 2010 – What might motivate Middle School students to engage in PA?

- **NASPE Outcome 3.1:** *Design and implement short and long term plans that are linked to program and instructional goals as well as variety of student needs.*
- **Guiding Question:** What might you want to try in a regular PE classroom setting that you are curious about with regard to motivating Middle School students to be physically active in and outside of physical education?
- **PETE Students Creation and Implementation Process**
  - Lead up assignments and lessons
  - Requirements
  - Challenges to the process

# REDIRECTING DIRECT INSTRUCTION: A LOOK AT ALTERNATIVE TEACHING STYLES

Taylor Brock, Kirk Sampson, Paul Nelson

## Abstract

Middle School students require different teaching methods besides direct instruction. We implemented reciprocal and inclusion style teaching methods to 106, 7th and 8th grade students. We examined each teaching style over the course of 3, 1 hour Physical Education class periods in the Flagstaff Unified School District. We observed and collected data regarding two parameters: 1) the effectiveness in terms of learning, and 2) the most enjoyable for the students. We found inclusion style teaching to be more enjoyable to the students, while the reciprocal teaching lessons showed to be more effective in terms of student learning.

## Needs

Middle School students possess a unique set of physical, emotional, social and developmental needs. Young adolescents need social development and self discovery and these considerations need to be taken into account when designing a curriculum for middle school students. Middle school students need social involvement as well as a change to discover and create their identity (Leiberman, 2004). When provided with options and alternative teaching styles other than direct instruction, middle school student's interest and overall enjoyment is positively affected. This is important for young adolescents because enjoyment of physical education has shown to be the most influential advocate in promoting physical activity for a lifetime. We as physical educators need to shift our thinking not only about what is typically taught, but also how it is taught.

## Purpose of the Project

The purpose of this project was to examine inclusion and reciprocal teaching styles with regards to student learning and student enjoyment.

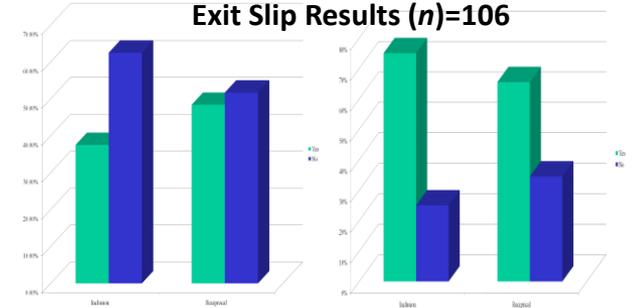


## Methodology

- **Lesson 1, Inclusion:** This method allows students to choose their own level of difficulty. This is a great way to include all students in each activity, regardless of skill level. The difficulty lies in making sure students challenge themselves.
- **Lesson 2, Reciprocal:** This method gives students the freedom to work in groups, while learning through performing the activity and receiving feedback from other students. This is advantageous because it frees up the teacher from direct instruction, while still conveying more complex cues and instruction. The downside is that students can easily become off task if the instructor is not paying attention.
- **Implementation:** Each day, one NAU student was in charge of overall instruction, while the others walked the class providing extra instruction and feedback. For each new lesson, we rotated which of us was in charge.
- **Data Collected:** At the end of each lesson, we handed out exit sheets to each student. These sheets asked questions from which we could gauge student's interest, as well how much they learned.

## Results

### Exit Slip Results (n)=106



Were students able to identify specific cues after the lesson?

Did students enjoy the lesson?

## Discussion

The first question we examined through this research was the student knowledge and learning. We collected data to determine whether the students learned specific cues given after both inclusion style teaching and reciprocal style teaching. The reciprocal teaching lesson required students to peer assess and complete a task sheet checking for appropriate cues given throughout the lesson. We found that through this methodology, 48.3% of the students were able to remember the cues given throughout the lesson. After the inclusion style teaching lessons, however, only 37.5% of the students were able to recall the cues discussed throughout class.

The second parameter we focused on was the overall student enjoyment of the lessons. Where 75% of students enjoyed the inclusion style teaching lesson, 65.5% of students enjoyed the reciprocal teaching style. Being able to modify the lesson was essential to our success. Students did take well to both styles of teaching as there is some choice in each method. In conclusion, we found that although inclusion style teaching was slightly preferred by students (4.5% more than reciprocal), reciprocal style teaching proved to be more beneficial in terms of academic learning and knowledge of the sports skills.

## Abstract

This project was designed to examine the use of novel activities such as advanced stretching (yoga) at the middle school level. We were interested in seeing if we could increase interest and promote overall learning. Therefore we designed and presented three lessons incorporating advanced stretching (yoga) and measured middle school students interest with task sheets, participation counts, and exit slips. After introducing the lessons and interpreting the data we found that the majority of students said that they would engage in advanced stretching (yoga) outside of class, which is an implication for school learning.

## Needs

Middle school students are a unique and interesting group of individuals that have specific needs in terms of education. Middle school curriculum must support the opportunity to socialize, provide a feeling of empowerment, and offer numerous choices to be physically active. We ensured that our classroom environment had a plethora of choices and opportunities to socialize. Advanced stretching (yoga) is not normally a social activity but we altered the activity to meet the needs of middle school students. Through meeting middle school students needs interest is increased and learning is encouraged.

## Purpose of the Project

The purpose of this project was to see how novel group fitness activities such as advanced stretching (yoga) would be received at the middle school level. Adolescents level of interest and what impact it would have on learning was also examined.

### Project Goals:

- Expose middle school students to a novel activity
- Pique interest and encourage learning with a novel activity
- Give middle school students another activity to participate in during their daily physical activity.
- Meet the specific needs of middle school students with each of our lessons

Anthony Williams

Christine Thomas

Brittany Adame



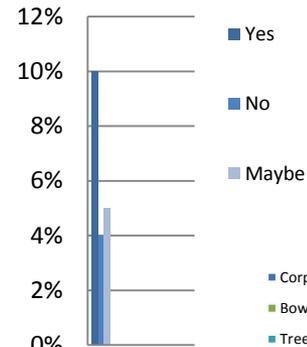
## Methodology

In order to see if middle school students would be open to our novel activity of advanced stretching (yoga), our group taught our lessons at Flagstaff Middle School during their first period Physical Education class that met from 7:50 to 8:55 a.m. on March 2<sup>nd</sup>, 4<sup>th</sup>, and 5<sup>th</sup>. Each day a different NAU student was the main instructor; in charge of set-up, instruction, and class environment while other NAU group members assisted. Two lessons were presented, the second lesson included task sheets and exit slips to promote student engagement. Data were collected during both lessons.

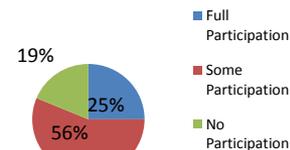


## Results

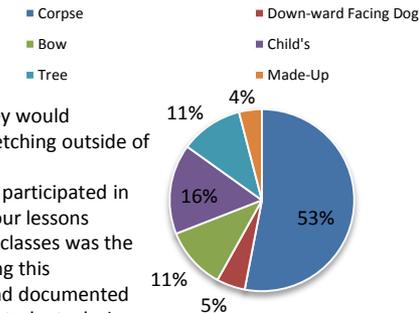
### Students Willing to Participate Outside of Class



### Student Participation During Class



### Student's Favorite Pose



- 10% of Students said they would participate in advanced stretching outside of class
- 56% of students actively participated in advance stretching during our lessons
- The favorite pose of the classes was the corpse pose with 52% stating this
- Most results were show and documented through handouts given to students during our lesson

## Discussion

The introduction to novel activities provides middle school students with just one more activity they could take pleasure in and potentially participate in throughout their life.

Overall we feel that the experience was successful, because it allowed us to teach a novel activity to students and it stimulated their interest in advanced stretching (yoga) as shown by the exit slips. Additionally, class participation increased when students were given handouts to complete during lesson. While our data shows that most students were active and open to participating in our novel activity (56%) it was still discouraging to have 19% of our students not participating at least half the time. This can be attributed somewhat to the fact that we were guests or the behavior management style of their regular P.E. teachers.

We know student choice is very important in the middle school realm, and this was clearly shown in the second lesson we taught, where the students were able to make up their own routines. We feel our lesson gave the NAU student group an insight to middle school interests and social behaviors. We learned that learning occurs when students are interested and in order to interest students they need to be kept accountable through tasks sheets and etc.

# 2011 – Encouraging Middle School students to be active during leisure time

- **NASPE Outcome 3.6:** *Plan and implement progressive and sequential instruction that addresses the diverse needs of all students.*
- **Guiding Question:** What do you know about middle school students' interests in order to build skills and interest in being physically active in leisure time?
- **PETE Students Creation and Implementation Process**
  - Lead up assignments and lessons
  - Requirements
  - Challenges to the process

# Becoming Physically Active One Step at a Time

Haley Lawrence, Morgan Ovard, Lori Finlayson, Wade Arnold, Nick Ragland-Johnsen



## Abstract

The purpose of this project was to determine whether using activity logs and pedometers will encourage middle school students to be more physically active during spring break. A focus group session was held at a local middle school. A spring break physical activity plan was developed based on the students' answers which included the students wearing pedometers and recording the amount of steps and activities they participated in each day. Results of this project showed that activity logs and pedometers made the students more physically active.

## Needs

The purpose of physical education is to get kids physically active for life. Unfortunately, not all kids are interested in being physically active. A study conducted by the CDC indicated that 61.5% of 9-13 year olds do not participate in any organized physical activity outside of their school hours and that 22.6% do not engage in any free-time activity (CDC, 2003). Physical educators need to encourage students to be physically active for life by teaching in ways that are fun for the students.

## Purpose of the Project

The purpose of this project was to get students engaged in physical activity and record what they did while they were on spring break.

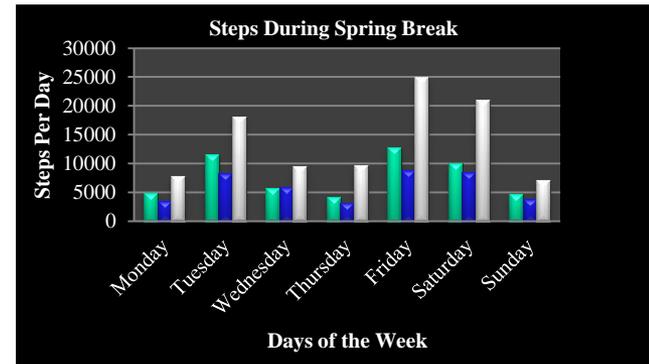


## Methodology

Focus group questions were developed for middle school students which examined the areas of diet, daily habits, access to equipment and facilities, activity patterns, and free time activities. At a local middle school students participated in some ice breaking, fun activities prior to interviews. Interviews were conducted and students' responses were recorded. Information from the interviews was used to make a plan for increasing physical activity over spring break. The activity plan gave the students a lot of freedom and could be made fun with a variety of resources. Students wore a pedometer every day over spring break in order to record the number of steps they took each day. Students kept an activity log in the hopes that by recording and seeing the work they have put in they will become more intrinsically motivated to be physically active. The activity log included resources and maps of where local parks and trails are located as well as suggestions for different types of activities. The Thursday after spring break a survey was conducted at the middle school to determine results of the pedometer experiment. This survey investigated if the students were more physically active by recording their daily steps and physical activity.

## Results

- 60% of students claimed the activity logs and pedometers made them more active.
- 42% of students participated in moderate to vigorous physical activity for at least 20 minutes, 5-6 days over spring break.
- 42% of students participated in activities that were found in their physical activity plans.



## Discussion

The results of this project indicate that some students put forth an effort during their spring break to be more physically active, while it seems like others just went through the motions. This is what was expected and we appreciate the students' honesty in reporting activity. Overall, the use of pedometers is an example of extrinsic motivation for students to move more and be more physically active. Ideally, students would be intrinsically motivated to engage in physical activity. When they are able to record and see what they have done each day, physical activity becomes more important to the students. By incorporating pedometers into physical education lessons, students may be inclined to move more. As physical educators our goal is to get children and adolescents physically active for life, and we hope including pedometers in future lessons may be a step in the right direction.

# 2012 – Incorporating Technology in PE

- **NASPE Outcome 3.7:** Demonstrate knowledge of current technology by planning and implementing learning experiences that require students to appropriately use technology to meet lesson objectives.
- **Guiding Question:** How can technology be used in middle school PE to facilitate student learning?
- **PETE Students Creation and Implementation Process**
  - Lead up assignments and lessons
  - Requirements
  - Challenges to the process

## Abstract

The American Heart Association recommends that the youth participate in at least 60 minutes of moderate to vigorous physical activity every day. Physical education in schools is a crucial way of achieving this goal; however, many P.E. programs are being cut across the nation. Exposing students to heart rate monitors helped them learn the importance of elevating their heart rate during physical activity. Having the students wear heart rate monitors showed that they can reach their target heart rate zone in class. This provides support for the value of physical education in schools.

## Needs

Middle school students have the need to feel a sense of independence. By giving the students their own heart rate monitors they were responsible for checking and recording their heart rate. Every middle school student is going through changes and finding out their personal preferences; by exposing them to a variety of activities they have the opportunity to be more engaged in their own learning process. Helping students find more activities they prefer will increase their physical activity level and motivate them to exercise more.

## Purpose of the Project

The purpose of this project was to determine which activities put the middle school students in their target heart rate zone by using heart rate monitors. Our goals for this project were to:

- Provide students with a variety of cardiovascular activities.
- Educate students on how to calculate their target heart rate zone.
- Educate students on how to use heart rate monitors.
- Keep data on students heart rates throughout the class.

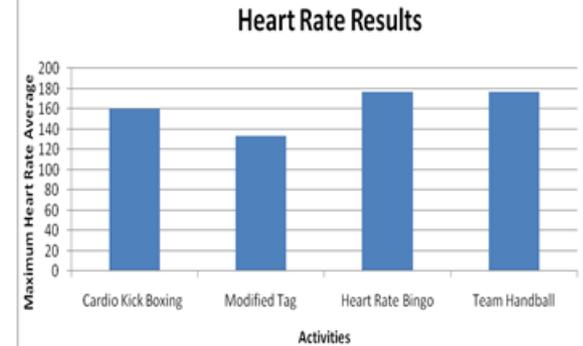


## Methodology

Students were given heart rate monitors at the start of each class period. On the first day we introduced the heart rate monitors to the class and explained to them how they worked. We then taught the students how to calculate their target heart rate zone, and explained what it was. By using the monitors, they were able to track when they were in their target heart rate zone. The heart rate monitors were an incentive to the middle schools student in the fact that it motivated them to attain their target rate zone throughout the lessons. Using the heart rate monitors helped show the students that they can reach their heart rate levels through various physical activities which included; circuit training, cardio kick boxing, fastest tag in the west, heart rate bingo, and team handball.



## Results



In our study we found that team handball and heart rate bingo had the same maximum heart rate average of 177 beats per minute. We also found that cardio kick boxing had a heart rate max average 160 beat per minute. Fastest tag in the west had the lowest heart rate average with 133 beats per minute.

## Discussion

After analyzing our data we found that every activity caused each student to reach their target heart rate. This is beneficial to physical education programs because it proves that students are getting a sufficient amount of exercise through a variety of activities. Along with discovering this, we saw that the students learned how to properly use their monitors and took great care of them. We were also able to see that the students learned what their target heart rate zone was and how to calculate through the post test.

The biggest limitation of this study was time. We planned to have five days of activities with the students participating in a specific activity each day. Due to weather conditions we were only able to have four days with the Flagstaff Middle School students. Because of the lack of time, we had to adapt and modify the experiment.

# Peer discussion and processing the meaning of the data/results

## Results

- Does the author(s) offer explanations for what happened? What worked well, what didn't work?
- Does the author(s) thoughtfully **reflect** on what the results/outcomes mean or did the author only present the outcomes?

## Discussion

- Does the author(s) describe the future implications of the project's findings?
- Does it contribute in some way to the discipline's body of knowledge?
- Does it pass your "so what" test?

# Honors Day and State AHPERD Presentations



# Questions?

- NASPE. (2008). National Initial Physical Education Teacher Education Standards.
- Poag-DuCharme, K. A., & Brawley, L. R. (1993). Self-efficacy theory: Use in the prediction of exercise behavior in the community setting. *Journal of Applied Sport Psychology*, 82, 41-50.
- Sari, M. (2006). Teacher as a researcher: Evaluation of teachers' perceptions on scientific research. *Kuram ve Uygulamada Eğitim Bilimleri*, 6(3), 880-887.
- Sinelnikov, O. A. (2012). Using the iPad in a sport education season. *Journal of Physical Education Recreation and Dance*, 83(1), 39-45.

# *Processing Activity*

1. Are you currently involving students in undergraduate research of their own teaching? What are you doing? What's working? What would you like to change? What might you want collaboration with?
2. How could you see yourself incorporating student self-investigation of teaching practices?

*Aligning Projects with  
NASPE Initial Teacher Standards*

- Pick a NASPE Standard:  
Come up with an idea for  
undergraduate student  
inquiry with that as a base.

# Contact Information

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