

Integrating Physical Activity Into the School Day: An Applied Research Project

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EDUC 6800 Project: Sustainability, Creativity, & Innovation

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## Table of Contents

<b>Part 1: The Record</b>	<b>Page</b>
Project Links.....	4
Design Thinking Process.....	4-9
<b>Appendix:</b>	
A Define a Challenge.....	26
B Understanding the Challenge.....	27
C TCPS2: Core Certification of Completion.....	28
D Design Challenge Brief.....	29
E CBU Office of Research & Graduate Studies.....	30
F Departmental Approval Letter.....	31
G Project Proposal.....	32
H Experimentation and Prototypes.....	33
<b>Part 2: The Evaluation</b>	
Successes.....	9-12
Challenges.....	12-13
Goals and Objectives.....	13-14
Impact of The Project.....	14-16
Professional and Personal Learning.....	16-17
Successful Activities and Adjustments.....	17-22
What Has Changed as a Result of The Project.....	22-23
Sustainability Perspective.....	23-24
Personal Experiences and Developments With Leading Change.....	24
Next Steps.....	24

### Increased Physical Activity During The School Day

This final project report consists of an in-depth perspective of how the applied research project came to fruition and the influence that increased physical activity during the school day had on student behaviour, well-being, and academic achievement. For the purpose of this project, physical activity is defined using the World Health Organization's definition (2018) "...any bodily movement produced by skeletal muscles that requires energy expenditure." Physical activity was successfully integrated into all subject areas; providing students with the opportunity to be more physically active than prior to the project. Prior to the project, physical activity was limited to the scheduled 60 minutes of recess and 30 minutes of gym class every second school day. During the project students were active anywhere from 180 minutes to 210 minutes a day including the scheduled recesses and gym classes. In addition to the increased physical activity time, students explored topics such as: well-being, physical health, mental health, and the connection between increased physically activity and sustainability. Information was presented to students through presentations and interactions with community members who visited the classroom as guest speakers. Guests ranged from RCMP officers, the community nurse, school social worker, Zumba instructor, and yoga instructor.

The Design Thinking Process guided the research and planning stages of the project. The project began as an identified need in the classroom as well as school wide in January 2018 and progressed into a research and learning journey for myself as the principal investigator. Through academic reflections and discussions, the research and ideas evolved into prototypes and a timeline. On April 10<sup>th</sup>, 2018 all of the research and planning was put into action. As students participated in purposeful physical activity the

project developed into a well-documented opportunity for students to flourish and an opportunity for some students to leave their disruptive behaviours behind them during the last term of the school year. Data was collected through observations, student interviews led by the principal investigator (classroom teacher), whole class reflections, whole class discussions and brainstorming, student written reflections, photographs, anonymous end of project reflections. The photographs, recorded students comments and feedback, and increased academic achievement speak to the importance and effectiveness of increasing the amounts of physical activity students engage in during the school day. Physical activity has had a tremendous positive impact on student's well-being, sense of self as a learner, and overall academic participation and achievement.

### **Project Links**

Photos and activity reflections can be viewed on my WordPress:

<https://sustainabilitycreativityandinnovativelearning.wordpress.com/2018/07/07/integrating-physical-activity-into-the-school-day/>

Link to live presentation: <http://youtu.be/SjmagqggtBM?hd=1>

Follow me on social media sites for up to date activities during the school year. Twitter:

@A\_McLennan101 and Instagram: mrs\_mclennan\_room101

### **Design Thinking Process-The Record**

The Design Thinking Process (DTP) (IDEO, 2013) is essential when creating sustainable change in a classroom and more specifically in the education system. Based on observations of personal trends and observations of other teachers, without going through the DTP, teachers tend to get excited about an idea and abandon the idea just as quickly as they got excited about it. The original excitement leads to the idea being

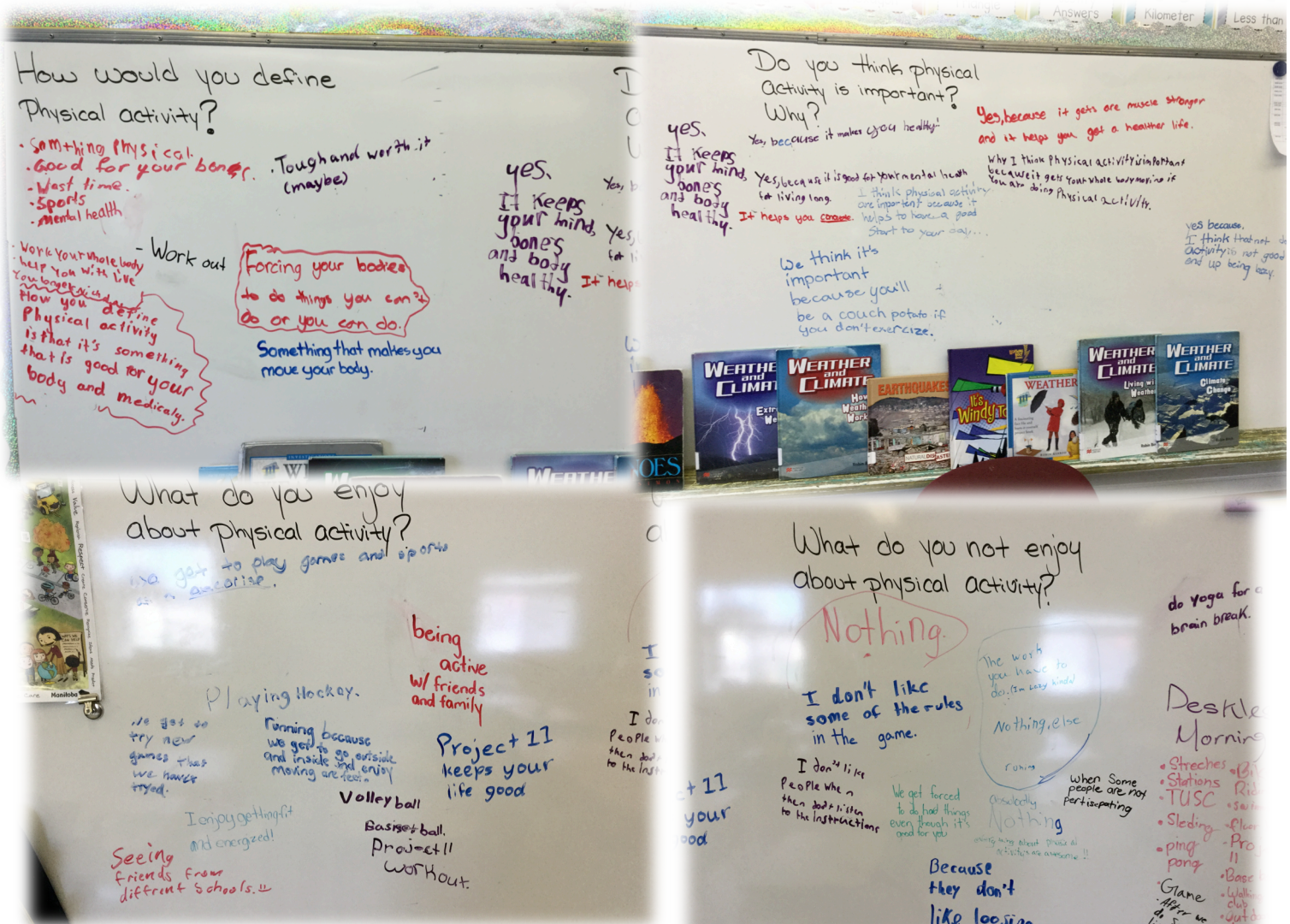


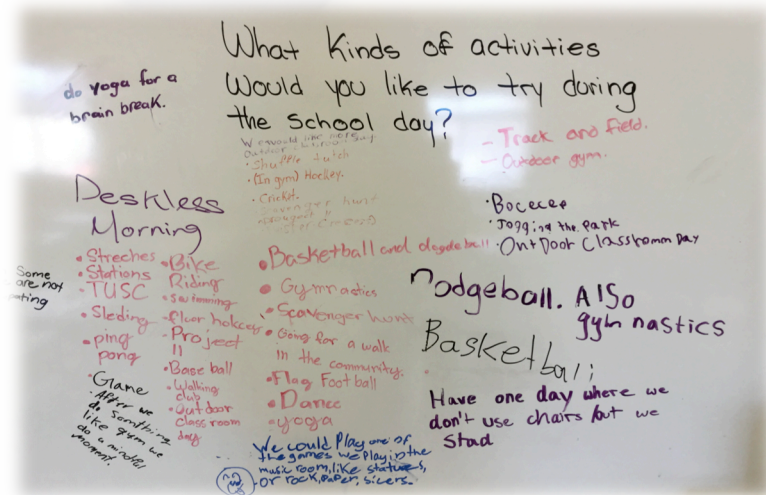
immediately implemented without taking the time to think the idea through, anticipate barriers and constraints, develop a team of experts who can assist, and develop a timeline. Following the process outlined in the DTP allows for greater success in sustaining the project in the future. In addition to the mentioned qualities of the DTP, it also promotes student voice and choice, professional collaboration, and constant revisions as the needs of students change.

The DTP played a significant role in shaping the success of the action research project. This section of the paper will outline the steps that were followed and provide insight into how the project evolved throughout the DTP. The DTP consist of five phases. The action research project began in the Discovery phase as an identified need at the school I work and more importantly in my grade five classroom as documented in Appendix A. After the challenged was identified, I began to explore and understand the challenge as seen in Appendix B. During this stage I began to critically consider what it would take to increase the amount of physical activity for students during the school day. I identified the people I could speak with as experts, information I needed to further research, determined the audience of the project, and began to brainstorm questions so that I could start having meaningful conversations with people who I viewed as experts in the field and those involved in the project. I decided that I would present the experts with a brief survey and conduct informal conversations. I wanted to make student voice and choice a large part of this project and change process. I made the decision to collect data and information from students through anonymous questionnaires, purposeful discussion topics during whole class discussions, questions posted on non-permanent vertical surfaces, short reflections after guests and activities, and observations. These methods of

data collection will be used to evaluate the success of the project and determine if any changes need to be made. This stage was the most inspiring because my goal was coming to life. I was beginning to make a feasible plan that I was responsible for accomplishing.

The DTP taught me to allow for a lot of student voice and choice when planning for change in the classroom. I started the project off by hosting a whole class discussion about physical activity and then posted the following questions on non-permanent vertical surfaces for students to anonymously respond. I did not provide students with background knowledge indicating why I was asking these questions because I wanted their honest answers. Gathering information in a casual non-threatening fashion allowed me to assess student's prior knowledge.





The Interpretation phase is when the research aspect of the applied research project began. See Appendix C for verification that I successfully completed the Tri-Council Policy Statement: CORE 2 Tutorial. In addition to reviewing the ethics, I began to think of ways around the highlighted barriers and constraints identified in earlier stages of the DTP. Thoughts and ideas began gel together resulting in a brief project proposal and an application to Cape Breton University's Research Ethics Board. See Appendix D for the brief project proposal and Appendix E for the approval letter from the Office of Research & Graduate Studies at Cape Breton University stating that approval has been granted for the applied research project. See Appendix F departmental approval letter stating that the school principal is aware of and supports the project.

During the Ideation phase of the DTP research was conducted to answers the questions identified in earlier assignments/phases. During the extensive research I also found publications created by others who were also interested in the connection between increased physical activity and increased academic achievement and overall well-being. John Ratey has published research indicating a link between physical activity and brain development and growth. Other information related to the importance of physical

activity is being published by organizations such as ParticiPACTION, National Geographic Kids, government webpages, and Green Teacher, and many more. The research provided background information, scientific reasons (physically and emotionally) for being physically active and suggested activities that have curricular connections. See Appendix G for the project proposal that includes the goals and objectives of the project, a tentative timeline, and a consolidation of research.

During the Experimentation phase of the DTP the original timeline was adjusted, activities were refined based on feedback and ideas from research. See Appendix H for experimentation and prototypes. As students participated in the scheduled activities I was constantly evaluating the success of the activity and taking notes of adjustments that could be made for next time. One of the adjustments that I would like to make is to schedule activities for a shorter period of time at the beginning and progress into hour-long activities. Including physical activity in all subject areas broke the barrier that desks created for students. It took a few days for students to become comfortable with thinking and learning outside of their desks.

After all of the planning, discussing, and revising the action research project was fully implemented. The last phase of the DTP is the Evolution phase. During this phase I made observations about the successes and needs of the project. There were many identified successes associated with this project as well as a few changes that I would make next school year. The success and next steps/changes are detailed later in this paper. As I was evaluating the project I began to critically think about where I could share my applied research project so that parents, other educators, and the school division could see the impact that increased physical activity has on students in the educational

setting. Some of the places I would like to share success story are: school newsletter, school web page, divisional newsletter to teachers, Green Teacher magazine, blog, and on social media sites. My future goal is to continue this learning and experimenting journey so that I can lead an in school professional development session sharing my learning journey and the documented success stories as inspiration for other teachers. My hope is that by leading the in school professional development session other teachers will be inspired to make changes to their practices to include more physical activity or be inspired and make another change that they have been hesitant to try. Overall the DTP was instrumental in the success of my research action project. When I make adjustments for next school year I plan to loosely follow the design thinking process by defining the new problem, brainstorming solutions and possible barriers, seek the opinions and suggestions of others, create timelines and prototypes, and make observations and record findings. This process of problem solving and creating change allows for constant revisions and constant evolution of ideas.

### **Evaluation of the Project**

As mentioned above, the project was a success and will continue to be a success for many years to come as it evolves with student needs. Not only did students have a positive experience, I grew as a professional teacher and made some permanent changes to my teaching pedagogy.

### **Successes**

Purposefully integrating physical activity into all subject areas was exactly what this group of grade five students needed this school year. The project experienced many successes, some of which were unimaginable and unplanned for. The biggest success

was a shift in the classroom climate and learning community as a result in change of behaviour and attitude. The first two terms of the school year were polluted with bad attitudes and negative feelings towards learning. Six students in particular did not have passion for learning or respect for school and classroom rules. They would often act out negatively, take up a lot of my time and energy when it should have been used to teach, and do things that would negatively affect other students in class and during recess.

These students were not making any academic progress and beginning to spend a lot of time at home sick or in the office. This negativity dampened the classroom climate and learning community. All of this negativity started to turn around after just one week of increased physical activity. Suddenly these students wanted to be in the classroom, were rushing in from recess, the frequency of their disruptive behaviour diminished, and I was making a lot less phone calls home. After a few weeks most of six students began to willingly complete their schoolwork and homework. They began to take risks in their learning and be respectful when listening to others. This led to other students taking more risks in their learning and suddenly the small group conversations and whole group discussions were a valuable use of class time. The whole class was making stronger academic connections to the material presented after practicing the new knowledge taught or representing their knowledge in a way that incorporated physical activity.

Not only did the educational assistant in the classroom and I notice the huge shift in student behaviour and learning but a three of the six parents noticed and commented. The music and gym teacher also approached me several times complimenting the class. The recess supervisors also gave positive feedback about student behaviour at recess. The success of integrating additional physical activity into the school day was observed

and mentioned by multiple adults who interact with students in a classroom setting and during unstructured times such as first thing in the morning and during recesses.

In addition to boosting student behaviour and academic performance, students also gained a better understanding of the importance of remaining physically active throughout their lifetime. Expert guests shared a vast amount of knowledge with students from staying physically healthy to prevent disease to staying physically healthy as a means to achieve and maintain balance and well-being in life.

The variety of activities successfully gave students an alternative perspective to physical activity and changed some student's perceptions. During an anonymous survey at the beginning of the project some students reported that they not enjoying physical activity at all. Some of the reasons included: do not like playing sports, do not like getting hot, do not like getting points for finishing activities, and the painful feeling afterwards. With this knowledge I did not plan activities that included these identified dislikes. At the end of the project, students had nothing but positive things to say about the physical activity that took place during the project. It was refreshing to hear students' talk about being physically active and their plans for the summer.

Another success that should to be acknowledged is the effectiveness of the DTP. As mentioned above, this process guided me through the many steps involved with creating change. I feel that if I did not follow the DTP, the action research project may not have been as successful because I may not have taken the time to give attention to important details such as brainstorming barriers and constraints, identifying experts, planning for community involvement, allowing for student voice and choice, extensively research, create a timeline and prototypes, and ask for feedback on activities. The



success of the DTP resulted in me successfully implementing change in the classroom and my teaching pedagogy. This opportunity has prompted me to look for more risks to take and make more changes to my teaching pedagogy. Most importantly, I am not afraid to put in a lot of hard work and cause change. I have successfully gained confidence in myself as a change maker.

### **Challenges**

With any change there are always challenges. The top two challenges were the weather and other teacher's opinions and perspectives. The weather often caused activities to be rescheduled, shortened, or canceled. The weather was a challenge because I had activities scheduled to coordinate with the science or social studies unit that was being covered. For example, during the weather unit I had cloud watching scheduled and during the fur trade unit I had snowshoeing scheduled. Cloud watching did not take place because it was extremely cold during the week that clouds were being taught and the snowshoeing was canceled because the snow melted quickly. The snowshoeing could be not rescheduled because the snowshoes were pre-booked and they were borrowed from another school.

The second challenge was not taking the opinions and perspectives of other teachers to heart or let them skew my action research project. Most teachers were supportive and constantly asking genuine questions. However there were a few who struggled to be supportive due to their willingness to accept change or entertain alternative perspectives. I was asked if some of my activities were purposeful and without taking the question personally I quickly explained the curricular connections and the positive results that I was already noticing in students. This challenge did more than



cause me to be sure that everything I did had a purpose. It caused me to look at how I approach the ideas of others if they differ from mine and caused me to be more open to listening to others.

Next school year I plan to rearrange the order that I teach the science units so that the weather unit is not taught in the winter. In response to the negative responses from teachers, there is not much I can do to combat their negativity because no matter the situation someone is always unhappy. I will continue to build momentum by actively sharing my success stories with those who are curious.

### **Goals and Objectives**

The action research project not only achieved the established goals, it surpassed some of them. The overall goal identified earlier in the DTP was to increase the amount of purposeful and engaging physical activity students participate in during the school day.

Additional goals set for the project were:

- Provide opportunities for students to enjoy being physically active
- Promote overall well-being
- Reduce sedentary behaviour
- Feel the physical and mental effects of being less sedentary
- Begin to practice sustainable behaviours that foster sustainable happiness and well-being

The objectives of the project were:

- Increase the physical activity among students
- Increase opportunities for active collaboration in learning and planning for learning
- Effectively integrate learning outcomes into activities that allow students to be out of their desks
- Make a connection with the world around them

Observations, informal conversations, personal reflections, and photographs capturing the moment all advocate that the identified goals and objectives were satisfied. Students were noticeably more active than prior to the project and were beginning to make active

plans for the weekends and summer holidays. The excitement associated with making plans with family for the weekend and summer holidays indicates that students are beginning to independently practice sustainable behaviours that foster sustainable happiness and well-being. Near the end of the project students would reference the information learnt during guests visits. For example, students would often talk about getting enough sleep and eating healthy each day and students would often remind me that the activities we had planned for the day are good for their bones and bodies. The shift in behaviour and student participation indicates that students were enjoying being physically active. Students consistently participated opposed to excluding themselves and behaving negatively to disrupt the learning of others. During debriefs and reflections following activities students had nothing but positive things to say and were beginning to notice things about themselves. A few students consistently mentioned that during the activities they felt happy and students would often ask if we could do all of our learning this way. Student feedback during reflections and discussions are the main indicators of success. Another indicator of success that I did not set as a goal is the increased academic achievement of students who were on Individual Education Plans in term one and two.

As mentioned earlier in this paper, the action research project encompassed numerous successes. The successes satisfied all of the goals and objectives. As the principal investigator, I couldn't be happier with how the project transpired.

### **Impact of The Project**

The impact this project had on students and student learning is shared throughout this paper and in the WordPress. The largest indicator of success was the shift in

classroom climate. The classroom climate created an environment where students were excited about learning, willing to take risks, and looked forward to trying and learning new concepts. The action research project not only increased the amount of physical activity that students participated in, it helped to grow students understanding of the importance of physical activity and well-being. At the beginning of the project students did not have strong background knowledge about the importance of physical activity and well-being. Student understanding drastically increased by the end of the project. At the beginning of the project students thought people were physically active to be good at sports and only people who were athletic could be physically active. By the end of the project students made the following comments:

“I never knew physical activity could be so fun. I think everyone should get off the couch and be more active.”

“I just feel soo happy when we are doing things like Zumba, Project 11, and Outdoor Classroom Day.”

“I plan to always be active now that I know it can make your bones strong and healthy.”

“I like that I don’t have to sweat to be active because sweating is gross.”

“Living a balanced life like the lady taught us about with some TV watching, some playing outside, and doing some extra school work at night seems like something I could always do.”

“Being sustainable means taking care of yourself and the earth.”

“Having well-being means spreading peace.”

“Well-being is living a good life by doing things that make you happy and not what makes other people happy.”

Other adults and teachers would ask me what I had done to my class because they seemed like new kids, or they would make comments suggesting that I continue doing whatever I was doing because it was working.

The impact that this project has made on students is evident in their rejuvenated understanding of physical activity and well-being and students developed passion and enthusiasm towards physical activity.

### **Professional and Professional Learning**

Working through the DTP and experiencing each stage of being a change maker has taught me a lot professionally and personally. Professionally I realized that it takes hard work and dedication to cause the change you desire. The hard work requires more than research, timelines, and prototypes. It requires listening to others and valuing their opinions so that everyone involved feels they have something to contribute towards the solution. Being an agent of change requires good leadership skills. Throughout the Masters program and more specifically from Dr. Brent Kay's interview, I recognize that leadership skills don't involve telling people how to think. Leadership skills require patience, guidance to be given and collaboration facilitated. Acquiring the skills of a good leader are the same skills required to be a good teacher. I believe that I have professionally grown and I am beginning to possess some of the qualities of a good leader and good teacher. I look forward to reflecting on my professionally learning this time next year.

Personally this project has taught me that I need to obtain more balance and well-being in my life. During the school year I let work consume me and often put the things I enjoy to the side. I get caught up in wanting to do well at my job that I forget that I need

to enjoy life as well. Since coming to this realization last week I have been approaching things differently and have started to make some travel plans for the summer and have found a few good books to read. I think once I take time for myself I will find the things in life that allow me to truly achieve a sense of well-being.

### **Successful Activities and Adjustments**

Students absolutely enjoyed the activities because they were different than anything they had experienced before. Having community members visit the class as expert guests was very successful. The grade five students were fortunate enough to have the following guest visit the classroom: two RCMP officers, a Zumba instructor, Yoga instructor, community nurse, and the school social worker. Not only did students understanding increase from these visits, students began to develop their own understanding of physical activity, the importance of being active, and the health and social emotional benefits associated with physical activity.

The first officer who visited the classroom with a dog played a role in shaping the success of the project because he spoke about the importance of remaining physically active, the need to reduce video game time, and the need for 8-11 hours of sleep. The power of involving the community later became evident when a student who loves video games and dislikes physical activity shared his need to reduce his video game time and his plans to ask his dad to go for bike rides as if the idea was his very own. This was a turning point for me because I had suggested students spend less time playing video games and then the RCMP officer made the same suggestion. I think the RCMP's suggestion had more significance for students. As the principal investigator I know these guests had a positive impact on student learning because not only were the students

engaged, their reflections and discussions afterwards were meaningful and filled with joy and new understandings.

On the last day of school students were still talking about the time that they got to do Zumba. I could see the enjoyment in students while they were participating but for students to still feel passionate about the activity on the last day of school speaks volumes. It seems like this was the turning point when the students who disliked physical activity started to become more willing to try the new activities and were open to experiencing them.

When the school social worker was a guest in the classroom she spoke about physical activity from the perspective of finding a balanced life as a means to achieve well-being. This provided students with the opportunity to hear about the importance of living a balanced lifestyle.

The community nurse did an excellent job at presenting the health benefits associated with being physically active. After her visit students would often remind me that the activities we were participating in were good for our bones, muscles, and heart. The constant reminders were evidence to me that the students internalized what the guest had to say.

The grade five students were fortunate enough to experience yoga twice. Once indoors and once outdoors. To my surprise, all students participated during the second time (outdoor). The full participation was a huge success because as mentioned above, there were some students who would act out for attention or refuse to do anything for the whole school day. My observation is that the other students were fully engaged, visibly enjoying themselves, and were not engaging with the off task behaviour so the students

decided to participate. The other great aspect of this activity is that all students were able to participate because yoga is all about trying your personal best and not comparing yourself to others.

The last community member guest during track and field morning was an excellent way to wrap up the project. This RCMP officer participated and engaged with students. His participation demonstrated to the need to remain physically active throughout a lifetime. The types of questions that students were asking him demonstrate that students were genuinely interested in why he has to remain physically active at his job.

The next biggest success was the shift to non-permanent vertical surfaces. Students were able to make instant changes to their work, students could showcase their work opposed to writing it down in their folders, and working in visibly random groupings allowed students to collaborate with everyone in the classroom opposed to the same people all of the time. The 100% participation by students is big indicator of success. In addition to the participation, students who often had a limited understanding of knowledge presented were participating in classroom discussion more because they had the knowledge background to participate. The non-permanent vertical surfaces gave some students the extra exposé they needed to the content and gave others the confidence they were lacking.

Outdoor Classroom Day is another student favourite. Three times a year there are designated days that classrooms are encouraged to work and play outside all day. Participating in Outdoor Classroom Day inspired us to go outdoors for learning more often. Students loved being outdoors opposed to being confined to one room all day.

Being outdoors presented another opportunity for students. The increased room and the option to be as loud as desired created the opportunity for students to show their understanding of curricular content in alternative ways such as recreating the skeletal system using nothing but what was found outside, chalk art, creating songs and raps, and conducting messy experiments. Based on observations, students moved around more and were more creative when demonstrating their learning.

Offering the option to sit wherever students would like during activities also promoted movement. I observed students getting up to walk to the other side of the table, going to get supplies from around the classroom more often, and being more focused and on task. This little bit of freedom from their desks had a positive impact on their learning.

The math and science scavenger hunts were a way to be active on a day when the weather was undesirable. Students could easily spend 45 minutes looking around the classroom for cards that had questions or information on them with no behaviour issues. The other great thing about this activity is that it is inclusive and accessible for all students so it helped to build a positive classroom climate.

After learning about the circulatory system and how heart rate is related to physical activity, students performed an experiment on themselves. Students learnt how to take their resting heart rate and then retake their heart rate after being physically active for more than one minute. The students came up with the idea to have some students run, walk, skip to see if there would be a difference in heart rate depending on how active the person was.



I was surprised that students enjoyed creating their own activity logs and tracking their physical activity over one week. I was a little unsure of this activity when I was presenting it to students. I presented the log with the intention to track physical activity and students wanted to track their healthy eating and their sleeps as well. This extension of activity prompted by the students was a clear demonstration that students were internalizing what the guests had shared and students were curious about where they fit into the realm of being physical active. What was the most successful in my eyes was that students were asking their parents to do activities with them. For example, one boy started going for nightly bike rides with his dad. Not only are the two of them being active, they are enjoying an activity together which supports a sense of well-being. The other success of this activity was the constant updates I was receiving each morning from excited students.

The quick dance lessons, mini yoga, fitness videos, or music and rhythm breaks hosted by Project 11 were something that students looked forward to in the morning. Students said: “it was a good way to start the day,” “it makes me happy when I see Project 11 on the board in the morning,” “it’s a chance to feel like you are not at school when you really are at school.” I would highly recommend this program to teachers because it encompasses more than movement breaks.

A small but powerful adjustment that all teachers can make to the day is to schedule quick movement breaks every 30 to 45 minutes. The movement breaks give the student’s brains a quick break and get the blood flowing. The movement breaks are energizing and allow students to remain focused for longer periods of time. The

movement break reduced the behaviour issues because students were able to expend some of their energy.

The above listed activities were the ones that students enjoyed the most and continued to talk about for days afterwards. They all provided an opportunity for student to be moving and learning in some capacity. Not only were the activities successful, the discussions afterwards were valuable. The discussions and reflections after activities provided students with an opportunity to reflect on what they learnt, how they felt, consolidate any new learning or feelings and develop a more comprehensive understanding of how physical activity is related to well-being and sustainability. As discussions became a part of the daily routine students began share more openly and value the ideas and thoughts of others. The discussions also provided me with a clear understanding of what curricular content students were understood and what needed to be revisited. I found that students were retaining more knowledge and beginning to apply it to situations in their own lives. The academic achievement increased for all students.

Fortunately I had success with all of the activities I presented to students. Other than planning a back up day for weather dependent activities and continuing to look for new and creative ways to be physical active while satisfying curricular outcomes I wouldn't change a lot.

### **What Has Changed as a Result of The Project**

A lot has changed as a result of the action research project. The success of the project and the changes that have amounted are almost unimaginable. As we result of the project:

- Student's attitudes and energy to learn have turned positive
- Students are talking about the fun they had at school at home

- Students are independently making a connection between physical activity and sustainability
- Students have physically and emotionally experienced and vocalized how physical activity makes them feel
- Students have more knowledge about the importance of physical activity. They are more likely to remain physically active in the future
- Due to the community members who visited the classroom, students developed an understanding about the importance of staying physical active as well as the importance of maintaining a well-balanced life that leads to well-being
- Lesson planning has been rejuvenated. With physical activity at the forefront when planning activities, I am always finding creative ways to satisfy learning outcomes while being providing students with the opportunity to get out of their desks
- My teaching pedagogy
- Other teachers are asking questions which means they are open to implementing more physical activity in their classroom

I truly look forward to continuing with this classroom change and continuing to watch students learn and grow in an environment that is best for them.

### **Sustainability Perspective**

Integrating physical activity into the school day is a sustainable change that teachers can make when planning their school year. This change is sustainable because there is little cost associated and minimal additional resources required. The minimal monetary cost, increased positive student behaviour, increased overall well-being, and increased academic achievement are great motivators to repeatedly replicate this change. To ensure this change does not fade as quickly as it began, I suggest teachers observe the positive impacts that it has on students and the school day and always plan for learning with physical activity in mind. I believe that the more success stories I share, the more likely teachers are to take the risk and try increasing physical activity in their classrooms. The action research project also connects to sustainability from the lens of sustaining life. The more active people are, the more likely they are to live a longer and happier life. As well, the more people care about themselves, the more likely they are to care about others

and the earth which increases the likelihood of people putting effort and time into creating new and sustainable practices for the future.

### **Personal Experiences and Developments With Leading Change**

Creating and implementing the action research project was an unforgettable experience. The experience was invigorating and I am proud to share my project with others and I hope that each person will take away one small thing and begin to be their own agent of change.

As mentioned above, I am beginning to acquire the attributes that make a good leader of change. I believe that it is an evolving process that requires constant reflection and adjustments. I have also learnt that being a leader of change requires time as everyone is not going to follow blindly. If all good things take time than it is no wonder that becoming a leader of change takes time.

### **Next Steps**

The project may have come to an end on paper but I do not plan to go back to the sedentary teaching style I practiced before. The next steps are to plan the upcoming school year with physical activity at the forefront, refine my timeline, add some new activities, share my project with as many people as possible, step out of my comfort zone and publically share my project, and do a better job of communicating and sharing student reflections with parents so that parents are more involved. Although I constantly posted photos and students wrote reflections in their agenda books, I feel that I could think of a better way to include parents. I do not see this idea as complete; rather I plan to continue to make change as the needs of students evolve.

### References

IDEO. (2013, January 15). Design Thinking for Educators. Retrieved January 5, 2018, from <http://www.ideo.com/post/design-thinking-for-educators>

World Health Organization. (2018). Physical Activity. Retrieved March 16, 2018, from [http://www.who.int/topics/physical\\_activity/en/](http://www.who.int/topics/physical_activity/en/)

## Appendix A Define a Challenge

View the link below for activity one of the Design Thinking Process:  
<https://drive.google.com/file/d/1wvEY6IlwzKlrvHWZ4ehDghZc-ud4Txan/view?usp=sharing>

## Appendix B Understand the Challenge

View the link below for activity two of the Design Thinking Process:  
[https://drive.google.com/file/d/168\\_w0XeSh6kVfLpWJ9x5-PeSVilgzeNu/view?usp=sharing](https://drive.google.com/file/d/168_w0XeSh6kVfLpWJ9x5-PeSVilgzeNu/view?usp=sharing)

Appendix C  
TCPS 2: Core Certificate of Completion



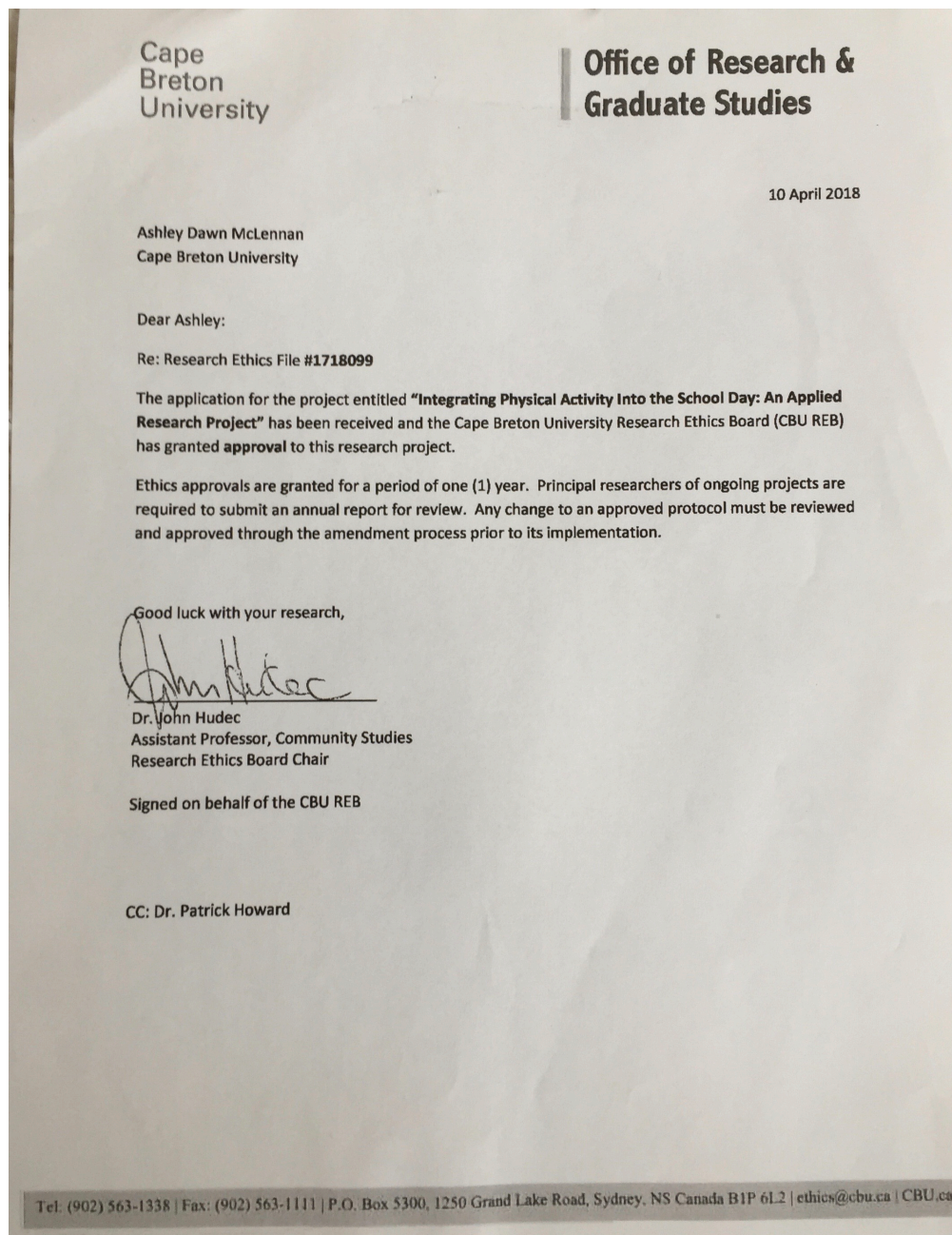


## Appendix D Design Challenge Brief

View the link below the design challenge brief:

<https://drive.google.com/open?id=1WzsBDqpfY4YWoZI40skaYHzGrM0KEd3t>

Appendix E  
Cape Breton University Office of Research & Graduate Studies



Appendix F  
Departmental Approval Letter

**Cape Breton University**  
School of Professional Studies

Cape Breton University  
Department of Education  
P.O. Box 5300  
1250 Grand Lake Road  
Sydney Nova Scotia, Canada  
B1P6L2

**Confirmation of Support from Collaborating Organization**

Project Title	Integrating Physical Activity Into The School Day.
Project Lead (student name)	Ashley McLennan
Contact Information	Cbuisfat@cbu.ca 204-509-3977

Instructor	Dr. Patrick Howard
Course	EDUC6800: Education for Sustainability Project
Contact Information	1250 Grand Lake Rd., Cape Breton University, Sydney, NS. Tel: 902 563 1300 Patrick_howard@cbu.ca

Supervisor/Head of Collaborating Organization	
Name	Tony Marchione
Position	Principal
Organization	Robertson School
Contact email/phone	tmarchione@wsdl.org

- I confirm that the school administration (or division head/management) is aware and fully supports the proposed applied research project.

Name: TONY MARCHIONE Position: PRINCIPAL  
Signature: TM Date: MARCH 5, 2018  
(Head Department/Division) (year/month/day)

## Appendix G Project Proposal

View the link below for the project proposal:

[https://drive.google.com/open?id=1MC7vQIx7ylQT\\_XQ94F6aospf3jIHjFLl](https://drive.google.com/open?id=1MC7vQIx7ylQT_XQ94F6aospf3jIHjFLl)

## Appendix H Experimentation and Prototypes

View the link below for the experimentation and prototypes:

[https://drive.google.com/open?id=1v5zuHl\\_L\\_Qlu-AcaX2lhXYVrSMtYWnA-](https://drive.google.com/open?id=1v5zuHl_L_Qlu-AcaX2lhXYVrSMtYWnA-)