

ESSM14

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Introduction

Anecdote – Informal question at a Physical Education conference:

Teacher A: Have we broken out of the old school gym teacher stereotype yet?

Teacher B: In whose perspective? The PE teachers themselves or everybody else? PE teachers, yes, I feel we have. But, everybody else still thinks we are here to keep the kids busy by playing different sports and games.

There are numerous stereotypes involving the physical educator. (Spittle et al., 2012) found that the general perception of the role of a physical educator and a coach is blurred. This viewpoint is strongly enhanced by the presentation of PE teachers within the media. (Spittle et al., 2012) found that in movies, PE teachers are perceived as leading a non-academic subject with teachers who could not teach and were generally hostile towards their students.

This is unfortunate as the International Baccalaureate (IB) (IB, 2009) states that PE is focused with developing student's well-being by allowing them to gain the knowledge, skills and attitudes necessary to build a positive commitment to their personal, social and physical well-being. Well-being is fundamentally linked to all areas of the student's school life and beyond; hence it's importance in education.

This stereotype could be attributed to the confusion between these two terms: Physical Educators and Physical Activity Providers (Pill, 2007). Of course, there is an element of physical activity in PE but one needs to consider PE as a learning area as well. The PE classroom is a suitable environment to encourage challenge and for student empowerment due to its unique place in the school. It can help develop the necessary skills, knowledge, health, grit and confidence to succeed in continuing living a healthy and active lifestyle outside of school (Ferkel et al., 2017).

(Ostergarrd, 2016) found that an inquiry-based learning approach that integrates both physical and cognitive learning makes lessons authentic, challenging, meaningful and open-ended. This approach is student-centred, allows for collaboration and the use of all competencies. These are all factors that enhance motivation and engagement (Martinek et al., 2019), which in turn could change the general perception of PE teachers within the general public.

Background

The author is conducting this study at an International School in Beijing, China. The school is an IB World School that offers all three programs. The Primary Years Program (PYP) place a large emphasis on the Learner Profile – the attributes that teachers assist in developing within the students to ensure they become internationally minded global citizens. Teachers are required to assess the development of these attributes throughout the

students' education (IB, 2009). Furthermore, the PYP believes student learning is at its best when lessons are authentic and transdisciplinary – where learning is not compartmentalized within disciplines but rather where each subject is supportive of one another. This point leads to the IBs belief that inquiry is the leading pedagogical approach for the PYP (IB, 2009). It allows students to achieve 'Agency' – where students have the desire, ability and empowerment to engage in their own constructive learning (Vaughn, 2018). The PYP encourages that summative assessments be linked with the central idea of the unit with opportunities to demonstrate their learning in different ways.

Throughout the unit, the Grade 4 students of this unit had PE 3 times a week with each lesson being 40 minutes. Normally, students have PE 2 times a week, however due to (Murdoch, 2017) stating that true wonder fosters inquiry, and wonder requires time, the author needed an 80-minute class and a single 40-minute class to ensure this true wonder could occur.

The Kath Murdoch Inquiry cycle framework provides a suitable framework for teachers to conduct inquiry-based lessons (tbondclegg, 2015)¹ and was used extensively in this study. The framework allows for a natural journey between questioning, research, action and reflection. (Ostergaard, 2016) concurs with this as he uses the example of Dick Fosbury developing his new jumping technique. The Fosbury Flop required experimentation, testing, planning and designing – all aspects of inquiry. Despite the push for inquiry in the PYP (IB, 2009), there is a lack of direction in how it is conducted within the PE classroom.

Therefore, this curriculum intervention's aim is to discover the role and efficacy of inquiry-based learning within a PE unit on Health and Fitness and whether students can achieve praxis. If this intervention proves successful a framework can be developed to encourage other PE teachers to create student-centred, inquiry-based lessons.

Literature Review

The physical education teacher stereotype was usually depicted as a person that uses humiliation, sarcasm and aggression (Spittle et al., 2012) – all of which are poor teaching strategies. This stereotype is not enhanced by the representation within politics as well. (Pill, 2007) has seen a narrowing of the vision and purpose of physical education due to an increased awareness of children's physical activity and obesity. He mentions that this awareness is causing confusion between the terms physical activity and physical education. In order to face increasing public pressure in regards to childhood obesity, the Australian Government sought collaboration with the sporting community, not physical educators. According to (Pill, 2007) this was due to branding – sport has a more positive public image than physical education. This collaboration created the 'Active Schools Curriculum' that argued for an increase in physical activity during curriculum time to 120 minutes per week (Pill, 2007). This extra

¹ Appendix 1.1 – Kath Murdoch Inquiry Cycle

time is desirable, however the curriculum stated physical activity, not physical education. In more recent times, the current Australian Curriculum: Health and Physical Education, which was released in 2014 (ACARA, 2019), has received praise from the Australian Council for Health, Physical Education and Recreation (ACHPER) for taking a more holistic approach to student education that is future focussed (ACHPER, 2014).

The situation in Australia is not so different as that in other parts of the world. In China, the PE department within higher education was mainly known as 'sports department' or 'specialized sports training' (Wang, 2017). These departments focused on producing physical education teachers who, upon graduating, specialized in teaching competitive sports. Like Australia's PE evolution, China experienced numerous reforms of their curriculum. The government introduced the "Health First" guiding ideology, which stipulated that enhancement of physical fitness as one of the core goals (Wang, 2017). Despite the Chinese government's "Health First" guiding ideology, PE in higher education did not evolve causing tension between teachers who educated by focusing on competitive sports and a government that was pushing for increasing physical fitness standards. Both approaches present minimal opportunities for a student-centred approach to teaching. A teacher from a public school in the Haidian District of Beijing stated that, "Due to China's test-oriented education system, this form of teaching is difficult to achieve" (Liao, 2019). This teacher was referring to the difficulty of applying student-centred, inquiry-based learning.

According to (Ostergaard, 2016), Physical Education's main aim is to encourage the development of cognitive and physical competencies that allow individuals to gain the confidence and motivation to pursue a healthy and active lifestyle within and outside of school. Positive well-being includes more than physical activity but includes all dimensions of health – physical, emotional, cognitive, spiritual and social health (IB, 2009). In order for this to be effectively achieved students need to be engaged. It is important for teachers and coaches to know how to motivate students (Martinek et al., 2019). PE is generally renowned as the realm for physical competence, which again is a stereotype that does not help the profile of the discipline (Spittle et al., 2012). However, there is some truth to this statement as (Martinek et al., 2019) found that positive engagement in physical education is generally related to fundamental motor competence. This is unfortunate as PE, just like any discipline in school, should be accessible and engaging to all students – not just to those that are physically talented.

As mentioned previously, (Ostergaard, 2016) discussed the benefits of undertaking inquiry-based learning in the PE environment. However, (O'Connor et al., 2014) mentions that there is little understanding about how inquiry-based learning and authentic issues are engaged upon in order to achieve deeper understanding with the PE context.

Inquiry-based learning was developed through the constructivist approach of learning. Vygotsky saw learning as meaning making, where new knowledge connects with existing knowledge (IB, 2009). This approach appreciated that

learners already had an understanding of how their world worked due to previous experiences and learning. Upon the arrival of this new knowledge, the existing learning is reflected upon and further developed. When planning to teach in this way, it is imperative to allow students to demonstrate their prior knowledge and to provide authentic experiences throughout the lessons to allow them to continually reflect on their learning – freedom to construct their own meaning must be respected (IB, 2009). An inquiry focus on authentic issues has the potential to shift the teacher-student relationship in regards to who is knowledgeable on those issues (O'Connor et al., 2014), which in turn can enhance student agency (Vaughn, 2018).

Thus, inquiry-based learning is emphasised in this study as it has the potential to engage all students through the context of real-world authentic issues that students can attempt to solve and potentially achieve praxis. It is flexible as students can work individually or collaboratively and utilise any skills necessary, physical or cognitive, to work towards a task, given or self-chosen.

Praxis is regularly practiced amongst educators according to (Smith, 1999, 2011). Due to praxis being a practical application, it begins with a question or an issue requiring attention. Then, it is deliberated upon within the context of whether it is beneficial to human well-being. Praxis is not simply taking action, but rather it is action that is informed and committed. This curriculum approach differs from the process model since the process model does not make explicit the purpose it serves – it focuses on the learner's process of learning. Whereas, praxis makes central it's purpose, which is the confirmation of human action for a more human world at both individual, and social levels through creativity and collaboration (Lima, 2013).

Praxis is a focus in this study due to its ability to empower students and the fact that it is very suitable to the Grade 4 Health and Fitness unit. Students will inquire into the Health and Fitness world and discover solutions to factors that affect people's well-being. Students will be armed with the necessary skills and knowledge to demonstrate praxis.

Methodology

Within this unit, there will be influences from four curriculum theories: transmission of knowledge, product-focused, process and praxis (Smith, 1996, 2000). However, due to the nature of inquiry, there is less focus on the product but rather on the process of learning that relies on the interaction and relationships between the knowledge, students and teachers (Smith, 1996, 2000). Therefore, a qualitative approach to data collection is most suitable due to its ability to effectively study social life, document human experiences and evaluate the success of programs (Saldana, 2011, p.1).

Saldana (2011, p.10) adds that there are a variety of genres within qualitative research, however the mixed methods research approach is most suitable to this study as it uses a combination of quantitative and qualitative data collection and analysis. These two approaches working in tandem allows for strong supportive arguments.

Participants were 92, grade 4 students aged between 9-10 years. Permission to conduct the study was granted by the Head of School, Elementary School principal and Head of PE provided all data collected from students was anonymous. Due to this anonymity, this school's leadership team deemed it unnecessary to obtain permission from parents of the students in the study.

Collection of Data

Data collection during the Health and Fitness unit extended over 7 weeks, from November 2018 to January 2019. Observations by the Head of PE Department (HOD) and Primary Years Program Coordinator (PYPC) occurred twice, once at the start of the unit in November and towards the end of the unit in January. Student surveys and Inquiry Cycle tracking occurred at the end of most lessons. The teacher survey happened at the conclusion of the unit².

Qualitative Data Collection:

1. HOD lesson observations³
2. PYPC lesson observations
3. Homeroom Teachers, HOD and PYPC post-unit questionnaire focusing on their awareness of inquiry in PE and their views of students taking action during the unit.⁴

In order to ensure bias-free and fair observations it was necessary for someone other than the author to conduct lesson observations. The author could potentially run the risk of distorting judgement to influence data collection as stated by Bell and Waters (2014, p.187). The author recruited the HOD and the PYPC to provide the lesson observations. Both of these observers are professionals in their respective field and have a superior understanding of what constitutes student learning.

Observations were necessary to assess the effectiveness of this curriculum intervention, as it is a useful strategy to collect data on specific behaviour, skills and interactions (Bell and Waters 2014, p.210). To narrow the focus of the observation and to avoid observer confusion, a structured observation approach was selected. Criteria were created that aligns with the unit's outcomes and allowed for observer focus.

It was necessary to have more than one observer to conduct the observations as Bell and Waters (2014, p.211) mention that observers can perceive things differently. Therefore, the HOD is PE trained and potentially has a different viewpoint to an effective PE lesson as the PYP Coordinator who has a homeroom teacher background. The author informed both observers to be as unobtrusive as possible to reduce the likelihood of distorting any key moments in the lessons (Bell and Waters, 2014, p.215).

² Appendix 1.14 – Data collection schedule

³ Appendix 1.2

⁴ Appendix 1.7

Furthermore, it was of great importance to gain the insight of the homeroom teachers of the students who were part of this study. A key part of the unit was for students to take action in order to achieve praxis. Homeroom teachers have daily contact with the students and have a higher chance of seeing any positive changes in the students in respect to taking action. The author also wanted to view their professional viewpoint on inquiry taking place in PE. As (Ostergaard, 2016) mentions, inquiry is normally associated with education in the sciences but rarely seen in PE. The questions were ordered according to Bell and Waters' (2014 p.166) recommendation of starting with simpler questions (tick boxes) then leading to questions requiring more thought. The 6-question questionnaire was broken into 2 parts. The first section was designed to discover the responder's attitudes of inquiry in PE. The author was careful to deter away from leading questions that could increase the prevalence of bias and possibly affect outcomes.

In your opinion, what would be required for inquiry-based learning to occur in PE? If you do not think inquiry-based learning can occur in PE, then please say so and explain.

The second section questioned the responder's observations of their students taking action during the unit.

Throughout this unit, there has been an emphasis of Taking Action. Have you seen your students taking action in regards to health and fitness? If yes, please list all examples. If you selected no, please write N/A.

Quantitative Data Collection:

1. Student surveys asking about their enjoyment and confidence levels during the lessons⁵
2. Inquiry Cycle tracking: Students were tracked throughout the unit on where they were on the Kath Murdoch Inquiry Cycle.⁶
3. Learning outcome achieved based upon submitted student work⁷

Student surveys were used to discover the enjoyment levels of the students in class and how confident they were to teach someone else their new learning. A Likert scale was used due to its simplicity and accessibility to the sample demographic, 9-10 year olds (Bell and Waters, 2014 p.163). The form was both in English and Chinese for accessibility and questions were worded clearly and appropriate for the sample to understand.

How much fun did you have today? 你今天有多开心？

The platform for the survey was via Google Forms and distributed through the students' online portfolio. The author was present during all survey completions, which is advantageous according to Bell and Waters (2014,

⁵ Appendix 1.9

⁶ Appendix 1.11

⁷ Appendix 1.13

p.168) as the author could explain the purpose of the survey and experience better cooperation from the students due to personal contact.

Tracking student's learning process through the Kath Murdoch Inquiry Cycle provided a valuable insight into how the students felt where they were at with their learning.

Although the focus of this Health and Fitness unit was on praxis, the learning outcome is still a product that requires assessing. The learning outcomes states:

Students understand what is required to assess physical fitness and are able to record relevant data in order to provide appropriate health and fitness recommendations.

As mentioned by Saldana (2011, p.61), numbers can create depth and context to qualitative data. Combining the achievement data of student work to the HOD and PYPC observations can create a rich picture of student learning within the classroom.

Quantitative Data Results

As mentioned previously, teachers need to know how to motivate students in order to effectively teach them (Martinek et al., 2019). When students are motivated, perceived physical competence is enhanced which in turn enhances enjoyment in PE (Grasten and Watt, 2016). (Pharez, 2016) then adds that enjoyment encourages engagement. Students indicating a high enjoyment level selected 10; with students having low enjoyment levels selected the number 1.⁸

⁸ Appendix 1.10

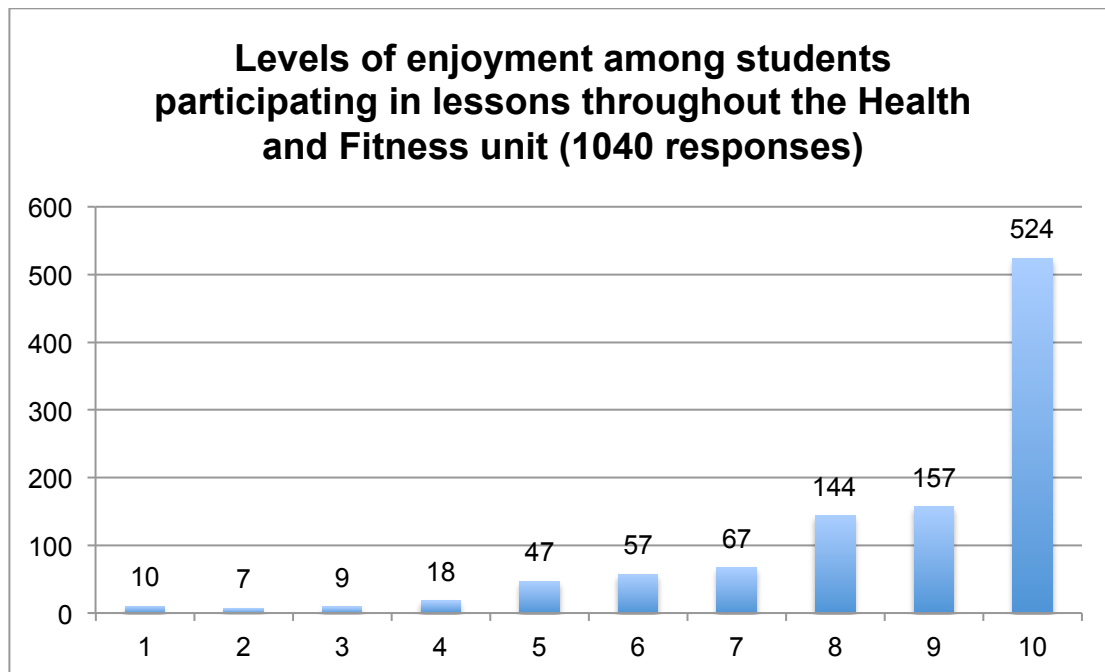


Chart 1: Levels of enjoyment among students participating in lessons throughout the Health and Fitness unit (1040 responses)

Confidence levels were investigated due to the relationship of confidence, leadership and engagement (Vaughn, 2018). This relationship can also be called 'Student Agency' where students have the power to choose what they want to investigate and how. Students with a high confidence level in teaching other students their new knowledge selected the number 10, whereas students with lower confidence levels in the lessons selected lower numbers.⁹

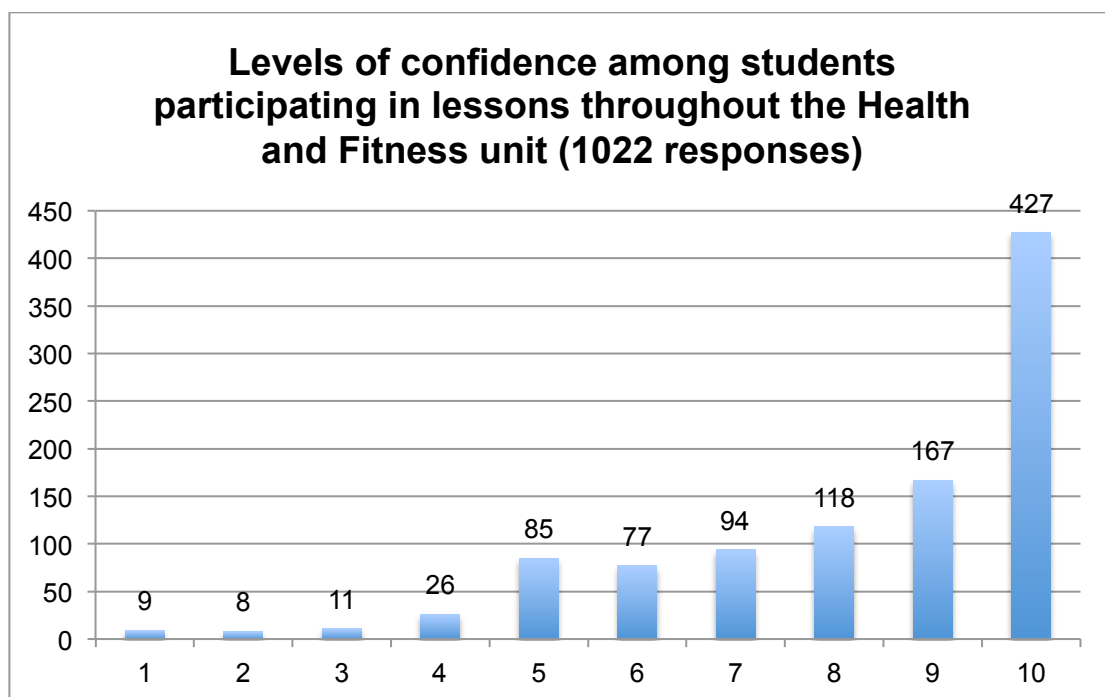


Chart 2: Levels of confidence among students participating in lessons throughout the Health and Fitness unit (1022 responses)

⁹ Appendix 1.10

The Kath Murdoch Inquiry Cycle was used to frame the unit. This framework is flexible since it is non-sequential. Students' learning can flow anywhere between the 6 stages. An app called 'Plickers' was used to easily track students movements between the stages.

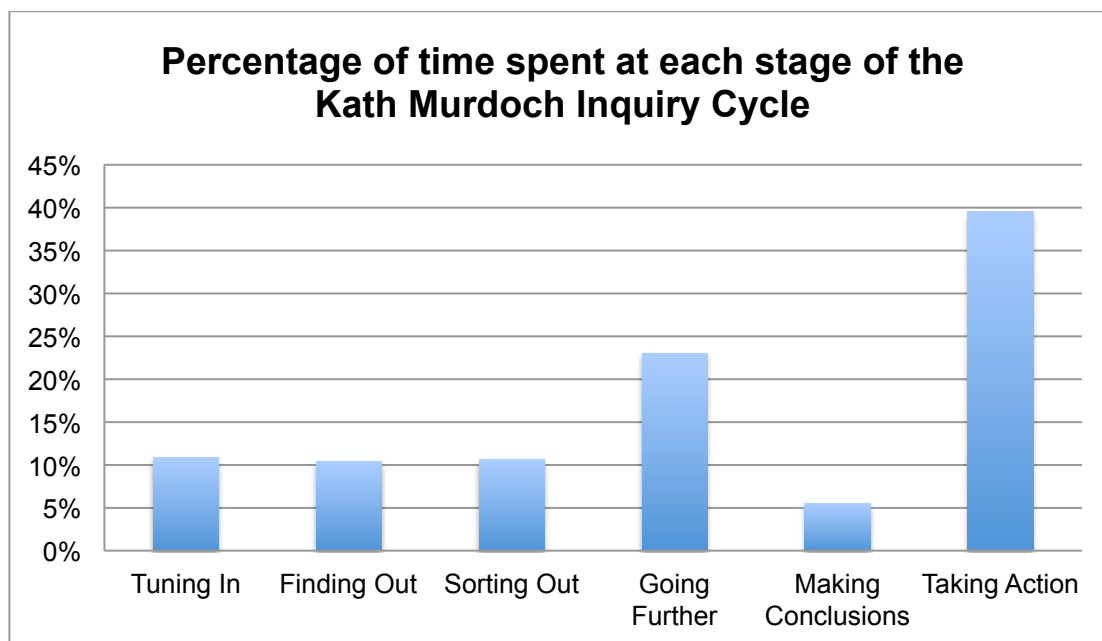


Figure 3: Percentage of time spent at each stage of the Kath Murdoch Inquiry Cycle

Each student handed in anywhere between 1-7 pieces of work to be assessed against the student outcome.¹⁰ Students were assigned another member of the school community for 40 minutes. During this time, the student leads a fitness test consisting of three tests designed to assess different areas of fitness. The student records the data, interprets it and deduces which type of exercise program the client requires to improve their fitness test results. If the student chooses the correct program for the client based upon the fitness test results, the student achieves the outcome.

¹⁰ Appendix 1.12

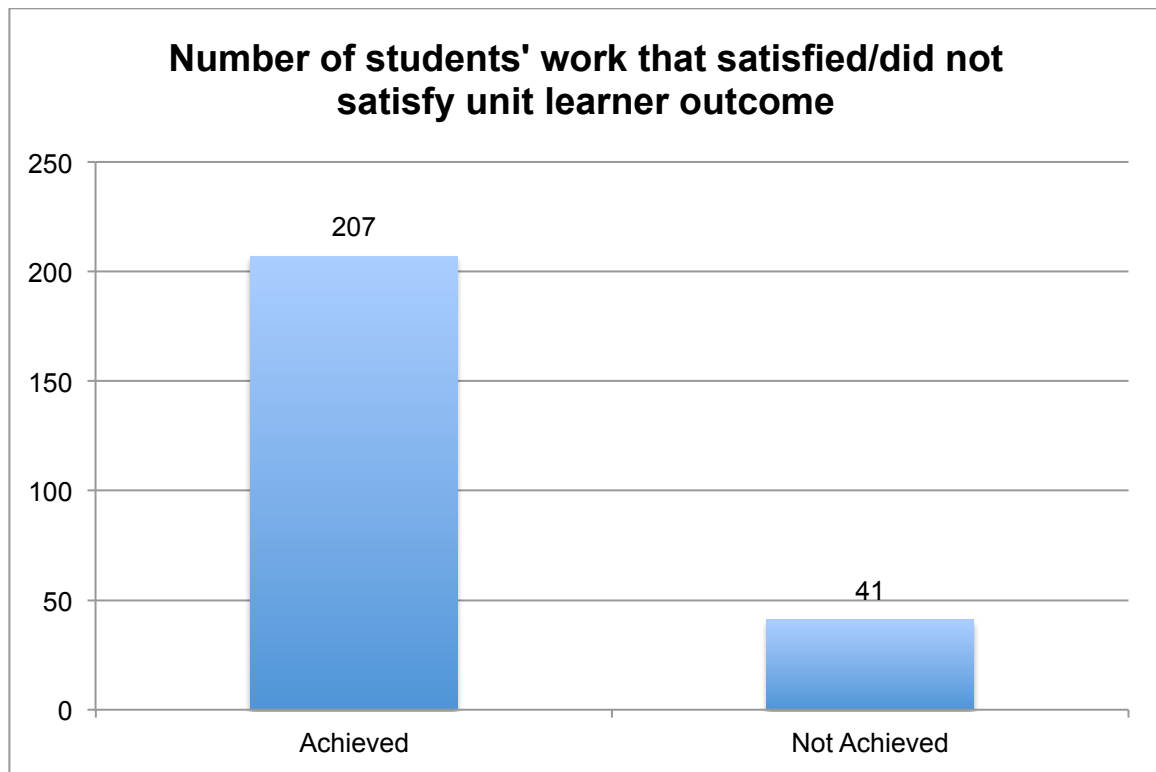


Figure 4: Number of students' work that satisfied/did not satisfy unit learner outcome

Data Analysis

Paying attention to the HOD observations from November it was evident to see positive levels of enjoyment¹¹. This corresponds well with Figure 1 where 524 responders indicated a 10 for enjoyment throughout the entire unit. Enjoyment in a learning environment indicates engagement (Pharez, 2016) thus, deeper learning can occur as students value the lesson and have an understanding of the purpose (Martinek et al., 2019). As also observed, the PYPC observed¹² in the same lesson 5 examples of students demonstrating the Learner Profile – Thinker. The IB mentions that a Thinker uses their thinking skills critically to recognize and face complex problems to discover appropriate solutions (IB, 2009). Students analysed the Central Idea of the unit:

Recognizing the factors that affect people's health and fitness can help improve people's well-being.

The students named several factors and decided to investigate 'obesity.' The author gave a website to investigate and the PYPC observed students collecting relevant data and attempting to find solutions to the problem by writing their ideas down.

Furthermore, in the January observations, both the HOD¹³ and PYPC¹⁴ noted the students confidently explaining, demonstrating and correcting exercises to

¹¹ Appendix 1.3

¹² Appendix 1.4

¹³ Appendix 1.5

others during their Warrior Fitness event where the Grade 4 students spent the day leading exercise sessions for the school community. This relates well to Figure 2 where 427 responders indicated that they were very confident to share their knowledge to others. This is further supported by a Facebook comment by one of the Grade 4 homeroom teachers (Sackrison, 2019) where she mentions students bought into their role as trainers who were training and educating other school community members. She further mentions that this was agency in action and that the students enjoyed the responsibility.¹⁵ The Head of School (Lawton, 2019) tweeted about the event and used key words from the school's mission statement to describe it.¹⁶ The confidence the students demonstrated is necessary for the development of positive leadership skills – a necessary 21st century skill (Soffel, 2016).

As noted in the HOD and PYPC January observations, students were actively involved in the training of others in the hopes of improving the community's health and fitness. Students created their own exercise programs for each area of fitness gathered from class and from their own research. At the conclusion of the event, students indicated they were all taking action. This area of the inquiry cycle was central to this study and according to Figure 3 students largely felt they were taking action with 40% of the time spent in this respective stage. This corresponds well with the post-unit teacher surveys¹⁷ where responders indicated they saw many examples of students taking action by running the Warrior Fitness event, participating in fitness activities during recess and having more awareness about leading a healthier lifestyle through exercise. The responders indicated that the examples they listed were all good for human well-being, a key element of achieving praxis (Smith, 1999, 2011).

From responses gathered in the teacher survey, 50% of responses indicated they had no experience of inquiry in PE. Those responders who had some experience of inquiry in PE indicated it was guided inquiry. Responders mentioned for inquiry to occur sufficient time and resources needs to be available with plenty of opportunity for students to take risks with their learning. The overall consensus demonstrated teachers have an open and positive attitude towards inquiry in PE.

Based upon the student work submitted, the vast majority demonstrated that the students largely satisfied the learner outcome. Figure 4 indicates that out of 248 pieces of work submitted, 207 achieved the learner outcome. Students were able to collect data through the fitness tests they conducted, interpreted the data accurately and applied their learning by providing appropriate exercise recommendations to the client. This is corroborated by both the HOD and PYPC January observations¹⁸. All the skills listed: collecting data, interpreting data and application are skills the IB deems valuable for life within and outside of school (IB, 2009). Here, the outcome data supports the qualitative data as student enjoyment and confidence levels were high,

¹⁴ Appendix 1.6

¹⁵ Appendix 1.15

¹⁶ Appendix 1.16

¹⁷ Appendix 1.8

¹⁸ Appendix 1.5, Appendix 1.6

indicating a high level of engagement, which in turn influenced the positive student work.

Based upon the positive qualitative and quantitative results, this curriculum intervention appears to be successful and has the potential to change the way educators approach their lessons. Therefore, the author developed a framework for, not only PE teachers, but teachers who are interested in the inquiry-based approach. The author found the Kath Murdoch Inquiry Cycle to be extremely powerful, however it does have its shortcomings. It demonstrates how students inquire and how teachers can facilitate lessons but a lesson needs a plan – not tightly but rather it should serve as a guide since inquiry needs to be open to spontaneous investigation (Murdoch, 2017). Therefore, this flexible framework is divided into two sections, planning and execution, with each section influencing one another as plans could potentially change depending on the lessons. The planning section is shaped as a framed picture with the main theme or central idea as the main focus. The frame is divided into 4 sections: the unit of inquiry, ideas for authentic experiences, the Learner Profile, and the Approaches to Learning (ATLs). The ATLs are essential skills that are transdisciplinary, meaning they can be used within school and in the student’s life outside of school (IB, 2009). This ‘plan’ is encapsulated in a rounded square, which flows into a hollow rounded square towards the Inquiry Cycle where the lesson has been executed. The hollow square has arrows pointing to the 6 areas of the cycle indicating students can access any stage once the plan has been executed. Arrows connect every area of the cycle indicating the non-sequential nature of the framework – the natural order of wonder and curiosity. Once this framework is used, teachers can place this in the classroom and allow students to continually refer to it and write their own thoughts on it such as ideas for authentic experiences, or listing references for the Finding Out stage of the cycle. It is a dynamic, accessible and flexible framework that allows for student voice and agency.¹⁹

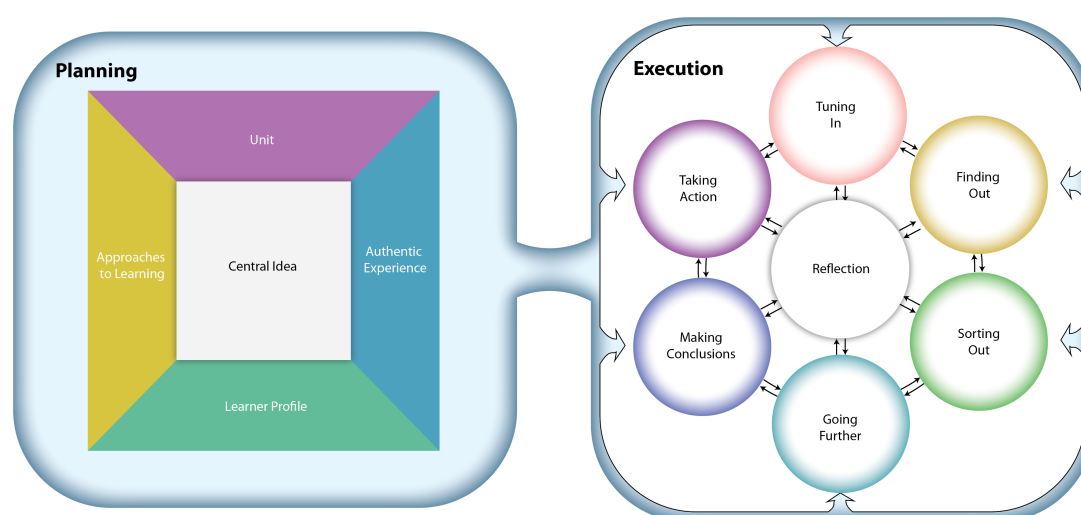


Figure 5: Inquiry framework for planning and executing lessons

¹⁹ Appendix 1.17

Conclusion

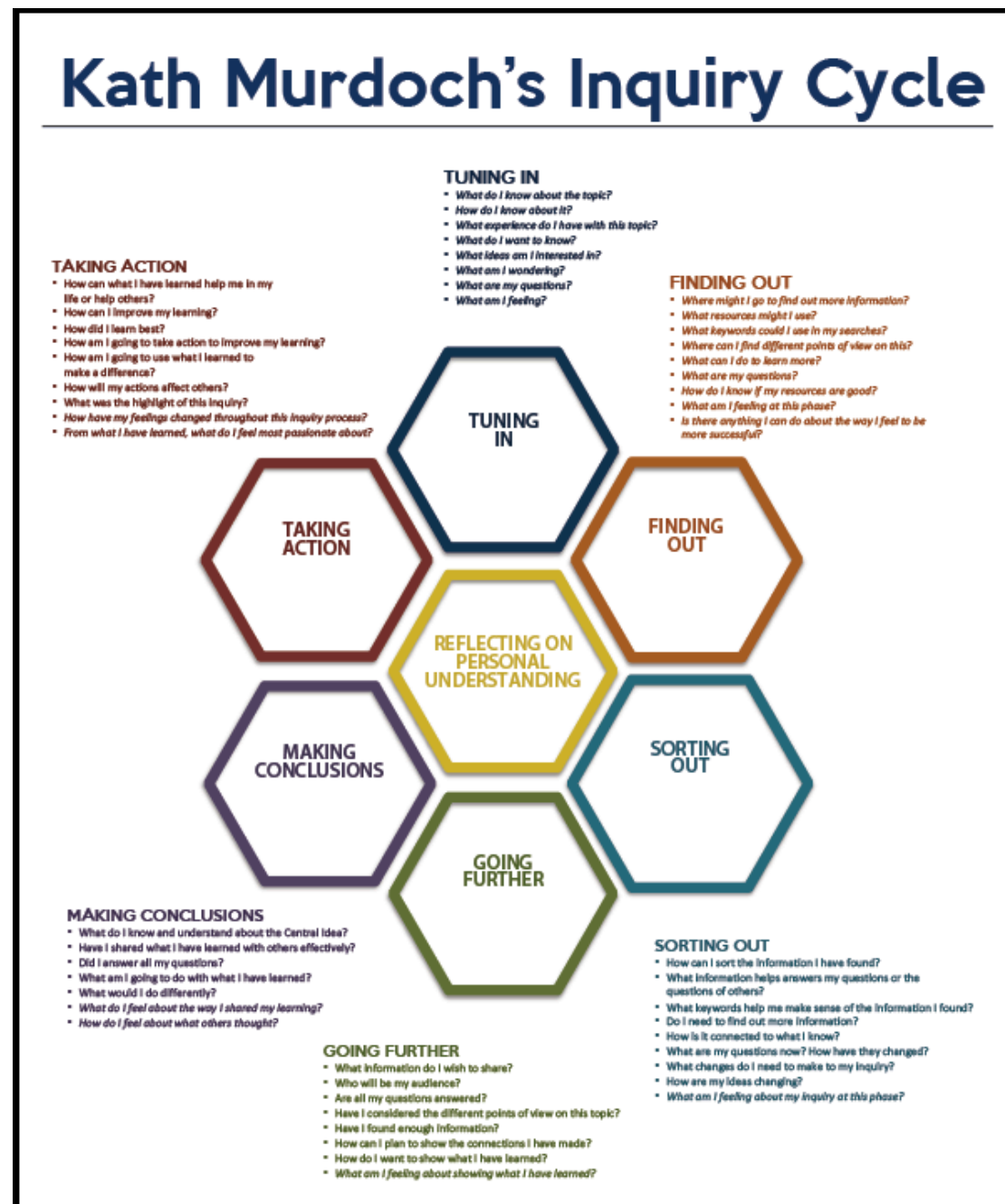
The author believes that this curriculum intervention is viable. Inquiry-based learning enhanced both the students' physical and cognitive abilities by learning through physical activity and cognitive knowledge as supported by the HOD and PYPC observations. Furthermore, students regularly took action in PE and outside of PE time as noted in the post-unit teacher surveys. Effective inquiry allows students to question, theorise, investigate, analyse, and apply their learning to authentic problems and challenges. The student sample in this study achieved that.

Based upon the results described and the literature reviewed, inquiry-based learning can play a significant role within PE by allowing teachers to be more than just physical activity providers but to become physical educators where PE is considered a learning area. Students will have the opportunity to promote their learning in multiple ways and to apply their learning by taking action through authentic experiences with the potential of making a difference in their lives and of others. Physical Education will then hopefully, one day, break free from the enduring negative stereotype.

This study has improved the author's critical understanding of inquiry-based learning and how it can be implemented in Physical Education. However, there are three areas that still need to be studied in the future:

- Inquiry worked in this study due to the unit of inquiry – Health and Fitness. It still needs to be determined whether inquiry can occur in other units such as Invasion Games or Striking and Fielding, where sport is more of a central theme.
- This unit succeeded partly because of the extra time negotiated with other teachers and school leadership. This was an exceptional case and therefore, granted. However, it needs to be investigated whether this model of inquiry can work using the standard timetable.
- This study concluded with the development of a new framework for inquiry due to the positive results gathered and the viability of inquiry in PE. However, the framework still needs further piloting to allow for further evaluation and refinement.

Appendix 1.1: Kath Murdoch Inquiry Cycle



Appendix 1.2: Blank Observation Template

Grade 4

Health and Fitness

Observation #:

Date:

Observation Criteria							
Learner Profile		Self-Management		Research		Thinking Skills	
Thinker	TH	Gross Motor	GMS	Collect Data	CD	Application	AP
		Healthy Lifestyle	HL	Record Data	RD	Evaluation	EP

[illegible]

Appendix 1.3: HOD Observation – November 2018

Grade 4 Health and Fitness Observation #: 4S Date: Nov 28

Observation Criteria							
Learner Profile		Self-Management		Research		Thinking Skills	
Thinker	TH	Gross Motor	GMS	Collect Data	CD	Application	AP
		Healthy Lifestyle	HL	Record Data	RD	Evaluation	EP

Time	Notes	Criteria Observed
8:32	Kids starting warmup – running, lunging, jumping jacks	GMS/HL
8:38	How is heart, breathing, muscle?	TH
8:39	CI – kids interacting with David – jumping up if they know the answer in the blank. What do the words in blank mean? Kids explaining it	TH
8:40	What affects healthy living? Kids making list. Explaining some of them – falling, sickness	TH/HL
8:43	Factors affecting health and fitness – link in seesaw about obesity in the world? Kids checking out world map.	TH/HL
8:47	Kids answering what obesity means	TH/HL
8:48	Percentage of people who are obese – China (2011) vs. USA. (2016)	CD
8:51	Where will China be now (2015)?	EP
8:52	Looking at new map to get data – China vs USA	CD
8:53	Why? Kids answering – eating too much, junk food, not exercising	TH EP
8:54	Kids writing things down they find interesting from the map and data	TH RD
8:57	Kids stating how they feel from the information found out – shocked, amazed	AP
8:58	LP – why do we need thinkers? Decisions, solutions	AP TH
8:59	Students coming up with a list of solutions, posting on board and then putting number in inquiry cycle where they feel they are at	AP TH EP
9:07	Relay	GMS/HL
9:09	Heart, muscle breathing – how are they	TH
9:09	Relay – run backwards	GMS/HL
9:12	Falling – lose balance – running backwards helps, but not if you are 80 ☺	TH AP
9:13	Relay – run, spin 3 times, run	GMS/HL
9:15	Having fun and exercising	TH
9:15	Create own relay – share ideas	TH/AP
9:17	Relay with ideas	GMS/HL

9:19	Simple, can play with others, health – only you? Feelings/emotions, social (team)	TH/AP
9:21	Jog and talk about solution – tell each other your solutions	GMS/CD
9:24	Kids share partners solutions with everyone - Laptop – kids writing their solution and their partners solution down	RD
9:31	Kids work on individualized exercise program from computer options	TH/GMS HL/ AP
9:43	Filling in student survey	TH/AP/EP

Appendix 1.4: PYPC Observation – November 2018

Grade 4 Health and Fitness Observation #: Date: Nov. 28, 2018

Observation Criteria							
Learner Profile		Self-Management		Research		Thinking Skills	
Thinker	TH	Gross Motor	GMS	Collect Data	CD	Application	AP
		Healthy Lifestyle	HL	Record Data	RD	Evaluation	EP

Time	Notes	Criteria Observed
8:32	General warmup- 5 mins (student chosen from a collection on computers)	GMS
8:37	Students sitting with laptops closed. "How does your heart feel? Muscle? Breathing?" Cloze activity with the central idea. Students jump up if they know a word. "What is this unit all about?" Health and fitness. What does factors mean? Things. What are some things that affect health and fitness? Students call out factors.	TH HL
8:42	Open up seesaw- One factor affecting health and fitness. Students look through website- Obesity prevalence throughout the world. What does obesity mean?	TH
8:48	Discussion about percentages of people who are overweight, gender, what year it was the research was done, comparing china to another country. Where would China be in...? Students look through the data, discuss and are shouting out results and showing surprise. Writing down the different percentages on the board. Why is the data going up? Students give reasons.	CD EP TH
8:53	Double screen the website and word document and write down anything you found interesting.	CD RD TH
8:57	How do you feel about the information you found out? You are the future leaders, we need people who are thinkers? Why do we need thinkers? Refers to LP- thinker and puts the LP card on the board. Making decisions, coming out with solutions. We are going to write some solutions- get a sticky note, get a pencil and write one down, Stick it on the Obesity paper on the wall. Iona says something and David says "that's action" and encourages her to go and put a sticker on the action wall over her name.	TH
9:04	David asks students to put their picker sticker on the Inquiry circle on the wall, based on where they are in class.	EP
9:07	You said a reason for obesity was not enough exercise. One reason people don't exercise is because it's boring. One way to make it fun is a relay. Students names are called out and put into groups. Students have a relay race.	AP HL GMS
9:09	How's your heart rate? Muscles? Breathing? And having fun?	

Appendix 1.5: HOD Observation – Jan 2019

Grade 4

Health and Fitness

Observation #: 2

Date: Jan 24

Observation Criteria							
Learner Profile		Self-Management		Research		Thinking Skills	
Thinker	TH	Gross Motor	GMS	Collect Data	CD	Application	AP
		Healthy Lifestyle	HL	Record Data	RD	Evaluation	EP

Time	Notes	Criteria Observed
	Explaining/demonstrating skipping/pushups, etc movement, fixing students technique, hands on to put body in correct position	GMS/TH
	Writing down scores	RD
	People doing exercises, counting, observing, etc	CD
	Using Darebee for exercises after testing	AP
	Using data to create workout	TH/EV/AP
	Doing most exercises together – trainer & trainee	GMS
	Reading equipment - stop watch, sit & reach	TH/AP
	Testing skills	CD
	Fitness recommendations	HL, EV, TH
	Asking questions – why do they want to do this? Using answer to create plan	AP, TH
	Posting data collection sheet on trainers	EV, TH
	SeeSaw for review by teacher	

Appendix 1.6: PYPC Observation – January 2019

Grade 4

Health and Fitness

Observation #: 2

Date: 01/24/2019

Observation Criteria							
Learner Profile		Self-Management		Research		Thinking Skills	
Thinker	TH	Gross Motor	GMS	Collect Data	CD	Application	AP
		Healthy Lifestyle	HL	Record Data	RD	Evaluation	EP

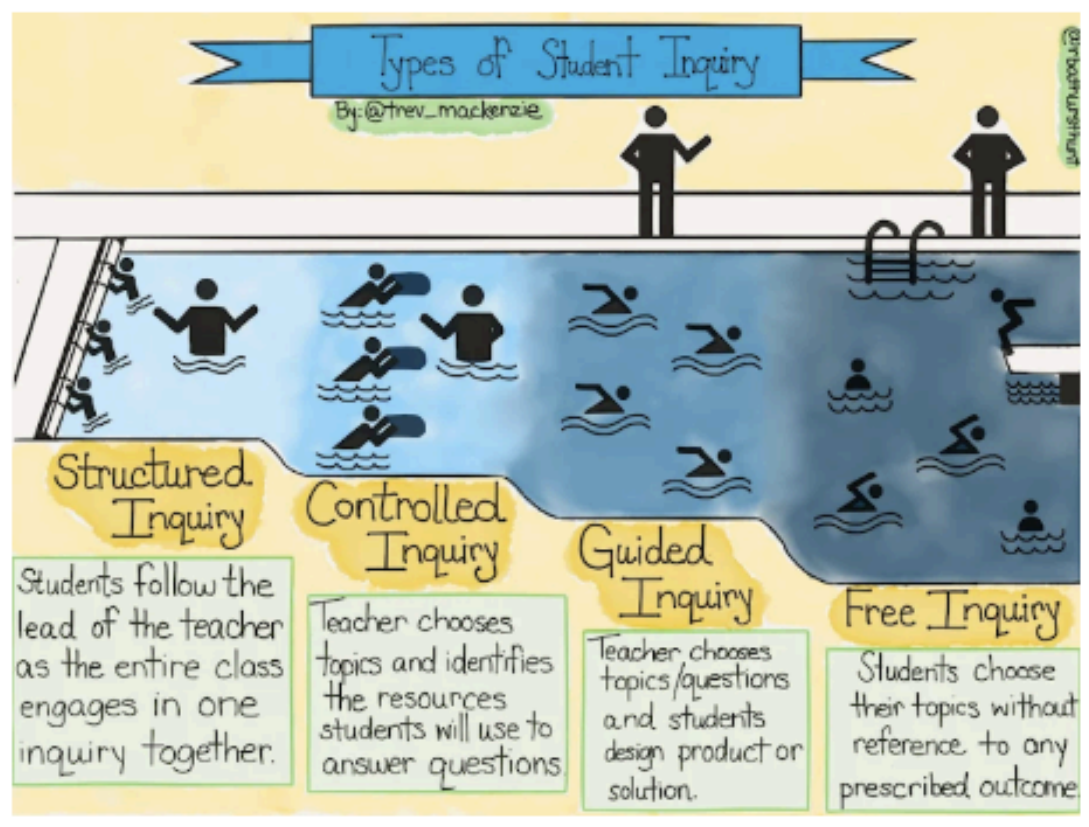
Time	Notes	Criteria Observed
2:10-2:50	G4s are lined up with other grade levels and paired off. Once paired, students go off to different parts of the gym.	
	Students ask their partners to do different activities such as wall-sit, sit and reach, jump roping, stretching, core exercises, running with clipboards and stop watches in hand and recording down the scores and numbers. Students (trainers) are demonstrating how things are done as well as explaining rules and what should be done.	RD, CD, GMS, AP, EP
	Some students are using a computer to show how certain moves are done and to see what areas muscular, flexibility the movements relate to.	HL, AP
	David is answering questions and moving around to help students who need it. Students know what they need to do next and can move from activity to activity with their trainee. Trainers are correcting postures and helping to perfect movements. Some trainers are calling out words of encouragement.	AP, TH
	The gym is filled with students (over 160 students) and teachers. All students are working with someone and being active.	GMS, HL, AP, CD, RD, TH

Appendix 1.7: Blank Teacher Survey

Prior to this health and fitness unit, have you heard of or experienced inquiry-based learning in PE?

- ☐ Yes
- ☐ No

Using this image as an example of inquiry in PE, which type of inquiry have you observed? (If you have not seen any inquiry in PE, then please select N/A)



- ☐ Structured inquiry
- ☐ Controlled inquiry
- ☐ Guided inquiry
- ☐ Free inquiry
- ☐ N/A

In your opinion, what would be required for inquiry-based learning to occur in PE? If you do not think inquiry-based learning can occur in PE, then please say so and explain.

Your answer

Throughout this unit, there has been an emphasis of Taking Action. Have you seen your students taking action in regards to health and fitness?

- ☐ Yes
- ☐ No

If yes, list all examples of student action. If you selected no, please write N/A.

Your answer

If you did select "yes", would you say this type of action was good for human well-being in general. Select N/A if you selected "no" for question 4.

- ☐ Yes
- ☐ No
- ☐ N/A

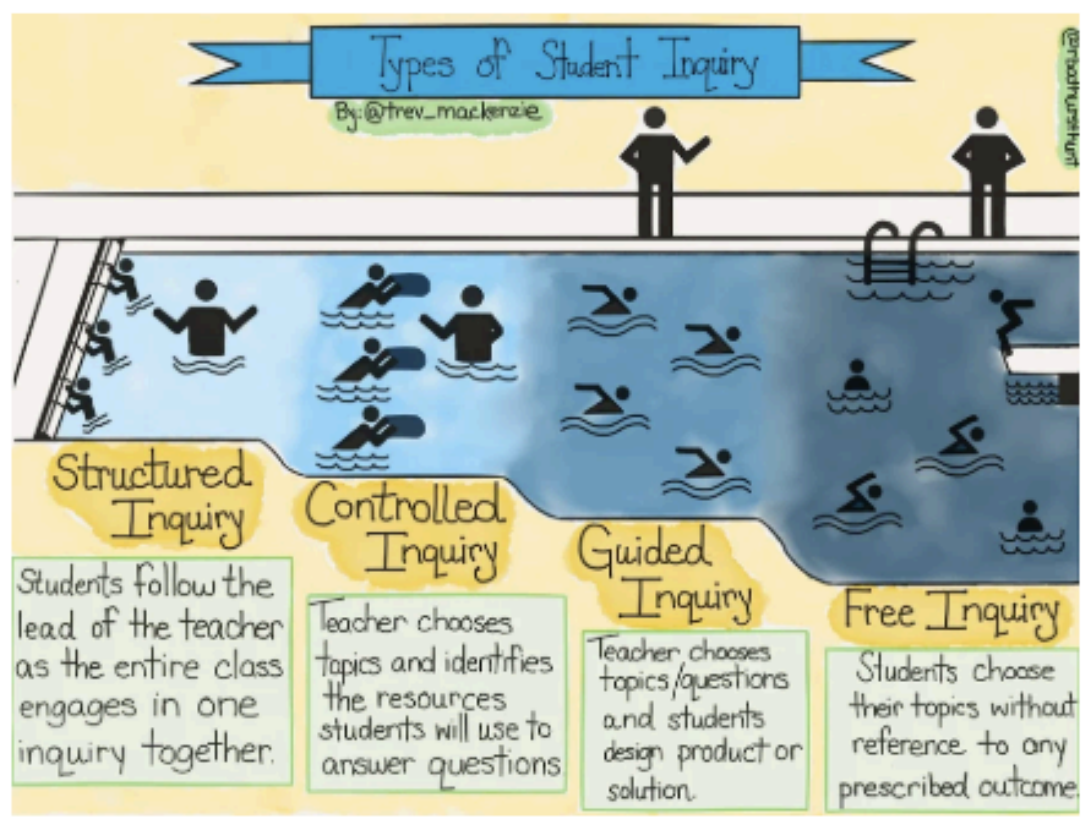
Appendix 1.8: Completed Teacher Survey

Prior to this health and fitness unit, have you heard of or experienced inquiry-based learning in PE?

☒ Yes

☐ No

Using this image as an example of inquiry in PE, which type of inquiry have you observed? (If you have not seen any inquiry in PE, then please select N/A)



☒ Structured inquiry

☒ Controlled inquiry

☒ Guided inquiry

☐ Free inquiry

☐ N/A

In your opinion, what would be required for inquiry-based learning to occur in PE? If you do not think inquiry-based learning can occur in PE, then please say so and explain.

Safe environment, where students can share/communicate their ideas, ask questions and take risks. Students also need to be open-minded and listen carefully and respectfully to others. Establishing good classroom rules and routines to create this environment, but also in regards to collaboration so students can work well together. Teachers need to understand that they are the facilitator and students need to learn that they have an active role in their learning by asking questions and investigating. Students would also need resources in order to facilitate their inquiry.

Throughout this unit, there has been an emphasis of Taking Action. Have you seen your students taking action in regards to health and fitness?

☒ Yes

☐ No

If yes, list all examples of student action. If you selected no, please write N/A.

Students running the Warrior Fitness, wanting to participate in km club, doing fitness activities on the field at recess and eating healthier at snack time.

If you did select "yes", would you say this type of action was good for human well-being in general. Select N/A if you selected "no" for question 4.

☒ Yes

☐ No

☐ N/A

Appendix 1.9: Blank Student Survey

Student Survey

Grade 4 - Health and Fitness

* Required

How much fun did you have today? 你今天有多开心? *

1 2 3 4 5 6 7 8 9 10

Not fun.
Terrible.
Boring. 不好
玩。可怕。鏗.

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

Great fun! I
had a great
time! 非常有
趣! 我过得很
愉快

What is something you learned today? 你今天学到了什么? *

Your answer

How confident are you to teach your new learning to someone else? 你对自己的新学习有多大的信心?

1 2 3 4 5 6 7 8 9 10

Not confident.
不自信。

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐



Very
confident! 非
常有信心!

Appendix 1.10: Completed Student Survey

QUESTIONS

RESPONSES

1,047

< 7 of 1047 >  

Responses cannot be edited

Student Survey

Grade 4 - Health and Fitness

* Required

How much fun did you have today? 你今天有多开心? *

1 2 3 4 5 6 7 8 9 10

Not fun. Terrible.
Boring. 不好玩。
可怕。 糟糕。

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☒ ☐ ☐

Great fun! I had
a great time! 非常有趣！我过得很愉快

What is something you learned today? 你今天学到了什么? *

We learned about health and fitness. We just finished tuning in!

How confident are you to teach your new learning to someone else? 你对自己的新学习有多大的信心?

1 2 3 4 5 6 7 8 9 10

Not confident. 不自信。

☐ ☐ ☐ ☐ ☐ ☐ ☒ ☐ ☐ ☐

Very confident! 非常有信心!

Submitted 11/19/18, 9:50 AM

Appendix 1.11: Populated Inquiry Cycle Tracker

inquiry cycle

tuning in

WHAT DO I KNOW?
WHAT AM I WONDERING?
WHAT DO I WANT TO KNOW?

1 2 3 4 5 6

7 8 9 10 11 12

13 14 15 16 17 18

19 20 21 22 23

making conclusions

1 2 3 4 5 6

7 8 9 10 11 12

13 14 15 16 17 18

19 20 21 22 23

WHAT DO I KNOW AND UNDERSTAND ABOUT THE CENTRAL IDEA?
WHAT AM I GOING TO DO?

going further

1 2 3 4 5 6

7 8 9 10 11 12

13 14 15 16 17 18

19 20 21 22 23

Reflecting

WHAT INFORMATION DO I WISH TO SHARE?
ARE ALL MY QUESTIONS ANSWERED?

finding out

1 2 3 4 5 6

7 8 9 10 11 12

13 14 15 16 17 18

19 20 21 22 23

WHERE CAN I FIND MORE INFORMATION?

sorting out

1 2 3 4 5 6

7 8 9 10 11 12

13 14 15 16 17 18

19 20 21 22 23

HOW CAN I ORGANISE MY INFORMATION?
DO I NEED TO FIND MORE INFORMATION?

Appendix 1.12: Blank Health and Fitness program template designed by a student

Client's name & class: _____ Trainer's name & class: _____

Why does the client need to do this:

Test	First try
Jump Rope (Cardiovascular Endurance)	
Wall-Sit (Muscular Endurance)	
Sit and Reach (Flexibility)	

Exercise Program:				
Area of Fitness	Exercises	Sets	Reps	Rest

Health and fitness recommendations:

Appendix 1.13: Completed Health and Fitness program that achieves stated learner outcome

Client's name & class [REDACTED] Trainer's name & class [REDACTED]

Why does the client need to do this:
- be healthier

Test	First
Jump Rope (Cardiovascular Endurance)	100
Wall Sit (Muscular Endurance)	1:09
Sit and Reach (Flexibility)	21.5

Exercise Program: Muscular Endurance

Area of Fitness	Exercises	Sets	Reps	Rest
ME	Push-Ups	3	5	30s
	Plank Get-Ups	3	5	30s
	Squats	3	10	30s
	Lunges	3	10	30s
	Tuck Crunches	3	10	30s
	Roman Twists	3	10	30s
	Jumping Lunges	3	10	30s
	High Knees	3	20	30s
	Jump Squats	3	10	30s
	Calf Raises	3	10	30s
	March Steps	3	10	30s
	Jumping Jacks	3	10	30s

Health and fitness recommendations:
- Exercise on muscular endurance every day for 30-40 minutes

Template created by Helen Yi (2015)

Appendix 1.14: Data Collection Schedule

Data Collection Schedule							
	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7
Event	Start of unit	Unit teaching	Unit teaching	Unit teaching	Unit teaching	Unit teaching	End of Unit
Data Collection	Student Survey	Student Survey	Student Survey	Student Survey	Student Survey	Student Survey	Student Survey
	Inquiry Cycle Tracker	Inquiry Cycle Tracker	Inquiry Cycle Tracker	Inquiry Cycle Tracker	Inquiry Cycle Tracker	Inquiry Cycle Tracker	Inquiry Cycle Tracker
	HOD Observation						HOD Observation
	PYP Coordinator Observation						PYP Coordinator Observation
							Homeroom Teacher Survey

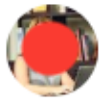
Appendix 1.15:



Sandy Roane Sackrison What an amazing day! You did a great job getting the kids to "buy in" to their role. Agency in action as they designed specific workouts and modified others for their clients. They loved the responsibility they earned and the outcome was first rate. Well done, David!



Appendix 1.16:



Julie Lawton [redacted] Jan 24

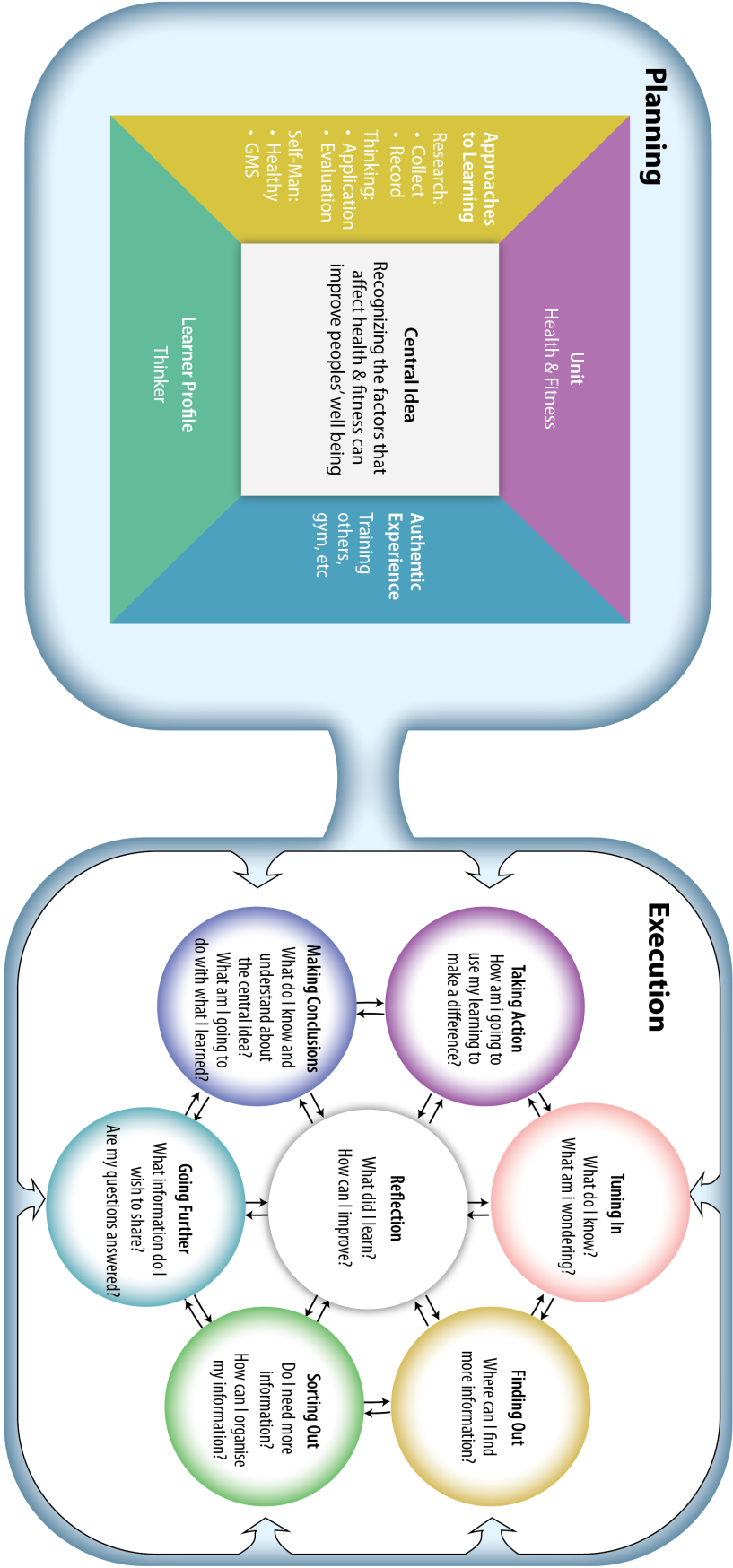
Inspiring, empowering & challenging! [redacted]



[redacted]

Grade 4 students recently held a "Warrior Fitness" day during which they utilized what they have learned from inquiring into the Health and Fitness world and helped our community members get into shape!

Appendix 1.17:



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