SAQ International LTD

Project Pilot Report

Cogan Primary School Penarth Wales Physical Activity Tracking

Date: 10/06/2019 – 16/07/2019

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Version 1 2019

Introduction

Throughout the UK there is a major concern from schools and Public Health in regard to the lack of physical activity in primary schools.

It has been clearly identified by these bodies that there is no actual data on the physical activity levels of children in these schools. Generally the information generated in regard to levels and intensity of activity is anecdotal therefore is guess work.

Sport and health science has proven that various levels of intensity including high intensity is crucial in the development of children's physical health, well-being, mental health, confidence and learning development.

In the UK children arrive at school with 26% of them being obese. When they depart primary school in year 6 this has risen to 33%. Obesity has more to do with poor diet than lack of physical activity. Physical activity will help build the child's confidence and decision making process; therefore, they are more likely to make better life choices which means eating the correct food.

Physical movement, fundamental movement and different levels of intensity are key for the future positive life skills of all primary school children.

The development of modern technology in regard to tracking has led to a boom in GPS individualised wrist worn devices.

The problem with GPS is that they are not accurate and also each device has its own individualised and personal online page. Also the data can be clearly seen on the band itself. A recent study at a number of schools in the UK felt this was negative as children would

compare to each other which led to teasing and other negative interactions.

Also the schools and parents were concerned that tracking was invasive and could potentially be used for other purposes.

PAT (Pupil Activity Tracker) users an accelerometer and a receiver. There is no information on the band. The student puts the band on in the morning and takes it off in the evening in the classroom. The band records all movement throughout that period and when it's put with the receptor (capture box) it captures all the movement and sends it to the Cloud which is then turned into data and placed onto the desktop.

The PAT Pilot Project conducted involved one class of year 6 students. The class was going to be monitored over two periods with a gap in between where some intervention physical sessions were to be implemented.

The Aim

The implicit aim of the pilot project was to gather data of the students levels of physical activity throughout the school day. The data was collected over two periods with an intervention period in between that included some additional physical activity.

The data collected will provide the following:

- Total steps
- Total meters
- Total calories
- Total PAT Points (intensity)

Levels of intensity:

- Sedentary

- Low active
- Somewhat active
- Active
- Highly active

The data can be displayed in the following manner:

- Whole class
- Individual student
- Boys
- Girls

Data can also be displayed in the following groups:

- Hours
- Days
- Weeks
- Months

The data has the ability to show you high activity periods to periods of no activity spread between hours, days and weeks.

Intervention results

Intervention 1 period - 10/06/2019 – 16/06/2019

Intervention 2 period - 09/07/2019 – 15/07/2019

Whole class results:

	Intervention 1	Intervention 2
Total steps	1,147,606	956,810
Total meters	687,930.13	568,152.29
Total calories	25,487.53	20,529.70
Total PAT Points	4,505.40	3,786.10

Between the two intervention programmes there is little difference in meters and calories. What is clear is this is a very active group of children.

Samples of individual activity levels

Student 10

Height – 1.6

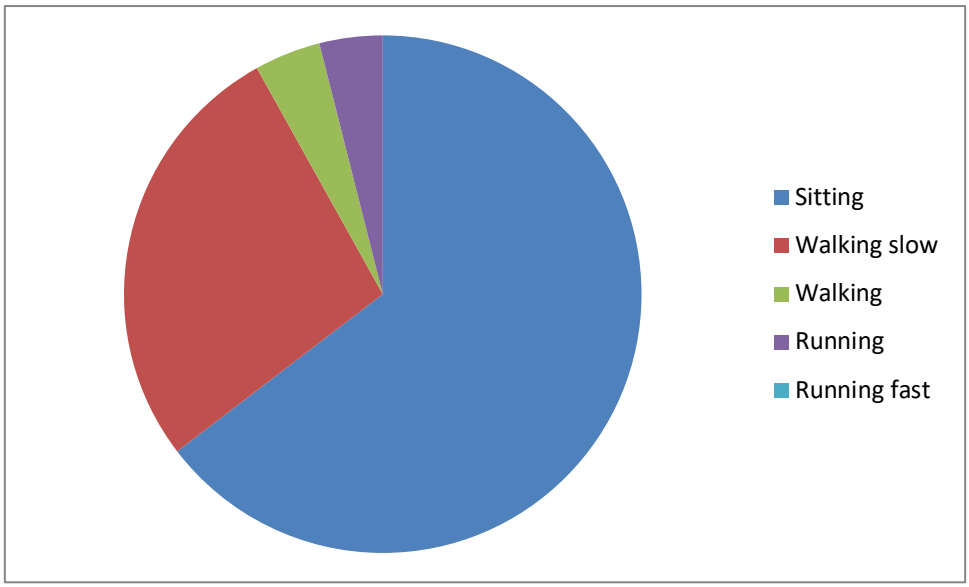
Weight – 50

DOB: 02/04/2008

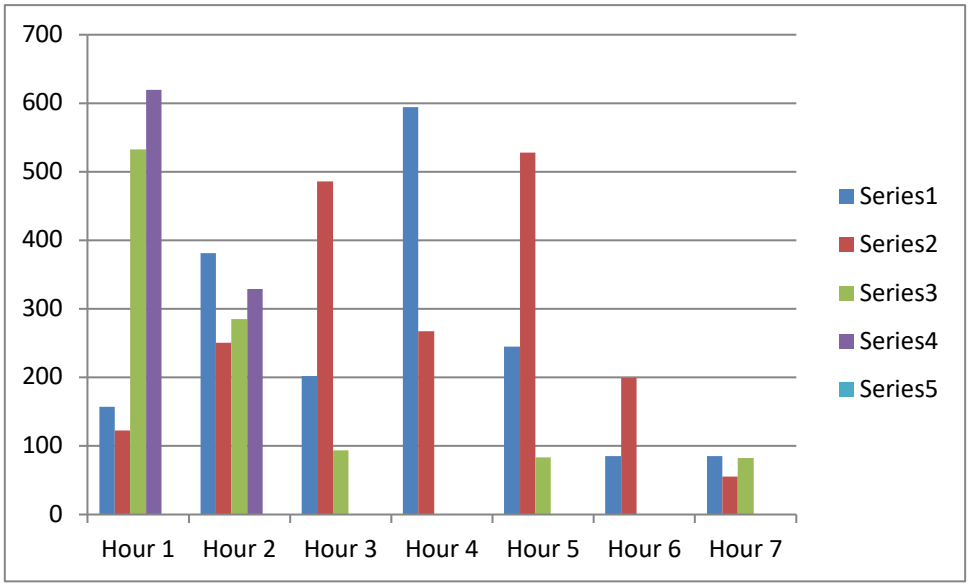
Gender: female

	Intervention 1	Intervention 2
Total steps	39,726	36,593
Total meters	26,250.94	24,180.65
Total calories	1,280.14	1,175.93
Total PAT Points	155.60	145.80
Activity level	Highly active	Active

Intensity Level Pie Chart



Intensity Day One in Hours



Blue – sitting

Red – walking slow

Green – walking

Purple – Running

Light blue – running fast

As you can see from the bar graph above which displays hourly intensity levels throughout the day, day one student 10 started very active and this gradually dropped off throughout the day to being inactive.

Student 15

Height – 1.47

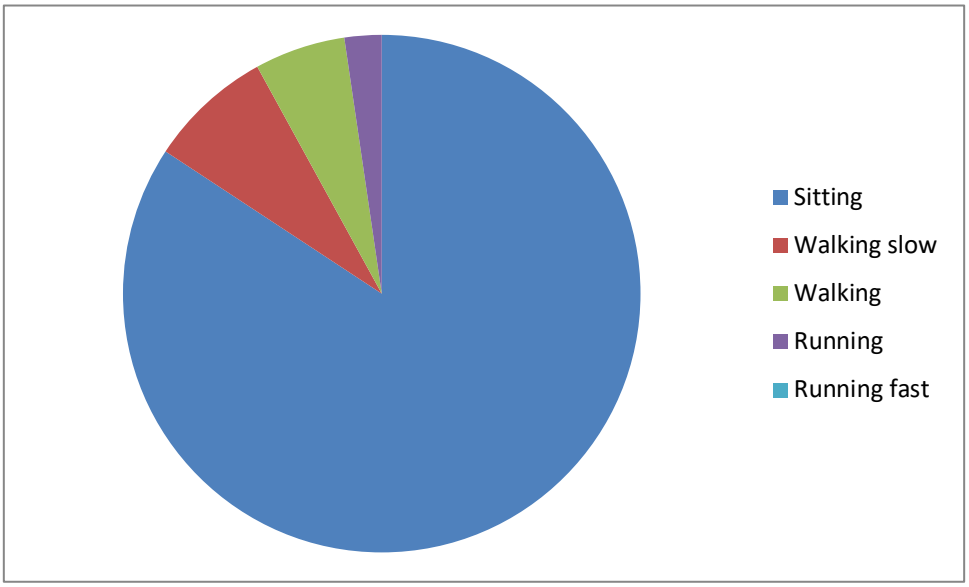
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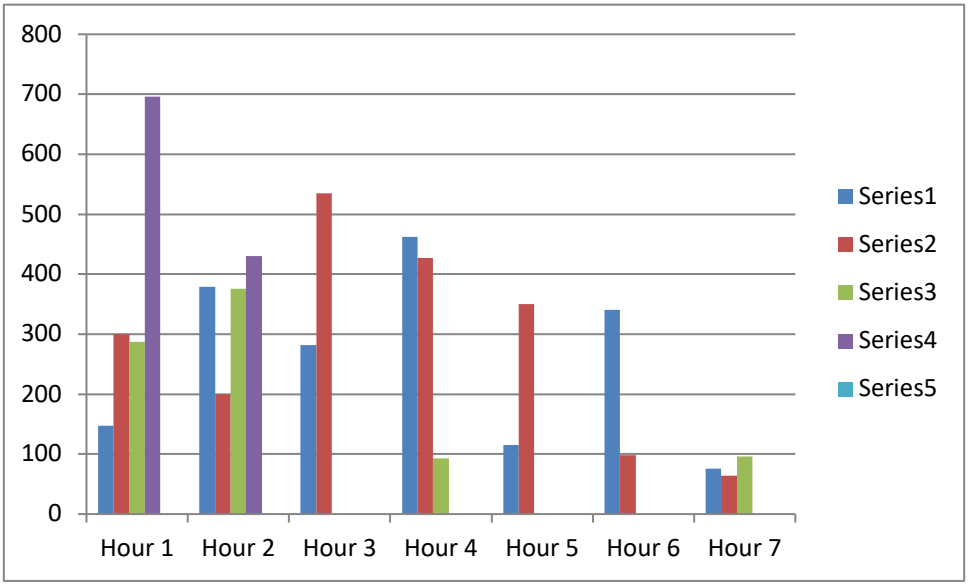
Gender: male

	Intervention 1	Intervention 2
Total steps	192,337	43,070
Total meters	116,769.72	26,148.23
Total calories	4,519.66	1,022.64
Total PAT Points	737.10	168.90
Activity level	Highly active	Active

Intensity Level Pie Chart



Intensity Day One in Hours



Blue – sitting

Red – walking slow

Green – walking

Purple – Running

Light blue – running fast

This bar graph displays an active student once again early morning activity on the first day which drops off to low activity in the afternoon.

Student 23

Height – 1.4

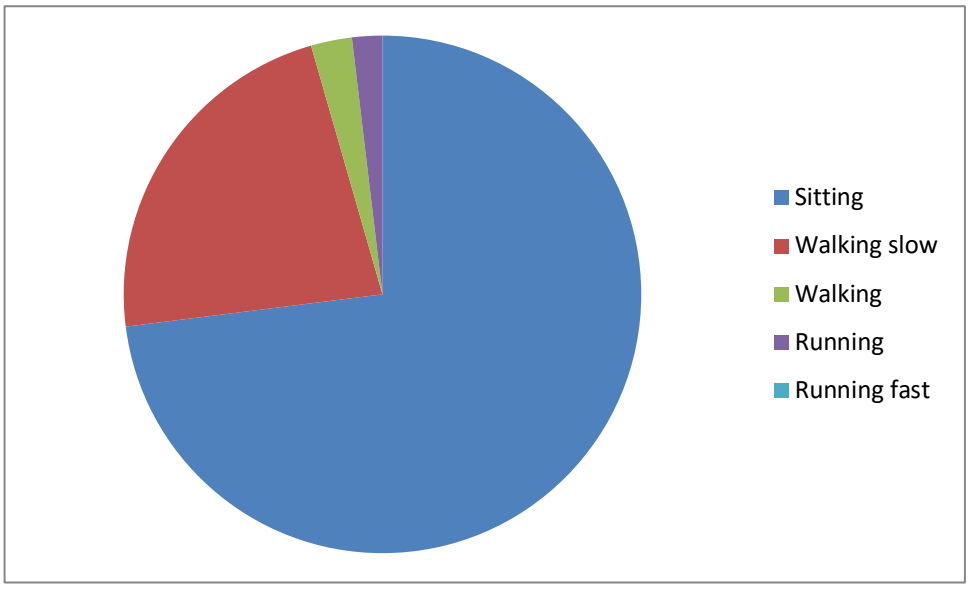
Weight – 36

DOB: 17/04/2008

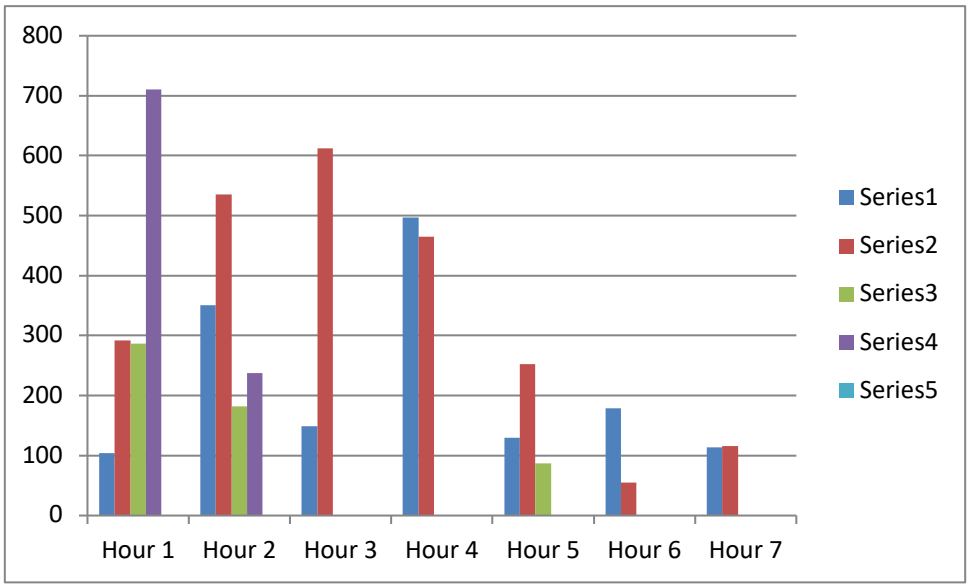
Gender: male

	Intervention 1	Intervention 2
Total steps	33,569	24,143
Total meters	19,409.60	13,959.48
Total calories	679.39	493.14
Total PAT Points	135.80	98.80
Activity level	Somewhat active	Sedentary

Intensity Level Pie Chart



Intensity Day One in Hours



Blue – sitting

Red – walking slow

Green – walking

Purple – Running

Light blue – running fast

This bar graph displays a student with low activity with lots of sitting and walking slow.

Time and Duration of Activity Levels

The data also provides hours, days and weeks of movement patterns. This provides important information on when activity occurs the most and the least, what days are more active than others and so on.

This is best shown on the live website.

Intervention Lunchtime Movement



Lunchtime movement	Time	Monday	Tuesday	Wednesday	Thursday	Friday
Walking	1 minute					
Running	1 minute					
Run fast	1 minute					
Walking slow	1 minute					
Running	1 minute					
Run fast	1 minute					
Walking	1 minute					
Running	1 minute					
Running fast	1 minute					
Walking	1 minute					
Walking slow	1 minute					
Run fast	1 minute					
Running	1 minute					
Run fast	1 minute					
Running	1 minute					
Total Minutes						

Additional Programmes for Learning and Moving



Pat Quiz

Lunchtime scores

Add together total minutes for Monday, Tuesday and Thursday lunchtime movement scores for those days =

A) 30 minutes
B) 45 minutes
C) 50 minutes
D) 60 minutes

Morning break scores

Add together total minutes for Monday, Wednesday, Thursday and Friday morning break movement scores for these days =

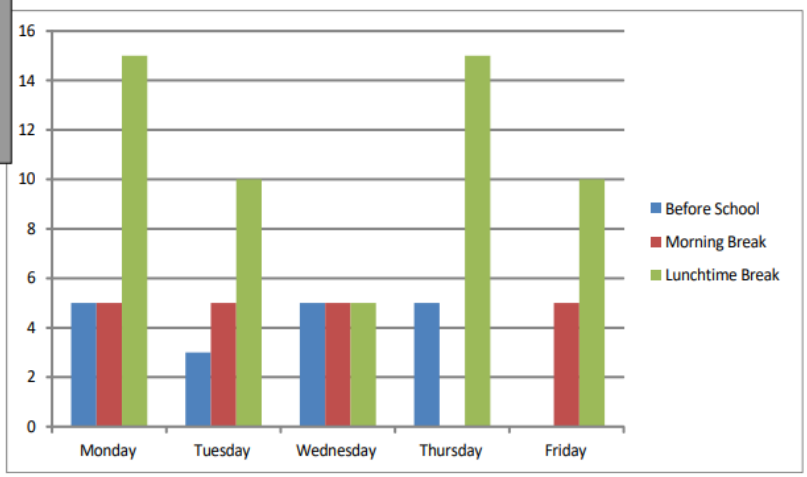
A) 30 minutes
B) 25 minutes
C) 15 minutes
D) 20 minutes

Lunchtime and morning scores

Add together total minutes for Tuesday and Thursday morning and lunchtime scores =

A) 35 minutes
B) 45 minutes
C) 40 minutes
D) 50 minutes

Additional Programmes for Learning and Moving



Quiz – Reading a column chart

1. How many minutes did PAT move on Monday lunchtime?
Answer……

2. On Wednesday altogether how many minutes did PAT move for the whole day?
Answer……..

3. At Lunchtime on Monday, lunchtime Tuesday and lunchtime Friday altogether how many minutes did PAT move?
Answer……

4. On Thursday before school and Friday morning break and Friday lunchtime how many minutes did PAT move?
Answer……

5. On Thursday morning break and before school on Friday how many minutes did PAT move?
Answer……

Conclusion

Things that went well

The data collected provides a very clear overview of the student's physical activity levels throughout both periods of intervention. It highlights the intensity, length of time spent in these intensity levels plus an overview of hourly, daily and weekly times spent either in physical activity or sitting.

Additionally the information on steps, meters and calories is also very powerful.

The students were very receptive and positive. They seemed very enthusiastic to be involved in the project.

The lead was Mr Dan Bennett who also demonstrated a good knowledge of physical activity and a commitment to the pilot project.

Things that could have gone better

The timing of the intervention near the end of the term wasn't ideal.

It is difficult to ascertain the effectiveness of the 3 weeks between the two evaluation periods, what was implemented and how effective it was.

What surprised us

The class in general were highly active which was very positive for the school and teacher involved.

The activity levels captured are much higher than other schools we have worked with in the past.

Lessons learned

The pilot project should be run over a longer period with a longer intervention period to ascertain the effectiveness of that intervention programme.

The PAT system clearly works very effectively and the data captured is simple but very descriptive and provides an in depth picture of the physical activity levels of all the children involved in the pilot project.

Alan Pearson, MD SAQ International LTD