



Flipped Learning in Physical Education

Improving Attainment and Progress through Flipped learning in Physical Education

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Overview

Project Aims

- To improve students' attainment within PE GCSE theory lessons
- to improve the quality of independent learning
- to create some exciting and engaging flipped resources that can be embedded into the GCSE theory planning for the department.

Rationale

- The project came about after the PE department highlighted an aspect of the GCSE course that could be enhanced further for our students when it came to the exam. After performing incredibly well practically, the theory side and in particular the examination preparation was not allowing our students to reach their full potential
- we are trying to challenge this issue in a variety of ways and believe that flipped learning enhances students' attainment and ability to gain the higher order thinking through innovative and independent flipped activities.

Project Outline

- Develop the pedagogy for Physical Education theory lessons by incorporating flipped learning, delivered through the class site. The class site is the learning platform that our students have access to on any device
- create innovative resources.

Flipped Learning in Physical Education

Impact

The following information outlines some of the benefits gained from adding flipped activities to the GCSE physical education group.

- Improvement in end of topic test results. The students took part in an end of topic test before flipped activities were introduced and another when they had been using them for a few weeks. The results for the second test were considerably better than the ones before. This could be due to the content of topic itself however I strongly believe the use of flipped activities had a positive role within the lesson.

	Target Grade	First Topic				Second Topic			
		1. 1. 4	ALS			1. 1. 3	KSE		
		Progress 8 + 1 Mark 48	%	G	P8	Mark 24	%	G	P8
Student 1	A	31	65	C	-1	20	83	A*	2
Student 2	A	34	71	B	0	19	79	A*	2
Student 3	A	21	44	U	-6	19	79	A*	2
Student 4	A	29	60	D	-2	19	79	A*	2
Student 5	A	18	38	U	-6	16	67	B	0
Student 6	A	35	73	B	-1	20	83	A*	2
Student 7	A	21	44	U	-6	Absent			
Student 8	A	25	52	F	-4	17	71	A	1
Student 9	A	22	46	G	-5	20	83	A*	2
Student 10	A	25	52	F	-4	17	71	A	1
Student 11	A	21	43	U	-6	12	50	E	-3
Student 12	A	29	60	D	-2	19	79	A*	2
Student 13	A	34	71	B	0	18	75	A*	2
Student 14	A*	32	67	C	-2	21	88	A*	1
Student 15	A*	20	42	U	-7	18	75	A*	1
Student 16	A*	32	67	C	-2	18	75	A*	1
Student 17	A*	28	58	E	-4	22	91	A*	1
Student 18	A*	32	67	C	-2	18	75	A*	1
Student 19	A*	31	65	C	-2	20	83	A*	1

- There was a clear difference between the engagement of the female members of the group to the male members of the group. The female students really engaged in the flipped activities which was evident from the results.
- Increased levels in engagement in class. Activities within the lessons were designed around the work completed away from class and examination questions and techniques.



Flipped Learning in Physical Education

- Enhanced and effective use of the class site. Students can see a value to the use of the class site, not only for the flipped activities but for information regarding the practical lessons, assessments and focus days.
- A greater understanding of examination techniques. Students have more time within lessons to complete exam questions, look at the mark scheme for each question and gain an understanding of various exam techniques.
- Improved differentiation activities within the lessons.

Students Comments

"I like the different activities that miss plans for us. They are very personal to what I need to learn."
Year 10 Student.

"I like being able to find all the information for our lessons and homework on the class site." Year 10 Student.

"I always look forward to my PE lesson." Year 10 Student.

Teacher Comments

"Flipped learning has changed the way I plan my lessons entirely. I can spend more time creating differentiated tasks that are focused on examination techniques and embedding a deeper understanding on the subject."

"Students engagement within the activities has been a dream. They really see a value in the activity that has been set and feel I care more about their learning by creating individualised activities."

"It's great to find or create different resources for each learning type."



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How to Flip

1. Understand what flipped learning is and how it is going to benefit you and the students. The students need to understand that they will be required to complete work prior to the start of a topic and that there will be no time to catch up with this information. There are many ways you can 'flip' a lesson, many of which can be found online.

An example of this can be found at the following link.

<http://www.ocr.org.uk/about-us/what-we-do/supporting-learning-through-technology/flipped-learning/>

2. Select a topic that you would like to try the flipped method with.
3. Produce a resource that you could use as a flipped activity. This can be completed with or without a learning platform.

With Learning Platform

Create a class site that all the students can access on a device of their choice.

Use Pinterest, Twitter or another site to gain ideas of what you can flip.

Use the class site to share the flipped activity with the class, giving a deadline for before your lesson.

Watch for the responses and plan the next lesson around what you see.

Without Learning Platform

Create a worksheet for the students to take home. This will involve a new topic that you have not covered before.

The students will complete the work away from the classroom.

Within the planning of the next lesson, create differentiated tasks depending on the different levels of engagement.

4. Try the flip!
5. Adjust and plan your lesson to the observations you made from the flipped activity. What the students know, what they need to develop, how you can differentiate the tasks, etc.
6. Evaluate. See how the students feel.
7. Repeat stages with another activity. You will develop an understanding of what flipped activities work best for different groups. For example, you may find that what works for one group may not necessarily work for another.



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Possible Resources required

- Laptop or workbook
- access to a learning platform (class site) with adequate drop box facilities
- access to the resources students will need to complete the work (textbooks, internet, podcast etc.)
- access to resources or examples of flipped activities to help you on your way!

Benefits of Flipped Learning

- More efficient use of teacher's time in the long run
- students own their learning
- more time to concentrate on deeper understanding and examination questions
- versatile and engaging way of learning
- inexpensive for schools.

Challenges of Flipped Learning

- Can take time to adjust to the pedagogy. The students may take two or three lessons to understand what they are required to do with the flipped activity
- students can take time to develop ownership of their own learning.

Additional resource

There is another toolkit on flipped learning in general, available at:

<http://www.ocr.org.uk/about-us/what-we-do/supporting-learning-through-technology/flipped-learning/>

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Appendix 1 An example

Context: Teaching year 10 GCSE physical education students the difference between aerobic and anaerobic fitness.

1. Use the announcement feature on the class site to post flipped activity

The screenshot shows the SharePoint interface for the 'Physical Education 10-Op2PE2' site. The left-hand navigation pane includes 'Home', 'Announcements', 'Calendar', 'Collaboration', 'Discussions', 'Links', 'Pictures', 'Staff Documents', 'Student Drop Box', 'Student Notes', 'Video', 'Wiki', and 'Site Contents'. The main content area is divided into 'Announcements' and 'Discussions'. In the 'Announcements' section, there is a 'new announcement or edit this list' button. In the 'Discussions' section, there is a 'new discussion' button. A large blue arrow on the right side of the page points from the 'Discussions' section down to the second screenshot.

2. Create a discussion regarding the subject on the class site.

The screenshot shows the 'Discussions' page for 'Aerobic or Anaerobic Fitness?'. The page title is 'Discussions > Aerobic or Anaerobic Fitness'. The discussion post is by Miss K SHOEBRIDGE and asks: 'What is the difference between aerobic and anaerobic fitness? What type of sports require each of these types of fitness? What type of training will each type of fitness require? Please ensure you do not repeat the sports that are already on the discussion board.' The post has 14 replies. The discussion content is visible at the bottom of the page.

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- Students to respond to the task and make sure they do not repeat the same example for each type of fitness.

Sites

the difference between aerobic is that aerobic fitness strengtens the heart and lungs, increasing the utilization of oxygen and anaerobic fitness is short duration at a high intensity. can last merely seconds tp up to 2 minuntes.

examples of aerobic fitness sports are; jogging, rowing, swimming and cycling.

examples of anaerobic fitness are sprinting 100m to 400m.

November 26, 2015 Reply Edit ...



The difference between Aerobic and Anaerobic fitness is that your Aerobic fitness is a reflection of your ability to take oxygen from the atmosphere and use it to produce energy for your muscles. Many factors influence your aerobic fitness, including your lung efficiency. Whereas Anaerobic fitness is defined as short duration, high intensity exercise lasting anywhere from a few seconds up to around two minutes.

Aerobic fitness sports: Cycling, running, aquarobics and boxing.

Anaerobic fitness sports: Sprinting, heavy weight training and high jump.

Aerobic fitness may use continuous training to improve the persons cardiovascular endurance.

Anaerobic fitness may utilize fartlek training or cross training to improve the persons stamina and coordination.

November 29, 2015 Reply Edit ...



Aerobic is a steady fitness which enables the heart to supply enough oxygen to the muscles. It improves a persons cardiovascular endurance, therefore an example of this fitness is rowing.

Whereas anaerobic is carried out in short and fast exercises when the heart cannot supply enough oxygen to the muscles. It improves a persons ability to work their muscles without oxygen when lactic acid is produced. An example of a sport for this is sprinting

In general the training that is required in both of these exercises is fartlek training as it involves varying the intensity and speed in which you do something or how long you do it for.

November 29, 2015 Reply Edit ...

- Teachers plan a differentiated task that students will use within the lesson that requires the students to understand what aerobic and anaerobic fitness is. This enables the teacher to spend more time on deeper understanding.

SHIRELAND COLLEGIATE ACADEMY
Comparing two types of exercise session

Case Study
Jack & Tom are brothers and both do athletics. Jack is a very good 100m Sprinter & Tom runs the 1500 metres. They both use interval training to improve their performance but their sessions are different. This is because they apply the principles of specificity and individual needs, the FITT principle and overload to their own events. This means that they create a session that specifically develops the areas they need to improve if they are to succeed.
After a warm-up suitable for the activity Jack and Tom would complete these training sessions

Session A: Jack's Training for a 100m sprint
Jack works with a partner, so they can record each other's results. Using a 'rolling start', i.e. from about 20 yards before the start line, Jack gradually builds up speed so that when he crosses the start line, he is at full speed. He then:
1. Runs 60 metres at 90% effort - then records his pulse rate,
2. Walks or slow jogs back to the start in 2 minutes. Just before going again, he records his heart rate.
3. Repeats 1 and 2 five more times.
4. After the 6th repetition he takes his heart rate again.
5. While recovering he records his heart rate every minute for 20 minutes.
Jack's partner asks him to rate his effort on a scale of 6 to 20. A score of 6 means he did not try. A score of 20 is his maximum effort. Jack's partner then trains and Jack records.
Both athletes perform a suitable cool down.

Session B: Tom's Training for 1500m run
Tom, like his brother, works with a partner, so they can record each other's results. Before starting the warm up Tom and his partner record their heart rates while at rest. Sometimes they also take their blood pressure.
After warming up appropriately, Tom begins his interval training session from a standing start on a 400m track. He then:
1. Runs for 2 minutes at a good pace, about 75% effort - his partner records his heart rate and notes the distance he ran.
2. Walks back slowly to the start to allow 3 minutes recovery time. His heart rate is once more recorded before he runs again.
3. Repeats 1 and 2 a further 6 times.
4. After the fourth repetition, his heart rate is recorded again.
5. While recovering, Tom records his heart rate every minute for 20 minutes.
Tom's partner asks him to rate his effort on a scale of 6 to 20. A score of 6 means he did not try. A score of 20 is his maximum effort.
Tom's partner then completes the same session and Tom records his heart rates.
Both athletes then perform a suitable cool down. To finish they record their heart rate and sometimes their blood pressure.

After reading the two types of training sessions, answer the following questions:
1. What are the comparisons between the two training sessions?
2. What are the differences between the two training sessions?
3. Which session is working aerobically and how do you know?
4. What component of fitness is Tom training?