Petroc: Flipped learning through the use of iPads

Summary

The Health & Fitness department at Petroc’s Mid Devon campus have successfully introduced a flipped learning experience for their students through the use of iPad devices. Using the iPad motion video detection apps, students are able to have their sporting technique analysed in fine detail. This is proving to be a much more powerful learning system for retaining knowledge and enhancing the students’ abilities.

About Petroc

As one of the South West’s leading colleges, Petroc drives forward educational success in further and higher education and strives to raise the aspirations, knowledge and skills of individuals, communities and businesses in Devon and beyond.

Petroc’s main campuses are in Barnstaple and Tiverton and the college offers an exceptional range of courses and qualifications, from A Levels to apprenticeships and vocational training to degree programmes.

Year after year students produce exceptional, record-breaking results and progress onto the country’s leading universities, further training or employment.

The challenge

Following a staff development day that introduced the concept of Flipped Learning, Jane Tomlinson, Head of Learning Resources and ILT was keen to find ways in which their E-Learning Coordinators team could promote this by supporting lecturers in the development of teaching and learning resources.

As part of this process, iPad devices were made available via the E-Learning Coordinator team. Mark Newman, Fitness Instructor was provided with one of the iPad’s for the purpose of using it to help facilitate the flipped learning concept. Mark was then able to seek advice and support from E-Learning Coordinator, Sarah Vincent; who provided one of the main apps that Mark uses extensively, called EduCreations.

Perhaps the biggest challenge for this project was in terms of introducing new teaching concepts and changing the dynamics of taught lessons. Prior to the introduction of the flipped learning and iPad’s, Mark would be using more traditional, instructional methods.

To go from teaching anatomy and physiology from text books to interactive quizzes on the iPad was initially a challenge in terms of engaging with mature students, who had no
experience of using tablet devices.

**The activity**

Prior to the college development day, the E-Learning Coordinators team had been developing a bank of educational iPad apps as part of their research on the use of new and emerging technologies to enhance the students’ learning experience. Their research demonstrated that the iPad would be an ideal tool to use in the creation of Flipped Learning resources as it enabled the lecturer to create engaging learning material that students could easily access outside of the classroom.

The Flipped Learning approach to Teaching and Learning changes the dynamics of the classroom by enabling the lecturer to move away from being primarily a disseminator of knowledge to, instead, becoming a facilitator of learning. This approach is facilitated by the use of online technology and via smart devices. Students can review video content, for which they are assigned tasks that will be discussed in the classroom, where the teacher can offer more personalised and guided support that is more interactive.

Sarah helped Mark by introducing to him an app called EduCreations, which is for creating annotated video screencasts and this has become one of the most used apps within his lessons.
During a period of trialling and development, Mark tried many apps; choosing to only use a select number of the most useful apps so that he didn't swamp his students with information.

The main apps that he used included:

- EduCreations
- Coach My Video
- Skeletal Anatomy 3D

During each sports session, Mark demonstrates a specific activity, such as a type of stretching exercise, which often involves using weights. He then asks the students to practice this exercise and then records them using the Coach My Video app on the iPad. The Coach My Video app is then used to analyse the motion, or movement of the students. This can be slowed down frame by frame if necessary. One of the great features of Coach My Video, is that videos can be sequenced and positioned side by side. This means that two videos can be synced together and contrasted in fine detail.

![Screenshot showing a student's annotated serve using Coach My Video](image)

To cover the technical aspects of anatomy and physiology, Mark uses both the Skeletal Anatomy 3D app and Educreations to reinforce his students’ learning. The Skeletal Anatomy 3D app covers the basic structure of the human body, which Mark can project from his iPad onto the interactive whiteboard. Skeletal Anatomy 3D also has quizzes, which Mark can use with the students to test their knowledge.
EduCreations has been one of the main apps that Mark uses because it enables the students to watch videos from the classroom activities online. Mark uses Educreations to annotate images of sports injuries and make recordings of his lessons. All the content is then uploaded to EduCreations and made available to the students. Mark can use the videos to ask questions and test the knowledge of his students, if they get the questions wrong; they can go through the videos again in their own time.

The outcomes

Before the iPads were introduced, students would be coached directly and told how to perform a stroke or action, which invariably involved the student trying to replicate motion that they see performed by the coach. Not being able to directly see their own body motion meant it was a much longer process to correct bad technique. Without doubt the advantages of being able to see your own body in slow motion are massive in comparison.

With the iPads, students are much more motivated in the classroom. They have access to powerful and interactive technology that is enabling them to take their sporting technique to a higher level.

In terms of a flipped environment students are;

- Better informed
- Able to continue their studies in their own time
- Provided with faster feedback
- Better peer supported
- Given more detailed and interactive resources
- Able to repeat any video lesson to reinforce their learning
Through the Coach My Video app the students have instantly been able to analyse their own technique by comparing and contrasting their style with the correctly performed exercise. This has been a fantastic visual aid and enabled them to learn much more quickly how to correct any bad habits.

“My technique improved immediately once I felt as if my back wasn’t straight enough and through looking on the iPad it was obvious and straightaway I was able to gain confidence and advice from the lecturer to help me.” - Petroc Fitness student.

In terms of EduCreations, this dual app and web-based software has enabled the students to create their own content to demonstrate anatomy and physiology questions provided by Mark. They can really consolidate their learning at the touch of a button and revisiting video-capture lesson resources has been a real time saver and something that the students can refer back to at any time. Mark can additionally monitor whether or not his students have been completing their homework and logging into the site.

“Students seem to be getting through the material a lot quicker and understanding it a lot more, so it’s been really powerful” – Mark Newman, Fitness Instructor

The Skeletal Anatomy 3D app has enabled the students to not only visually explore the anatomy of the human body, but also as a revision tool. Mark regularly activates the quiz feature in the program to instantly test his students’ knowledge. Because it’s instant, students are much more engaged in comparison to using a text book. They can test their knowledge again and again in their own time and it’s a valuable tool for exam revision.

The impact

Whilst Petroc has introduced a flipped learning environment relatively recently, it is clear that even in such a short space of time students are highly motivated. When the students were asked what they liked about the iPads and the apps, some of the responses were very positive;

“Absolutely, it embeds the learning much more than a text book because it’s another learning style and you’ve got visual feedback.”

“My technique improved immediately once I felt as if my back wasn’t straight enough and through looking on the iPad it was obvious and straightaway I was able to gain confidence and advice from the lecturer to help me.”

“Putting the right technique next to mine at the same time was very powerful.”

It’s not just the students that are reaping the benefits of using iPads, Mark has also found that as a teacher studying a Cert Ed course, he’s been able to apply many innovative techniques and using technology has helped him to make his lessons much more versatile and engaging.

“It’s so versatile that I can see me applying things as I learn them, so that’s been really useful.” - Mark Newman, Fitness Instructor

Mark Newman, Fitness Instructor
“There are a variety of apps that enable them to do a lot of different things, such as video. And they can make them themselves and create things, I think that it makes them more motivated and involved in the lessons” - Sarah Vincent, E-Learning Coordinator

Mark has been inspired and completely immersed in his lectures because he now has all the tools to make his lessons engaging and involved. Students can take charge of their own learning and not feel like they are having to just sit and listen to a technical lecture. The activities are much more interactive and this is really keeping the interest and enjoyment for the students.

“It really motivates me to produce these learning materials and if I’m motivated then it’s easier to sell the topic to them and make the students motivated as well – so I think that’s been a really, really powerful part of it.” - Mark Newman, Fitness Instructor

Useful links

- Petroc College
- Coach My Video
- Skeletal Anatomy 3D
- EduCreations
- Jisc RSC South West website

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