School:	Ennis Community College
Country:	Ireland

Case-studies:

Plickers, QR-codes and Flipped Classroom (high tech)

Introduction

Ennis Community College is a large urban based secondary school located in Ennis, County Clare providing comprehensive education in academic and vocational subjects for both boys and girls. The college currently caters for students from 28 different nationalities and ethnic groups. The College is classed as a Band 1 DEIS (Delivering Equality of Opportunity in Schools) school and is therefore seen as catering for students from disadvantaged backgrounds.

The college offers a broad-based and varied curriculum which affords students the opportunity to develop their unique talents and skills across a range of programmes. This is complemented by the wide range of extra-curricular activities on offer and the highly developed Resource Department and Student Support Service which cater for students who have special educational needs. Ennis Community College has a long and proud history of providing an inclusive and co-educational experience for its students.

Case-study 1: Plickers

Context:

At a national level all post primary schools in Ireland are required to "self-evaluate" themselves on an annual basis. This is normally carried out towards the end of the school year and normally will involve gathering data through surveys, meetings and other forms of receiving feedback. A "school improvement plan" is then used to focus on tackling areas of concern raised by the evaluation. One of our key areas is a focus on student assessment.

Nationally there are many formal and informal methods used in student assessment that usually involve some form of grade or written feedback being given to the student. We felt that if we could use ICT to focus more on student assessment in the everyday lesson, it would provide the teacher with an effective way to measure student progress on a daily basis. Plickers enables us to meet this target.

An issue that presents in the classroom daily is the same students continually answering questions. It is impossible for teachers to question all students every day. However, through the use of Plickers every student has the opportunity to answer and the teacher can view each answer in moments. For example:

1. **Start of class:** - 3 Question quiz. Quick way to assess if students watched the flipped classroom video – determine class groupings for lesson

2. **During class:** - to gauge if students are on track with the lesson and to reinforce knowledge & recap the learning.

3. **End of class:** AFL - Plickers can be used as a self-assessment tool. Plickers can be used instead of exit cards. Ask a question and quickly gauge if students understood the lesson.

Plickers also motivates students when privacy is turned off. They can compare their answers with others in the class and they can see where they are against the class curve.

Exploratory learning typical in a flipped classroom is where students are given the opportunity to generate their own questions. Students can generate these questions on Plickers to deepen their understanding and mastery of the topic being covered.

Implementation of the case-study:

Core team of four teachers has been set up and uses Plickers regularly in their classroom. The following outlines how this is done:
1. Teachers can set up a quiz with up to 4 multiple-choice answers a, b, c or d.
2. The question or media image is displayed on the white board.
3. The student holds up a QR-card with the correct answer positioned at the top.
4. The teacher can quickly scan each card with an app on her phone.
5. A graph of all the answers is immediately displayed on the whiteboard.
6. Teacher has the option of displaying/hiding individual student answers

Core team has used Plickers as a way of gathering information from staff. Introducing the programme to staff familiarises them with using the app instantly and encourages the use of it within the college.
Core team divided up the staff into 3 smaller groups. The staff were then trained how to:

- Set up a Plickers account.
- Set up a class group, a set of questions.
- Download the App required for scanning.

The core team is currently monitoring the use of Plickers in classes.

Aims and methods of the case-study:
- To develop a core team of teachers to set up and use Plickers regularly in their classroom.
- To develop the use of ICT amongst all teachers in Ennis Community College by introducing simple but effective methods in order to assess students and encourage learning. This was done by placing printed QR-codes in every classroom in the school with a guided worksheet.
- To provide training on Plickers to the whole school by providing a mandatory workshop after school.
- To use Plickers inside and outside the classroom (Staff meetings)
- To discover how Plickers can be used as an effective tool in the assessment of student learning and the self- assessment of teachers by each member of the core team recording monthly data from questioning students with Plickers.

Findings from the case-study:

- There were a number of issues around the use of Internet Data. Teachers in the school expressed concern about using the app and using their own data to facilitate it.
- Wifi is not readily available in our school for teachers. As a result, the use of Plickers is often determined by the Data usage plan that the teacher has.
- Overall, teachers found Plickers to be an incredibly positive and useful tool in the classroom to question students as well as getting them to take responsibility for their own learning.
- Plickers does not require students to have any electronic device therefore using it within the classroom is simple.
- Plickers provided a detailed history of each question and generates monthly reports for each class. Teachers within Ennis Community College found this to be an effective tool when assessing students.
- The reports generated by Plickers provide all students with an overall percentage for the month as well as percentages for each question. This also links in with our numeracy initiative. The reports provide a breakdown of questions that were answered correctly and incorrectly by each student. PDF's can be generated for each student that provides them with a percentage for the month as well as the class average. It highlights the commonly missed questions. Teachers of Ennis Community College found this incredibly useful as it allowed the teacher to self-assess by becoming aware of the topics that need to be revised. Students also became aware of their strengths and weaknesses around various different topics.
- Plickers caters for visual and kinaesthetic learners in the classroom.
- Students were very receptive to Plickers. In particular students enjoyed the competitive element and felt motivated and encouraged to answer questions. The privacy tool further encouraged students to answer willingly without feeling anxious about answering incorrectly.
- All students are assessed instantly, which is more effective than the traditional hand raising form of questioning.
- We found that matt laminate works best when covering the QR-codes as normal laminate caused a reflection and the answers could not be read properly by the device.
- Plickers is now used in staff meetings as a method to vote on particular issues that arise. It's an easy and effective way to continue to use the App and continually introduce it to staff. We found that staff were more inclined to use the App having practiced themselves in staff meetings.

Conclusions:

- The use of Plickers has been incredibly successful in Ennis Community College. It is both student and teacher friendly due to its simplicity.
- Teachers felt it worked well in order to assess both students and themselves. Plickers provided useful data to monitor student assessment on a daily and monthly basis. As a result of this, it became an effective tool for teacher planning, and tailoring written assessments to the needs of the students.
- Although time consuming to prepare the list of questions for numerous topics it was felt that it was worthwhile and beneficial. Teachers that embraced Plickers and gave it the extra time felt it worked well in the long term as the work was done and could be recycled.
- Plickers provided a positive atmosphere to the classroom and student learning as students looked forward to it and often requested it at the beginning or end of class to test their knowledge.
- Enthusiastic responses from students encouraged teachers to use it more frequently.
- By continually using Plickers in staff meetings, it acts as a reminder to staff of the simplicity and effectiveness of the tool.

Our school policy does not allow students to use their personal devices in school so Plickers works incredibly well in respect to this policy.

Case-study 2: QR-CODES

Context:

In the modern-day classroom, it is an extremely rare that a post-primary student does not own or have access to a personal digital device. In addition, it is clear that most mobile phones owned by students are smart devices that are capable of evolving and assisting students' education both in and outside the classroom environment. However, the majority of Irish post-primary schools have policies in place that do not allow the use of such devices during the school day. In our school, Ennis Community College, we allow students to use their personnel digital devices during set times as we see them as essential to assisting the students learning in the classroom. In particular, we hope to encourage teachers and students to utilize these smart devices in an educational manner through the process of QR-code scanning.
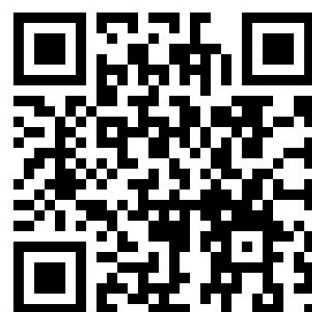
ramonamccarthy.com/qrcard

A QR-code is in effect a barcode that can be scanned using your phones camera. We use them in Ennis Community College to open URL's with links to videos, quizzes, demonstrations etc.

QR-codes can be used as an AFL (Assessment for learning) tool where students can self-assess their own work and in effect can become self-directed and independent learners who are capable of taking responsibility for their own learning as they engage in discovery learning. In our school, the aim is for teachers to print QR-codes and place them around their classrooms to assist students learning. For example, if students are wondering how to complete a project that they are doing, they can simply scan a QR-code in the classroom and watch a short video of how it's done. Students will then have the ability to check the correct solution to a question/project against their own.

Implementation of the case-study:
The following is a list of steps that we completed in the implementation of QR-codes in Ennis Community College:

1. The core team met to discuss the implementation of QR-codes and planned for the success of the project.

2. The core team worked on the creation of QR-codes and linked them to associated posters around the school building.

3. The core team gave a demonstration at a staff meeting on how to use QR-codes and encouraged each individual staff member to download the QR-code scanner on their phone.

4. We then showed the staff how to create QR-codes using the QR-code generator website and gave them some useful QR-codes to use such as which showed them links to Khan Academy, Study Clix and Youtube. Once teachers knew how to generate QR-codes they could then tailor them to their own individual classroom and teaching. In addition, as many subject areas are being covered, one member of each subject department was trained to create posters for their subject and in effect this person became an "expert" for their subject area.

5. We then encouraged teachers to create a website and to create videos which displayed students doing work also. Teachers that already had websites were able to use QR-codes to provide links to videos that were uploaded to their website. The core team also assisted with this.

6. We also encouraged the use of QR-codes as a means of links to videos for use in the flipped classroom.

7. QR-codes were placed around the school to assist not only with learning within the classroom but also with students own personal development. QR-code posters were made to assist with student literacy and numeracy skills and QR-codes posters were also made to highlight and raise awareness on issues such as Bullying, Cyber Bullying, Racism, Healthy Eating and to assist with student's study skills.

8. We then gave teachers time to become familiar with QR-codes and to utilize them in their teaching.

9. Once teachers were familiar with the use of QR-codes, we reviewed the process and gave a survey to teachers and students on QR-codes and got feedback on the implementation of it within the school.

Aims and methods of the case-study:

The following are the aims and objectives which we hope to achieve in implementing QR-codes in Ennis Community College:

1. To develop a core team of teachers to setup and use QR-codes regularly both in and outside the classroom environment.

2. To provide training through the means of a workshop for all staff members in the school on the use of QR-codes and to encourage all staff to utilize QR-codes as part of their daily teaching.

3. To assist students learning in the classroom and in particular, to assist students who may be struggling with a particular topic or concept and to allow them to see how QR-codes can benefit and aide their understanding of topics which they may find challenging.

4. To allow students to become self-directed and independent learners by enabling them to take responsibility for their own learning as they have the ability to scan the QR-codes and learn from the videos and worksheets which accompany the QR-code.

5. To develop student's literacy and numeracy skills by engaging with the literacy and numeracy team in the use of QR-codes. For example, creating and placing QR-codes around the school which aide students in understanding how to read the 12-hour clock.

6. To assist and benefit students learning outside the classroom by creating and placing QR-code posters around the school which will help students leaning on areas such as study skills and raise awareness on issues such as mental health, healthy eating and racism.

7. To promote Ennis Community College by placing QR-codes in local newspapers to advertise events, open nights and provide links and videos in these newspapers to showcase student success and extra-curricular achievements.

8. To also promote and showcase Ennis Community College by placing two QR-codes on our official headed paper that we send out to parents and other people associated with the school. One QR-code will provide a welcome message to parents from the principal and the other will be a link to our school website.

9. To involve parents and to increase parents knowledge on QR-codes through linking with the Home School Liaison Officer in Ennis Community College.

Findings from the case-study:

The following details the advantages and disadvantages/challenges that the core team found from utilising QR-codes within Ennis Community College:

Advantages:

- QR-codes allowed students to become self-directed and independent learners who were able to learn for themselves by scanning a QR-code which brought them to a video, worksheet or website. For example, a student who is struggling with a question on Algebra in Maths class could scan a QR-code which would bring them to a video on the Khan Academy website. The student then had the ability to watch the video and find the solution for themselves without the aid of the teacher. In addition, we found that students were very eager to engage with discovery learning through utilizing their mobile devices. In essence, students were happy to be learning in an innovative manner that was different from the normal "chalk and talk" which is prevalent in many classrooms around the world.

- Furthermore, we discovered that the use of QR-codes in conjunction with the Khan Academy website and other websites similar to this helped to cater for the wide range of abilities and needs within the modern-day classroom and in effect helped to differentiate work for the different types of learners in the classroom. For example, with the video on Algebra outlined above, the well able student can fast forward through the video to find the piece which they found particularly difficult and only has to watch a snippet of the video. However, we found that QR-codes were particular useful for weaker students as they had the ability to watch the whole video and their learning improved significantly as a result. The use of QR-codes to differentiate in this manner ensures students can learn at their own pace and reduces the risk of a student falling behind.

- The core team also determined that students do not necessarily need to have a large data plan on their phone as what we found many students to be doing was to scan the QR-code in school and to wait until they go home and when they had Wi-Fi to open the link/video. The benefit of QR-codes is once they are scanned they are saved in your phones memory until you have an Internet connection to open the links.

- We found that placing the QR-codes around the school to raise awareness on everyday issues worked very well as students could scan these codes at break or lunch time to learn about issues such as mental health, healthy eating, study skills and other issues. In particular, the use of QR-codes tied in well with mental health week and friendship week within our school as students had the opportunity to learn outside of the regular Social Personal and Health Education (SPHE) Class.

- We learned that providing a demonstration/workshop on QR-codes at a staff meeting and encouraging teachers to download the QR-code scanner worked well as teachers who initially thought that the use of QR-codes was difficult and time consuming could see how easy it easy to create a QR-code and how quickly students can scan these to bring them directly to a link. In particular, the teachers were interested and engaged when they could see how students could scan the QR-codes and watch the videos at home.

- In addition, when we trained and decided to focus on one member of each subject department to create laminated posters with QR-code links displayed on them for the rest of their departments, these members then had the ability to become "the experts" in the use of QR-codes and were then able to roll out and provide assistance to the rest of their subject department under the guidance of the core team.

- We found QR-codes to be particular helpful in the areas of Literacy and Numeracy and the feedback in particular from the numeracy team was very positive as the numeracy team conveyed how the use of QR-codes to provide a link to a video which helped students to tell the time using the 12-hour clock was very beneficial. The numeracy team had done a survey with all 1st year students which found that many were unable to read the time from the 12-hour clock which then prompted our core team to link with them to create laminated posters and to place these in classrooms and around the school to assist students. The numeracy team described how this allowed students to learn how to tell the time by themselves and gave students great confidence, as they were able to scan these QR-codes and learn how to tell the time in the privacy of their own home. Once QR-codes were seen to be beneficial in assisting students to tell the time, the numeracy team then decided to create videos and accompanying QR-codes to assist students knowledge of fractions and percentages. In particular, posters were made and placed in classrooms and around the school to assist students' knowledge of converting fractions to percentages and getting the percentage of a number.

- The core team found that QR-codes were particularly beneficial in the promotion/PR of the school. In particular, placing QR-codes in local newspapers allowed us to advertise our school in a cheap and innovative manner. For example, we had the ability to advertise our school open night and other events running in the school as people reading the newspaper could scan the QR-code which would bring them to the school website to give them additional information on events such as the open night. In addition, QR-codes allowed our school to showcase student success such as success in extra-curricular and academic activities. Feedback from parents on this was quite positive as the QR-codes placed in the local newspapers and leaflets allowed parents to learn more about what was happening in our school.

- In addition, as our school has recently got a new principal we decided to incorporate the QR-codes on the headed paper which is sent when a letter is sent from Ennis Community College. Two QR-codes were placed on the headed paper. One provided a link to our school website while the other was a welcome message from our new principal which allowed parents and other people connected to the school to see who our new principal was and to learn what his direction is for Ennis Community College.

- We found that linking in with the Home School Liaison Officer (HSLO) in Ennis Community College was particular beneficial to extending and furthering the use of QR-codes within our school. The Home school Liaison Officer was able to provide information and training for parents whilst on home visits and when meeting with parents. This allowed parents to fully understand what QR-codes were and allowed them to take an interest in their own child's learning whilst also learning a new ICT skill themselves.

- Overall, teachers found the use of QR-codes to be particular beneficial and responded well to the use of them in the questionnaire that we gave them at a staff meeting. They saw QR-codes as "helpful," "easy to use," and they particularly liked "how simple links could be provided to websites to such as Khan Academy and YouTube to supplement students learning."

- In addition, it was clear that students also fully embraced the use of QR-codes within the school as a survey carried out by a number of students also provided positive feedback on the use of QR-codes as students explained how they were able to "learn for themselves," "able to watch videos and not have to ask the teacher for help," and were "motivated to learn because they got to use their phone."

Disadvantages / Challenges:

- At this present moment, there are problems around the usage of mobile phone devices in our school. However, it is our aim that we can update our policy on this in the future to encourage the use of mobile phone devices to aide students learning in the classroom.

- In the beginning of the roll out of QR-codes, it was difficult to get teachers to buy into the use of QR-codes but once we had trained a person in each subject department and provided training at the staff meetings, this helped greatly in encouraging the use of QR-codes in the school.

- However, there was still a resistance to this new technology as one teacher responded in the survey as to how he/she "had no interest in using QR-codes." This again raises another issue, as the majority of teachers were very positive in the use of QR-codes, however there were still some who did not want to engage in the programme. We envisage that this is not only a problem unique to our school as this will be a problem we can see for many different schools around the world as some teachers are very reluctant to change.

- As our school caters for a wide range of learners including some students come very difficult and disadvantaged backgrounds, it was noted in one students survey that "they could not use the codes because they didn't have Wi-Fi at home." At this present moment, our school is looking into getting Wi-Fi on the school grounds. As well as this, the Home School Liaison Officer is also carrying out a survey with parents to see how many have the use of Wi-Fi facilities at home.

Conclusions:
We, in Ennis Community College, have so far found the use of QR-codes to be a hugely beneficial experience and see QR-codes as an ICT and educational technique which has huge potential to be further improved on and to be

expanded worldwide. The use of QR-codes as discussed above is easy and cheap to use and requires very little investment. It can also be rolled out across all subject areas as it has the ability to assist the student in Maths who is struggling with an algebra question to the student in Metalwork who is struggling with how to complete a certain piece for their project.

One of the main benefits that we found with QR-codes is that there are many different ways to utilize these codes. For example, teachers can generate codes which link to video demonstrations, to their own website where they may have worksheets or notes or to other websites such as Khan Academy and YouTube. In addition, QR-codes have proven to be useful in furthering and in promoting our school and there is great potential to further expand upon this.

However, the most important aspect that we have found from the use of QR-codes to date is how beneficial they are for students learning. As discussed above, students can become independent learners and when QR-codes are used in conjunction with video demonstrations students have the ability to differentiate for themselves as they can decide if they need to watch the whole video or just a snippet of it. Furthermore, we found QR-codes to be extremely advantageous in raising awareness on certain issues such as racism and study skills and it is envisaged that next year we will utilize QR-codes in conjunction with Maths Week, Science Week and other designated events which are ran throughout the school year.

In the future, we as a core team and a school aim to build on the success and enthusiasm for QR-codes to date by using them to promote our positive behaviour initiative in the school, to further expand on the PR of the school by showcasing more student activities and student success and by continuing to provide training and continual professional development for the staff within our school as we see QR-codes becoming an integral part of teaching and learning in Ennis Community College.

Case-study 3: The Flipped Classroom

Context:
As outlined in our state of the art report, many attempts have been made to measure the use of ICT in Irish secondary schools.

The Schools IT 2000 Initiative report published in 2001 revealed a high level of satisfaction generally but also raised 3 areas of concern
1. The need for more teacher training.
2. The need for more funding.
3. The need for more teacher support.

Following this report, a 3-year strategic plan was set up to address the following:
1. Expansion of ICT capital provision.
2. Increased access to and the use of Internet technologies.
3. Further integrate ICT in teaching and learning.
4. Enhance professional development opportunities for teachers.

At Ennis Community College we feel that our main focus should be to find out the best methods to enhance the "student learning experience" through the use of ICT in subject pedagogy.
This involves two approaches which run in parallel:

- Finding methods to utilize ICT in subject pedagogy.
- To convince and train staff to use such methods.

We felt that trying to get teachers to deviate from standard methods of teaching would be our biggest obstacle, so we decided to test different ways to include ICT in a Flipped classroom approach. The flipped classroom has

been in use in many classrooms and it is not uncommon to many teachers.

At a national level there has been a lot of focus on training staff to use ICT equipment. Many courses are available in regional education training centres however; the focus is on "how" to use, not "why".

Aims and methods of the case-study:
The following are the aims and objectives which we hope to achieve in implementing the Flipped Classroom in Ennis Community College:

- To develop a core team of teachers to embrace video creation and editing over an academic year.
- It is intended that the core team will train one teacher from each subject department to:
    - Create and edit video clips to be utilized within the department.
    - Upload these videos to our school YouTube channel.
    - Create QR code links for the videos and make them accessible for students to scan. Students can then access the videos when Wi-Fi is available to them.
- To create flipped classroom training videos highlighting the advantages of teaching and learning through the use of Flipped Classroom.
- To provide whole school training workshops and guided worksheets on the use of SnagIt, Camtasia and Smoothdraw.
- To provide further training workshops on using devices such as a mobile phone to record lessons.
- To install screen casting software SnagIT on all teacher Pc's.
- To install Camtasia in specialist rooms and the media room and train any staff members wanting to excel even further in video creation.
- To use Flipped classroom approach in staff meetings to provide professional development training.
- To make students aware of the benefits of Flipped Classroom and use it to enhance their learning, in particular, with topics they may find challenging.
- To encourage students to become independent learners by enabling them to take responsibility for their own learning outside the classroom.
- To create confidence and enthusiasm within our school staff on the use of ICT.
- To train students to create their own videos of lessons.

Examples of lessons created by students

Student video 1 https://youtu.be/GDyndvJ9b6A A link to a student created video - Proclamation video

Student video 2 http://www.ramonamccarthy.com/lantern/ A link to a student created video of lanterns being made in class for the schools Graduation mass.

Implementation of the case-study:

Flipped Classroom Implementation:
Core team set up which consisted of four teachers who currently use ICT in their classroom.

How we do it:
There is a range of different methods available to make our videos.

Method 1:
Khan Academy is a recording of a video during a lesson created by drawing freehand on a writing tablet to explain a topic.

To achieve our very own Khan Academy Style video;
- We Use Smooth draw software with a writing tablet.
- We use SnagIt software for screen recording
- We use Camtasia Studio for video editing & to embed quizzes on our videos

Here is an example of a Khan Academy style lesson we created:
https://www.youtube.com/watch?v=qvQuF7xi-7w

Method 2:
Using a visualizer (this works like a camera) teachers can demonstrate a concept, draw or write on a page or whiteboard to explain a topic and it appears on the monitor.
As the lesson is being demonstrated SnagIt is recording the screen.

Here is a lesson example of a video a student created of a detailed technical drawing:
https://www.youtube.com/watch?v=QTi2T28NN0U

Method 3:
A live video is recorded with the teacher's smartphone with the option of editing this on Camtasia or Premiere Pro.

Here is a lesson example: https://www.youtube.com/watch?v=z6Ca921MFfc

To facilitate the implementation of the flipped classroom we have set up a media room within the school. The purpose of the media room is:

1. To familiarize staff with the available technology – The media room will provide a quiet area for staff training and familiarization of all software and hardware available in the school.
2. Recording studio - To have a place where teachers can record in a quiet room with all the necessary equipment and the latest software in place. Teachers can still record classes from their own classrooms but in the media room they can edit these videos and create higher quality output with improved audio etc.
3. Creative Department- give faculty the opportunity to work with graphics and visuals to enhance teaching methods such as flipped classroom teaching aids. Most audio, visual and graphic needs will be addressed utilizing the available Adobe Creative Suite of applications in the media room.
4. Access to software - A place for teachers & students to access all the latest cutting-edge software for animation, drawing, photography, web design etc.
5. Access to hardware – Access to all necessary hardware required to record or make videos.

Software available in our media room	Hardware available in our media room
Smooth Draw – Free drawing software to allow us to freehand draw on the screen with a range of writing tools.	IMac
Camtasia Studio – For video editing	High Spec Windows Pc
SnagIt – For screencasting (recording the screen) and screen capture	Visualiser – Samsung
Microphone/Headset – Audio recording	Writing tablet - Intuous Creative Pen & Touch Tablet
Smartphone – Video recording	Yeti microphone for professional recording
Writing tablet & wireless kit– used to write/draw freehand digital lessons	JVC stereo headphones
Adobe Creative suite includes; Photoshop, Light room, Flash (animation), Premiere Pro (Video), InDesign (page design and layout), After Effects (motion graphics and visual effects), Illustrator (art), Audition (Audio), Dreamweaver (web design), Muse (web building app)	Knox audio pop filter
Quicktime	

Findings from the case-study:
- Flipped classroom works best in mixed ability setting as students can now take control of their own learning. Students learn at different rates. Students who find a topic challenging can watch the videos repeatedly and the more able student can learn at a faster pace.
- Students become independent learners, taking responsibility for their own learning.
- The Flipped Classroom approach allows students to budget their time. Homework will no longer be a challenging experience. Students just have to watch a short video and answer some passive questions.
- When surveyed students revealed that The Flipped Classroom approach was far more helpful than the traditional way of teaching.
- During school time students are engaged immediately as the lessons becomes interactive. The teacher is not spending time at the top of the class explaining methods or topics but is free to wander and engage with the students.
- The Flipped Classroom approach was very useful for students absent from lessons. It can be used as a tool to allow the student to catch up on any lessons missed or any work that needs to be revised.
- Teachers do not always have to create their own videos to use The Flipped Classroom. They can use pre-existing content.
- Video recording allows for creativity in other areas - We have used it for Graduation Services, Sports Days and displaying student's work.
- In our school some teachers were reluctant to create their own videos as it is incredibly time consuming
- Teachers found that Camtasia was far too complicated. Despite training workshops, a large percentage of teachers refused to use it.
- Camtasia is very expensive and is not used enough within the school to justify its purchase.
- Some teachers found SnagIT more user friendly and accessible. However, like Camtasia, SnagIT is still costly and with limited numbers of teachers using it we're unsure about whether we are getting value for money.

- Teachers found smart devices incredibly user friendly. All staff have access to a smart device and found it easy to record a lesson. Despite sound quality reduction teachers were more enthusiastic to record with smart devices rather than professional hardware.
- We found the training videos were incredibly helpful and useful to introduce the concept of Flipped Classroom to staff.
- Some students have no access to data outside of school and were unable to watch the videos. This resulted in problems within the classroom. WiFi is required.

A link to our flipped classroom training videos.:
http://www.ramonamccarthy.com/theflippedclassroom/

Conclusions:

The Flipped Classroom method when utilized by staff was effective. Students enjoyed it and found it incredibly beneficial. Students were enthusiastic about watching the videos in the evening and teachers felt that all students' needs were catered for.

However, some teachers felt reluctant to use video software as it was complicated and time consuming. Some students have no access to data and were unable to watch videos so WiFi is a necessity in order to run this programme. As a result, Ennis Community College is not using The Flipped Classroom effectively. To encourage staff as much as possible we would advise to keep it simple - Use smart devices and pre-existing content.