



Erasmus+

This publication has been produced with the support of the Erasmus+ Programme of the European Union. The contents of this publication are the sole responsibility of LOGGED-ON and can in no way be taken to reflect the views of the NA and the Commission. Project number: 2015-1-NO01-KA202-013219



LOGGED-ON  
Empowering learning with technology

<b>School:</b>	Kendal College
<b>Country:</b>	England

## Case-studies:

### Use of Twitter in the classroom, Anatomy apps and Quiz games

#### Introduction

Kendal College is a small college located on the edge of the Lake District specialising in further and higher education and apprenticeships. Consistently ranked in the top 10% of colleges in the country and nationally accredited for its advice and guidance for students the college was judged 'outstanding' at its last Ofsted inspection and was awarded Beacon status.

The college is passionate about ensuring that their students are well prepared for their future with a learning environment reflecting industry standards to prepare them for higher education, apprenticeship training or employment. The College works with over 2,000 local employers and has very high number of apprentices with excellent employer satisfaction ratings.

#### Case-study 1: Use of Twitter in the classroom

##### Context:

Ingle and Duckworth (2013:4) comment that 'technology for many learners is not an extra or bolt on but a natural augmentation to their lived experiences'. Evans (2014) also notes that the changing demographic of today's students means that technology has come to be regarded as one of the modern tools that may be used to enhance learning. Twitter has over 100 million active users worldwide and is widely used by many of the current generation of students; however, as Junco et al (2011) point out there is little empirical evidence concerning its impact on learning. All of these points lead the tutor to consider that this is a subject worthy of further research.

The purpose of the case study has been to identify how Twitter could be used to motivate students to access an increased amount of research. Twitter has been used in conjunction with the colleges VLE and WordPress site, this has allowed for the monitoring of access to the site and tweets along with checking students handed in work to see if the number of references used has increased.

##### Implementation of the Case-study:

As previously noted the college VLE and WordPress has been used in conjunction with Twitter, this allows Twitter posts to be displayed as Blog posts on the VLE; meaning that students have the option not to follow the tutor on Twitter if they do not wish to do so but can still access the information available. By converting the posts to blogs has also meant that they can be categorized in Wordpress and have built into a useful research resource that the students have found very useful and easy to access.

The screenshot shows a WordPress blog layout. On the left, there are two article teasers. The first is dated October 4, 2016, by Lorraine Howie, titled 'Nurseries at risk as staff crisis hits', with a sub-headline 'Nurseries in England are struggling to recruit qualified staff putting them at risk of closure, campaigners warn.' The second is dated August 18, 2016, by Lorraine Howie, titled 'Bilingual language development', with a sub-headline 'Myth vs. Fact: Bilingual Language Development – The Hola Blog'. On the right, there is a 'FOLLOW ME ON TWITTER' widget showing a tweet from the University of Central Lancashire (@UCLan) celebrating its ranking in the Best Global Universities Rankings 2017. Below the tweet is a photo of graduates and options to 'Embed' or 'View on Twitter'.

Many students are now following the tutor on Twitter and this means that they can access posts on their own devices as well as on the college VLE.

### Findings from the Case-study:

#### Report on use of WordPress since Tweeting and blog posts started

The student's access to Wordpress has been compared over 2 four-month periods - the months September to December and then January to April.

Since January the tutor has been using social media and tweeting to the students about relevant research and then posting it on Wordpress as blog posts.

She has used the analytic tool on the Wordpress site to compare information for the two periods in time.

The results are as follows:

	Number of Visitors	Views per visit	Number of Views
Sept	21	27.29	573
Oct	18	17.33	312
Nov	22	17.05	375
Dec	14	11.93	167
<b>Total</b>	<b>75</b>		
<b>Average</b>		<b>18.4</b>	<b>356</b>
Jan	20	32.8	656
Feb	22	24.91	548
March	19	18.37	349
Apr	16	22.06	353
<b>Total</b>	<b>77</b>		
<b>Average</b>		<b>24.53</b>	<b>476</b>

The information gathered indicates that although the number of visitors to the site hasn't increased dramatically the views per visit has increased by 33%.

The number of views has also increased by 34%

This shows that the students are looking at more research per visit to the site; this has also been evidenced in their final Aspects of learning and development assignments where students have accessed some of the posted reports/ information available for their assignments.

### **Conclusions:**

There are many benefits to using Twitter in this way, the students gain access to the most up to date information as soon as it is released and are definitely beginning to use this in increasing amounts in their assignments; which will ultimately lead to increased performance and grades.

The tutor hopes that it will encourage the students to look at further research and use Twitter independently as a learning resource.

One other benefit is that Twitter can be used a medium through which to discuss academic issues with both peers and tutor and this is the area in which I now wish to develop the project.

The tutor proposes to set up a closed Twitter group and use this to ask the students questions about different posts and engage them in discussion. She is very excited about this next stage in the project and is keen to get feedback from the students as soon as possible.

## **Case Study 2: Use of Anatomy App**

### **Context:**

The purpose of the case-study was to provide students with the use of mobile apps in anatomy classes. The intention was to improve teaching and enhance learning.

### **Aims and methods of the Case-study:**

- To improve overall test scores for the group
- Provide students with technology to improve confidence with anatomy
- To gain higher engagement with topic areas for students in the classroom
- To improve the quality of assignments submitted

Students undertaking the project were level three apprentice students (n=10). Student's age ranged from 17-24 years.



### Implementation of the case-study:

An interactive app visible anatomy has been installed onto the college iPad for all students to access. The app provides students with 3D images and diagrams, a variety of information on each body system and appendage. Additionally, the app has capacity to allow students to highlight and underscore important information and the ability to email slides to themselves for the records.

### Benefits

The app(s) will allow students to engage with the topic areas at various times across the college working week and information is not restricted to in-class time.

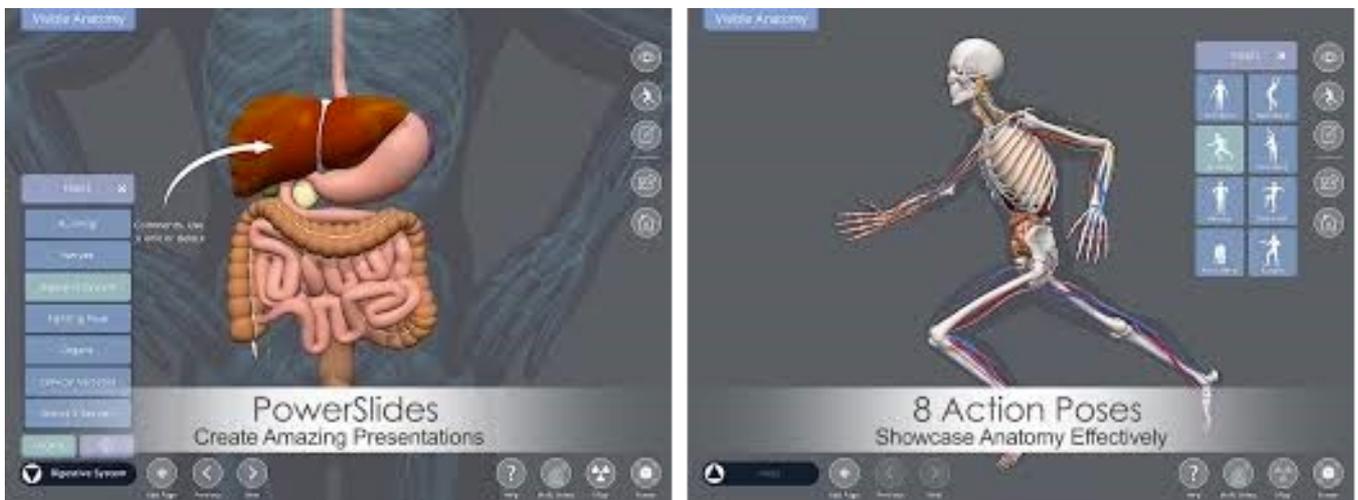
The apps are designed for systematic learning to allow students to progress through various stages of knowledge.

### Student's usage:

Students have and will continue to use the app in class for research activities and to consolidate learning both in and outside the classroom.

### Findings from the Case-study:

- Students have reported that they are enjoying the concept of the app, as they find it easy to find information quickly.
- Research and class participation has improved (measured by task sheets and questioning)
- Some learners have downloaded different apps onto their phones to use in and out of the classroom.



## Case study 3: Use of Quiz Games in the classroom

### Context:

While formative assessment strategies are essential for ensuring learners are engaging and taking part in lessons and meeting the required learning outcomes of the session, it can often be difficult to track progress when relying on strategies such as questioning and discussion in the classroom. Hattie (2011) suggests that Assessment for Learning (AFL) is essential in making the learners' knowledge (or gaps in knowledge) visible for the teacher, allowing them to differentiate their teaching strategies and provide constructive feedback, which was ranked as highly significant in making improvements to learner outcomes.

As a result of the importance placed on AFL strategies, it is essential to implement approaches for which it is visible to staff, learners and management in order to track and monitor progress. There are now several apps available that make it possible to track the results of AFL and provide quantitative data clearly showing learner progress. These apps can be used in the classroom, providing clarity of learning outcomes and generating data from which the teacher can adapt their practice to suit the needs of the learner.

### **Implementation of the Case-study:**

Classes from several subject areas in the college were used as a test to investigate the effectiveness of several different quiz apps as tools for assessing learning and tracking progress. The apps were used with students studying English Language, English Literature, Sociology, Childhood Studies, Music and Beauty Therapy in order to encompass a wide range of students studying at a range of levels and disciplines. The classes ranged from small numbers of learners (two to four) to larger classes (up to twenty-five learners). In compulsory subjects such as English, competition introduced through the apps was used to engage de-motivated learners. In other classes where learners were less confident or experienced anxiety in taking part in whole-class discussion, it allowed the teachers to assess such students without making them feel stressed.

The criteria that were taken into consideration in determining effectiveness of the apps were: ease of use, quality of data provided and student preference. The apps deemed most effective were then to be introduced to the entire college through Continuous Professional Development sessions aimed at all teaching staff, with the hope of the apps becoming used as a regular method of formative assessment throughout the year across the organisation.

The apps were used as recap quizzes at the end of lessons and as starter activities to consolidate learning from previous sessions so that they did not interrupt the main activities and content of the session. This also allowed for topics covered earlier in the year to be revised regularly in preparation for summative assessments such as exams and assignments, which require learners to display their knowledge of the entire syllabus. Each app was used over the course of the two-year project. At the end of the project, students shared their thoughts on each app in short fifteen-minute discussions.

Two of the apps (Kahoot and Socrative) required learners to use their own smart phones or tablets to answer questions. At the beginning of the case study, it became apparent that a small number of students did not have their own device that they could use to respond. This meant that devices needed to be borrowed from the college supply every time that these apps were to be used. In an institution with more students or fewer devices, this could prove difficult.

### **Aims and methods of the Case-study:**

The primary aim of this case study is to evaluate the effectiveness of quiz apps as Assessment for Learning tools that can be implemented across the institution, providing transparency of learning and progress for all learners. This would enable teachers to save time in lessons and evaluate learner progress on a regular basis. It would also allow the learners to regularly reflect on their own learning and gain an insight into the areas of their own study that they need to improve, allowing them to take ownership of their progress.

The primary method used in this study is observation and reflection from the teachers implementing the apps themselves as they can determine what is and isn't effective in their classroom, suggesting reasons for this based

on their knowledge of their subject content and their student groups. In addition to this, learner feedback was provided at regular intervals throughout the study. Gaining information about the apps the students themselves preferred and why is the best measure in understanding the effect of the apps on student engagement.

### **Findings from the Case-study:**

#### ***Socrative***

Socrative is an app/website available for both teachers and students that allows teachers to create quizzes on any topic. Teachers set up a 'room' for their class and create quizzes that the students access during their lesson. Students are then given a 'room' code that grants them access to the quiz. Students can do this either by using the app that they have already downloaded or simply by visiting the web page and typing in the room code given by the teacher. Questions can be multiple choice, true or false or involve writing a short answer. When the student submits their answer, they immediately see if they were correct or not. They are told what the correct answer is and the teacher has an option of providing further explanation. As they are done in class time, the teacher can also generate a discussion on the topics and give further feedback and clarification.

#### ***Ease of use:***

Socrative is both straightforward in the question-writing process for teachers as it is very quick to create a quiz and once students have the correct room number and a device, it runs smoothly on laptops, tablets and phones. As well as standard quizzes, there are also two types of game that can be played in order to add variety to the lessons. In classes such as Beauty Therapy and GCSE English where learners are less engaged with theoretical content, these games introduce an element of competition that engages students more than standard questioning techniques. There were however, a number of small issues that arose when using Socrative.

Firstly, if a question requires a short answer, rather than selecting an option from multiple choice, every possible correct answer must be submitted before the students take the quiz. If a student words their response slightly differently to the teacher's prediction or makes a spelling error, it is recorded as incorrect. In order to avoid this, only multiple choice or true/false questions should be used if accuracy of data is an important factor.

An additional issue of which there were two instances during the study (in A Level English and A Level Sociology), although a rare occurrence is that the app is difficult to navigate for a learner who is unable to use a device as a result of disability or additional learning needs. One such student could not use a smart phone or tablet but can use an adapted laptop. It was possible to access the Socrative site through the laptop but this was significantly slower for her than for the other learners who used smart phones or tablets. This meant that the pace of what should have been a short recap quiz was slowed down, making the process less inclusive than is ideal.

#### ***Quality of Data***

Socrative generates comprehensive reports of each quiz that can be viewed in-browser or exported into Excel spreadsheets or as PDFs. These give percentages for each student and highlight which questions they answered correctly, and which were answered incorrectly. It also provides results for each question so if all students did badly on a particular subject the teacher would know that it needs to be revisited. This data can be used to create differentiated Learning Outcomes in future sessions, adapted to the different learners' strengths and weaknesses.

PDFs of results can be generated for specific students. This is especially useful in target setting and feedback sessions as it is easy to show students the areas they are strong at and those that require further improvement.

It would be useful if these could be generated to show all the tests that a particular student has taken to show improvement, but this does not seem to be available.

### *Student Preference*

On the whole, students enjoyed using Socrative. It worked especially well in Beauty Therapy at engaging learners in theory sessions. They liked the competitive elements of the games and generally found it easy to use. The students' main criticisms were that they had often written a correct answer for the short answer question, but it was not recognised as correct due to wording.

Classes in which it was less successful were smaller groups containing learners with anxiety. They did not like the competitive element as the name on the screen showing individual positions within the games made them feel like they were too 'in the spotlight'. In addition, those who did not have their own devices felt that it took too long to get set up.

### **Plickers**

Plickers is an app that does not require the learners to use their own device. Instead, they are allocated individual QR-codes, which are printed on cards. Each card has the letters A-D written along each edge of the code, so they can be turned to show the different letters at the top of the card. The teacher uses their own phone/tablet and computer to show the multiple-choice questions on the screen at the front of the class. Students then turn their card so that the letter that corresponds to the answer they think is correct is at the top. The teacher then scans the QR-codes using the app on their tablet to determine which student has answered correctly.

### *Ease of Use*

While there are more initial steps to set up Plickers than for Socrative, once the group set-up is complete, the question writing and allocating process is largely the same. Initially, each group is set up as a Class on Plickers and each student is allocated a number that corresponds to the card they will be given. They then use this same card in every session that Plickers is used, enabling the teacher to compare their previous results. Once this has been done, it is very simple to create questions and add them to the queue for that particular group.

As Plickers does not require students to have their own device, the use in the classroom is very simple. This means that Plickers quizzes are very quick for all learners, making them inclusive for those with disabilities and not allowing learners to have any technical difficulties that may occur when using their own devices as the only device that can potentially experience technical difficulties is the one being used by the teacher, significantly reducing the likelihood of such an issue occurring.

### *Quality of Data*

Plickers provides both a detailed history of each question (allowing questions to be re-used to track progression) and generates month by month reports for each class. Like Socrative, these reports can be viewed in-browser or exported as CSV files. These reports show students' over-all percentages for the month as well as percentages for each question and a breakdown of which questions were answered correctly for each student.

While the question type is restricted to multiple choice and true/false questions, it is still possible to generate qualitative data to a degree. In subjects such as Music, it was used to provide learners with the opportunity to critique each other's compositions anonymously. Due to the closed nature of the questions, using it for this purpose is limited in the feedback that learners can receive but it is useful to provide quick data on how their work comes across.

PDFs can also be generated for each student that gives their percentage for the month as well as the class average and a list of the top three most commonly missed questions. This means that the teacher can understand which topics need to be revised for the majority of students and the student themselves can put their results into perspective by seeing the class average as well as their own score. They can also see which areas they are stronger or weaker in. If these were given on a monthly basis, progress could be tracked by both the teacher and the student. The transparency of this data would also allow it to be logged on college systems as a tool for monitoring progress across all subjects if it was implemented by all staff.

### *Student Preference*

Students were very receptive of Plickers. They enjoyed the competitive element and that by not knowing what everyone else had said as they would have done in a simple hand-raising exercise, they did not feel embarrassed or unsure about answering differently from their peers. Students could tell each other if they had answered correctly if they wanted to but this information was not available to the whole class, making it inclusive of both shy and outgoing students. They also liked how easy it is to use and that it didn't take long to set up before they started the quiz.

### **Kahoot**

Kahoot is a quiz app/website in which the teacher can create multiple choice questions and students respond using their own devices. Kahoot is more competitive than Socrative and Plickers in that there are time limits for questions in order to put pressure on students to stay engaged and after every question, a scoreboard is revealed to the class, showing the top five students. It also gives the opportunity for the teacher to revisit the question after it has been answered to explain it in more detail.

### *Ease of Use*

Creating questions in Kahoot is very easy and works in a similar way to the previous two sites. Multiple choice questions can be made and can include images or videos. Like Socrative, Kahoot gives the options of team games as well as individual quizzes. Students enter the code that is displayed on the screen for that particular quiz onto their own device, which is very simple and can be done using their device's web browser or the app.

Kahoot encounters the same issues as Socrative; all students require their own device or access to borrow one from the college and any students with difficulties using such devices may struggle to respond quickly. This is more of an issue when using Kahoot as there is the time-pressure element for each question, therefore any students unable to answer in time are penalised.

### *Quality of Data*

Reports from Kahoot are more limited than those generated by Socrative and Plickers. One set of results can be downloaded as an Excel spreadsheet immediately following the quiz. This displays the results per student and per question, but individual PDFs cannot be generated. It also appears that these results can only be downloaded immediately following the quiz and not revisited at a later date if they are not downloaded at the time.

As these data cannot be easily tracked over time, it is less transparent as a method for tracking individual progress in a given subject, but the data can be used by the teacher to adapt and differentiate their future lesson content.

### *Student Preference*

In general, learners enjoyed the competitive element of Kahoot, especially with the background music making it feel more like a game. It worked well in Music, Beauty Therapy and Childhood Studies as a recap tool to engage students with previously studied content. Students said that 'It makes learning fun because it has that competitive aspect'. The time pressure and on-screen leader board created similar issues to Socrative with anxious students in A Level classes.

### **Conclusions:**

While the different quiz apps all proved to be effective AFL strategies, over-all, Plickers was found to be the most effective quiz app to use. It is the quickest and easiest to use in the classroom as it does not require any additional devices other than the one that the teacher has. It generates detailed reports that allow the teacher to track progress and also can provide the student with an insight into what areas they need to revise/develop further.

The LOGGED-ON team have delivered training to all staff in how to use the different quiz apps, encouraging staff to incorporate them into their regular teaching practice. It was found that using a combination of different apps was effective in engaging learners with more theoretical content and recapping complex topics. Following the training in January 2018, staff who attended responded positively in a follow-up questionnaire saying, 'Given some very good apps to assist with improving learning' and 'Some good tools to use to help with differentiation and to assess student learning' with all staff who attended stating that the training was useful to them.

Based on this case study, it appears that quiz apps can be used effectively as AFL strategies in a wide range of subject areas and that if used regularly and uniformly by all staff in an institution, it could provide detailed data to track and monitor student progress across an entire institution.