Goldaming College: Using student mobile devices to create Biological Process Animations

Summary

Students are carrying increasingly advanced mobile devices into the classroom. Devices that they know how to use well and could be used to help learning and assessment. One challenge that faces teachers is how to tap into this rich resource. One simple yet effective idea Neil Roberts has piloted with his Biology A2 class is to use cameras built into student’s phones and tablets to create stop frame animations of biological processes. Drawn and simply sculpted artefacts were created by students and moved to show the electron transport chain. Each stage was then photographed and packaged together to create a short animation.
About…

Godalming is more than a College with an outstanding reputation. We are a successful, modern, learning community which meets the needs of sixth form students in the 21st century.

The challenge

Students find learning scientific processes verbatim boring and difficult. Without internalizing the steps of the process, it is hard for them to make connections between the steps and to understand the science behind why the steps occur in that way.

The activity

Students create a backdrop onto which they will show the process. Plasticene or Playdoh is then used to represent the molecules which are moved, and sequential photographs are taken using mobile phones / tablets which are then used to create either a story board (Word), powerpoint or film (Movie Maker) which details the process.

The outcomes

Any method that allows students to spend time creatively engaging with topics that are tricky to visualize is hugely beneficial. Creating stop-frame animations of processes is an enjoyable way for students to visualize processes. Using mobile phones and tablets makes the capture of stop frame animations images possible during class time and relativity easy for students to complete outside of the classroom. The sequence of images that form the animation remain on the students device and allows students to quickly refer back to them for revision. Films are then shared via a forum and class members comment on how helpful each one is at explaining the process.
The impact

Students have found this useful not only as a learning tool but also for revision. With long processes, this helped students to break it down finding ways to make constructive use of the devices that are already owned and used by students, minimizes the initial financial outlay required for a whole class to engage in this type of activity. It removes the problem of storing and distributing equipment and the real risk of the device becoming obsolete. Staff need no training on a specific device (although do need to be confident on how the activity will be conducted and prepared to give advice on the options for how students should package the images). No PC’s are required during class time. This technique has been looked at with interest by other science teachers.

The lessons learned

It is important to ensure that students are able to share the photos they have taken as whilst it can be used as a small group activity it is important that each member produces their own animation from the photos taken to reinforce learning. Sharing gives the students a wider range of photo’s to use in their animation, making the end result clearer and more complete. Students have used Bluetooth, email and Facebook to upload photos to share, all mediums the students are familiar with, so little training is required. It is also important for students to take photos in the lowest resolution possible e.g. VGA, 1MP as 20 – 30 photos soon becomes unwieldy when producing a subsequent film if each photo is 5mb is size.
Useful links

An example of a stop animation video: The Electron transport chain by Lily Mendes da Costa can be found on the Jisc Website (Insert link)

www.godalming.ac.uk

Student feedback on the process.

More student feedback

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