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The creative spark and grind of technology in education

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The spark and the grind

Just look at this mess! EdTech, Information and Communications Technology (ICT), Computing, Information Technology (IT), Computer Science (CS), Digital Literacy. It is the odd sock syndrome again, where the pairs should line up together in the drawer, but this simplicity has often been lost. Naace members will be aware of all the conflicting definitions. I have to support our university students as they try to pick their way through the minefield.

Technology when used acutely and accurately in the classroom can have a positive impact on children's learning. But the use of ICT has grown in schools at an incredible rate, which has led to teachers having to acquire different ICT skills and widen their awareness of the different classroom technologies out there. Often the training lags behind.

With the rise of the internet, interactive whiteboards, computers and mobile technology so small the connected world can fit in your pocket, it is no surprise teachers are struck by the rate of change of technology in schools. Along with its ability to change the way we think, interpret and express ourselves, its ability to impact on learning is also staggering. While you are reading this article, cast your mind back to the technology that was available to you in your childhood. Perhaps the video recorder, the Walkman with tapes, or the vinyl record which you bought from the shop before eagerly walking home and lifting the delicate arm and needle of the record player to hear the music.

Technology evokes strong memories for many people who use it. It is a BIG deal. It can be compared to the ideals of the fashion industry, the glitz, glamour and anticipation of what is going to be the next big thing to get our hands on. These

things will enter our homes, the family environment and will be used by our children. Ultimately, they will also change the way we educate ourselves and learn.

Yet in some areas of education, we are forgetting the power technology provides. When teachers employ their use of digital technologies to different activties, these can generate these powerful memories for the pupils we teach. Erik Wahl's text *'The Spark and the Grind: Ignite the power of descipline creativities'* raises some interesting questions between the relationships between technology; the teacher, and then learner. Wahl (2017) proposes the point that creativity in any activity consist of two elements: the '**spark'** and the '**grind'.**

Both should coexist side by side. The *'grind'*, refering to learning the routinue and craft of the activity you are involved in; the mandatory process of just fullfilling the mudane requirements of the tasks provided as part of the course of a normal working pattern. Where as the *'spark'* signifies the generation of newness – new ideas, different activities against the norm and in essence, the multiple generation of these sparks in order to trigger a creativity out of the daily grind. Not all sparks catch light, but all it takes is one to make a difference to the teaching and therefore in learning more about the subject.

The student perspective

In the face of the variety of digital technologies, I both struggle and am excited by the rate of change Computing can deliver. Throughout my teaching career, I acclimatised to the speed of new initiatives and was left to discover how these could change the culture of my classroom.

I was talking to some undergraduate students once about what it is like to grow up using Snapchat/Facebook/Instagram and be constantly in the public eye of everyone. I asked them why they made the choice to be on there. Here are some of their answers:

- *It's a photographic record of fun times and events. Just as people used to print off their photos and put them in an album, this is our way of doing that;*
- *It's my main way of communicating with friends;*
- *My friends use it to help me get organised;*
- *We use it to collaborate and keep ourselves on-task.*

I was once teaching a young person and we were working on performing a piece of music together. I asked her to listen to another performer playing the piece. I explained that it was on YouTube and why it was a great example to listen to. She responded by explaining that she couldn't go on YouTube at home because her dad had blocked it, but it was OK because she would have a look on her phone!

My point is that technology is all around young people and there are a variety of different ways of accessing it. If we are not careful, considered and open about the way young people use technology then we begin to mistake our reservations and anxieties for safeguarding.The barrier the adult had placed in the way did not phase

this girl at all. She is growing up with technology and it is forming part of her culture: it is her background. The young will always find a way around in secret if we do not engage in the process with them.

Somehow and somewhere along the line, the UK Computing curriculum became heavily weighted towards computer science and in the process of focusing on algorithms, debugging and coding we forgot the most fundmental point made within the National Curriculum (2014), that primary children should,

> *select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information*

They should have the sparks lit so they understand more about the grind but so they can also demonstrate innovation in their digital skills. It fosters the notion of a different technology-based background from the experience of our own and this is important as it helps shapes children ability to interact in a global space.

Early experiences matter. In April 2012, The National Trust launched a campaign entitled, '50 things to do before you're 11¾' [1]The campaign sets out 50 challenges for children and families to complete together which enable children to have outdoor experiences creating exciting childhood memories. Bravo! If children were to complete these tasks, then they would indeed add many fond childhood memories and rightly so. Technology also adds to the background of a person. Look below at some of the technology introduced over the decades. How much of the technology below shaped your childhood experiences?

How ICT motivates children

Technology has always had an effect on its user. Whether it buzzes, flashes, emits a sound or illuminates, it inherently beckons its user to do something. It is important to remember that all technology has an ON/OFF switch and throughout children's development they need adults to be their filter and help them to moderate their use.

Regardless of the time they spend on the computer, ICT has the potential to motivate children in a number of different ways:

- *Trial, error and review* – by far one of the best processes to come out of using technology, is the fact that computers allow us to change our work and minds in unlimited ways. What is interesting about this is that it changes the way we complete a task, read our work and continue try to improve it until it is finished;
- *Reward with goals* – computers can make a large task achievable. They can be programmed to reward progress at different stages and can keep a user

[1] www.50things.org.uk.

achieving. This is particularly useful for mental maths and other activities which require repetitive stages and rewards. Imagine trying to combine the web, video and text tools available so that you can learn a new skill or demonstrate your knowledge. At the end of their learning they rewarded with the satisfaction of a piece of work;

- *Problem solving* – ICT can present problems in different ways to children. The combination of adding video, text and websites can open up new potential for presenting investigation work. For example, use your interactive whiteboard software to present a maths investigation. The children can then move objects around the screen. The ability to be able to use the 'undo' command in this situation makes it easier for children to explore different answers on a trial and error basis.

  From a teaching point of view, using digital tools and drama can add an interesting twist to the beginning of a lesson or, at certain points, to progress the learning. For example, when teaching the children to write a newspaper report, use an introductory film clip you have created to introduce the topic. Put yourself in the role of a newspaper editor. Don't worry about it being polished, your children won't mind. I would always tell the children that it was my super clever brother, which always raised a chuckle! You could also make shorter 'helpful hint' clips to embed throughout the lesson to remind the children to include certain features or editor challenges to stretch your most able children.

- *Creative freedom* – children can use ICT to create anything they wish to communicate. Art tools, web tool and different platforms all allow children to use the medium of technology to express their ideas. Mobile technology is making the educational 'grind' of learning much easier for children to create, comsume and capture theie thoughts. The ability to redo, undo, resize and replace anything and everything on the page helps the user to tailor an idea until they are truly happy with the look as well as the content.

A challenge for you

Digital technologies can have a poor press from time to time as people take its uses to extremes. Anything digital, used in excess, can risk compressing other areas of life. Part of our nurturing adult role is to encourage children to grow up in a broad and balanced way while encouraging the interests of the individual. All of this is still possible with the introduction of technology. If fact, technology helps individuals to develop 'awe and wonder', and to try out concepts in a virtual world before committing to real-life situations, as well as capturing moments and preserving their memory.

Children will overtake the majority of adults with the speed in which they are able to work out and use technology. However, we as adults have the experience to educate children in the responsible use of the technology and to set boundaries for how they use it. It does not have to be 'the Big Bad Wolf' if it is used as a tool to strengthen and enrich learning. We also need to be able to show children how technology is not

just about digital developments, game playing and the internet, but that technology has enriched other areas of the world from travel to medicine. The introduction of new technologies such as mobile technology, augmented and virtual reality should offer any teacher great sparks of imagination against the implementation of how we are testing and assessing children at the moment. Deepening the learning encourages children to question what they are seeing. Deepening the learning through the use of digital innovation widens children's view of the connected multimodal global world we now live in.

To that extent I am proposing a challenge to widen this perception. Earlier in this article, I referred to the National Trust's '50 Things to do before you're 11¾ '. The same could be applied to digital and technological activities. What else would you also include?

'Digital and technological' things to do before you're 11 ¾
Awe and wonder
Experience a planetarium space display. Use a digital video recorder to record a family member or friend's event. Take a digital photograph of the most amazing sight in your eyes. Travel to a place you have not seen in virtual reality. Stand under the Eiffel Tower or Colosseum wonder at how they were created. Learn a skill using YouTube. Watch a 3D movie. Read/experience an interactive book. Interact with a talking robot. Go on a digital scavenger hunt. Use augmented reality to interact with information. Use Blippar to see a butterfly transform and move.
Practical with adult help
Change a light bulb. Cook a cake using a microwave. Learn how to re-wire a plug safely. Use the internet.
Object related
Play with a remote-controlled toy. Use a touch screen tablet. Use an interactive whiteboard. Experience using a green screen (this effect is used in the Superman films and you too can become just like Superman flying through the air).
Software related
Create your own computer game using basic programming. Create a short movie. Create a word cloud using Wordle. Use a different computer operating system. Create a piece of artwork using Tagxedo. Create an animated movie using Lego characters. Learn how to use social media responsibly within a learning context and for

connecting with other learners.

Do Tweet or email me your ideas to share with my students:

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References

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Wahl, E. (2017) *The spark and the grind: Ignite the power of disciplined creativity.* New York: Penguin.

Jon's latest books are:
- Jumpstart! Apps https://www.routledge.com/products/9781138940161
- The Ultimate to ICT for Primary Teachers - http://www.bloomsbury.com/uk/the-ultimate-guide-to-using-ict-across-the-curriculum-9781441144003/

He is also working on the knowledge exchange project: **M**apping **E**ducational **S**pecialist know**H**ow (MESH) http://www.meshguides.org