



# Is technology hindering creativity?



## Preview: Introduction

Theatre is a people centred industry relying on many creative talents & personalities.

Today's students are the so-called 'digital natives' who seem to believe that the internet can solve all problems.

Is reliance on technology hindering the creativity in today's students of technical theatre?

## Prologue: What is creativity and why is it important?

If we wish to encourage creativity in the students that we teach, what should we use as a benchmark?

*"...a product or response will be judged to be creative to the extent it is collectively novel, appropriate, useful & correct, or valuable in the context of the task at hand"*<sup>1</sup>

Certain personality traits have been identified as being common to creative people including...

*"intellectual curiosity, deep commitment, courage to be different, independence in thought & action, strong self-confidence, intrinsically motivated"*<sup>2</sup>

Sounds like the perfect student?

Creativity is recognised in all sectors of education & society, not just within the arts. The creative industries have a growing profile in the economy, bringing in value & employment.<sup>3</sup>



## Act One: The positive power of technology

We have almost unlimited information available, which has enriched our lives, ignited our passions and expanded our world to global horizons. As educators, we need to integrate & capitalise on this.

**Q: So is this technology changing how we think?**  
A: Yes...

Repeated exposure to digital media & computer games was found to have a positive effect on certain cognitive skills including:  
*"representational competence, multi-dimensional visual spatial skills, mental mapping, inductive discovery & attentional deployment"*<sup>4</sup>



Online gaming encourages a co-operative approach to problem solving. Game designer, Jane McGonigal believes that this collaborative power is a resource to solve real world problems too.  
*"...we can make any future we can imagine"*<sup>5</sup>

The integration of technology into the classroom means that students will be able to construct & manage their own learning, using their own devices, guided, rather than instructed, by the lecturer.

*"By 2020, around three quarters of UK universities were actively developing in or using the virtual world of Second Life"*<sup>6</sup>

Virtual worlds *"open new possibilities for learners... setting education in a context of playfulness, delight & creativity"*<sup>6</sup>

## Interval: The impact on teaching & learning

Five killers of intrinsic motivation & creativity have been identified...

- expected reward
- expected evaluation
- surveillance
- time limits
- completion<sup>7</sup>

...all of which also apply to the assessment of work. Assessing any art form is entirely subjective & to the student *"the uniqueness of the experience is a powerful & effective component of learning"* even if we, as educators, have seen similar results before.<sup>2</sup>

## Act Two: The negative influence of technology

Imagination & creativity both require time & mental space - things in short supply today. Without the stimulus & time created by boredom, some young people will never be able to daydream.

**Q: So is this technology changing how we think?**  
A: Yes...

1. Being alone is a concept that the 'digital native' generation struggle with. Whilst connected they can share every detail of their lives but is solitude not required for mental reflection? And without reflection, how do you learn from your experiences?

*"...no real excellence, personal or social, artistic, philosophical, scientific or moral can arise without solitude"*<sup>8</sup>

2. Concern has been expressed about the effect of 'cognitive overload'. Exceeding this limit of our short-term memory can result in the inability to...

- make connections
- store relevant information
- apply knowledge correctly

3. Digital multitasking, using multiple sources simultaneously, has been proved to adversely affect learning.

Multitaskers were terrible at...  
*"ignoring irrelevant information... keeping information in their head organised... at switching from one task to another"*<sup>9</sup>

This was in complete contrast to the opinions of the students tested who all thought they were *"brilliant"* at multitasking.

*"The ability of multitasking to shatter attention into unusable shards, & its subsequent effects on learning, don't seem to be enough to dislodge us from our current multitasking habits, nor from our collective belief in the harmlessness of it"*<sup>10</sup>



## Act Three: Investigation & research

I carried out a review of recent literature upon the subjects of creativity and how the use of technology is affecting students.

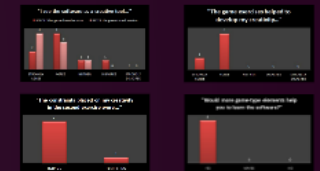
In reflecting upon my own teaching of the COMPUTER AIDED LIGHTING DESIGN module, I tried to encourage the students to see the software as an aid to creativity, with a game-based session which focused on creating an original lighting design based on the students own inspirational source. All eight students enrolled, took part & completed a Qualtrics survey afterwards.

## Credit to...

1. Amabile (1998) quoted in Creativity in Education: A Review, Spendlove D., (2005)
2. Creativity in Education: A Review, Spendlove D., (2005)
3. Creative Industries Economic Estimates, DCMS (2015)
4. Digital Activities, Digital Immigrants: Parts 1 & 2, Premack M., (2001)
5. Gaming Can Make a Better World, McCaughey J., (2010)
6. Meaningful Learning & Creativity in Virtual Worlds, Ferguson R., (2011)
7. The End of Solitude, Deresiewicz J., (2009)
8. The Multitasking Menster, Helsing L., (2012)
9. The Gamification of Learning & Instruction, Kapp KM., (2012)
10. Digital Activities: Where is the Evidence?, Helsper EJ. & Eynon R., (2010)
11. Finding Flow: The Psychology of Engagement with Everyday Life, Csikszentmihalyi, M., (1997)

## Denouement: The findings of my own experiment

I discovered that gamification added rules & structure to the creative process & that game based elements such as *"providing learners with permission to fail, encouragement of out-of-the-box thinking & fostering a sense of control"* created a meaningful & enjoyable learning experience.<sup>3</sup>



## Epilogue: In conclusion...

A study carried out by Helsper & Eynon discovered that the older generation of 'digital immigrants' which includes all of us educators, can thrive in the digital age, with any decline in digital activities not happening until after the age of 55, if at all.<sup>10</sup>

If, as 'digital immigrants', we continue to develop & embrace technological change, there is no reason to suggest that we cannot continue to educate effectively & with the passion we feel for our subjects.

The concerns expressed about the current generation of students - their inattention, inability to concentrate & obsession with hand-held devices - also relates to the audience of the future, who will be 'afflicted' by the same traits. The management of their expectations & behaviour, alongside the demands of the performers, will take an understanding borne out of both a creative training & experience of the digital world.

Such is the volume of material out there in the digital world, that real imagination & creativity is required to stand out from the crowd. The level of distinctiveness required for this to happen may actually lead to even more imaginative work being created by the current generation of students.

*"Creative persons use the best knowledge from the past & present to discover a better way of being in the future"*<sup>11</sup>