Technology for Enhancing Students’ Creativity

by

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Abstract

Creativity is the ability to generate novel, useful ideas and innovation and the successful implementation of those ideas. With this in mind, it is tempting to suggest that technology has made us more creative: the digital revolution has clearly produced a large number of innovative products and services. Technology does not quell creativity, in fact, there’s a great deal of evidence that suggests that technology enhances creativity. Certainly, we are expected to be more creative in our working lives than a generation ago. The truth is that by expanding possibilities and automating part of the creative process, we can all be more creative and productive. This paper discusses about how to use various technological tools to enhance students’ creativity.

Key Words: Creativity, Technological tools

Introduction

Over the past several decades, creativity has become a subject of heightened interest to the field of teaching (Plucker, Beghetto, and Dow, 2004). As a trait, it is associated with social, emotional, cognitive and professional advantages in life (Sternberg & Lubart, 1996; Sternberg, 2006), and is considered to be one of the most highly coveted qualities of thinking (Lewis, 2008). There is a strong, and generally agreed-upon recognition of the necessity of creativity in teaching (Amabile, 1996a; Sternberg, 1999; Cropley, 2003; Sawyer, 2011), and that creativity should be nurtured and supported in educational environments (Williams, 2002). However, there has also been a comparative lack of studies (in relation to other areas of educational research) around creative teaching, that seek to better understand how creative teachers think, work and function in the classroom, and how these concepts can serve other classrooms and teachers going forward (Sawyer, 2011).

There is a definitive need to understand how successful teachers operate creatively, in their lives and their classroom practices. Studying creativity, however, is complicated by its abstract and...
complex nature, and the fact that there is not one consistent definition of “what creativity is” or what it means for effective teaching (Baker, Rudd, & Pomeroy, 2001; Friedel & Rudd, 2005; Marksberry, 1963; Sternberg, 1999).

Creativity, ingenuity, and innovation are the keys to success in the evolving global economy. To prepare young people for work and life in the 21st century, educators must cultivate students' creativity. Nearly every list of 21st century skills mentions creativity as important to success, even survival. Richard Florida's *The Rise of the Creative Class* (Basic Books, 2002) and Daniel Pink's *A Whole New Mind* (Riverhead, 2004) point to creativity as not just a nice extra for those working in the arts or entertainment, but a career and college readiness skill for all. We live in a world that is creative; we live in a time where innovation is the key word; inventions by human have reached every sphere of life. We cannot deny the fact that much of the education that has been imparted till now has been memory-based. But proper learning should involve memory-based learning that triggers the cultivation of use of analytics, proper evaluation of skills and above all, the presence of creativity, the urge to create something new that would bring about an evolution!

Creativity is definitely different to different people and for some, inventing new ways to do the same things might be creative; while for others, discovering new things is all about creativity. But whatever is the concept, motivation should be given to children to be more inventive in education.

Neuroscience research has proved the fact that all children are born with innate creative powers and as they grow up some of them keep their creativity active while others unconsciously keep it dormant. Hence, all of us from being a child have the potential for great, revolutionary creativity and all we need is to realize this potential. We must be thinking how to do that? Well, in this modern era of technology, the solution becomes very simple, to utilize technology to keep your creativity intact and flowing. Actually, the overall school system has contributed towards the deterioration of creativity of children. This system makes children victims of the education agenda where certain subjects and skills are prioritized over others to prepare students for rustic and monotonous careers which require mechanical and systemic thinking rather than critical thinking and intellectual creativity. All this calls for a dire need to look for ways by which we can redress the situation and give back life to creativity in classrooms using technology. Yes, technology, which is something that students love and use the most, can be of great help to us in this endeavor. Technology will not live up to its potential until we start to think of it less like televisions and more like paintbrushes. That is, we need to start seeing computer screens not simply as information machines, but also as a new medium for creative design and expression. The more we learn about the abilities of technology, the more creative we become.
Balancing Analytic, Synthetic and Practical Abilities

Creativity is as much a decision about and an attitude toward life as it is a matter of ability. We routinely witness creativity in young children, but it is hard to find in older children and adults because their creative potential has been suppressed by a society that encourages intellectual conformity. We begin to suppress children’s natural creativity when we expect them to color within the lines in their coloring books. Creative work requires applying and balancing three abilities that can all be developed (Sternberg 1985; Sternberg & Lubart, 1995; Sternberg & Williams, 1996)

**Synthetic ability** is what we typically think of as creativity. It is the ability to generate novel and interesting ideas. Often the person we call creative is a particularly good synthetic thinker who makes connections between things that other people do not recognize spontaneously.

**Analytic ability** is typically considered to be critical thinking ability. A person with this skill analyzes and evaluates ideas. Everyone, even the most creative person you know, has better and worse ideas. Without well-developed analytic ability, the creative thinker is as likely to pursue bad ideas as to pursue good ones. The creative individual uses analytic ability to work out the implications of a creative idea and to test it.

**Practical ability** is the ability to translate theory into practice and abstract ideas into practical accomplishments. An implication of the investment theory of creativity is that good ideas do not sell themselves. The creative person uses practical ability to convince other people that an idea is worthy. For example, every organization has a set of ideas that dictate how things, or at least some things, should be cloned. To propose a new procedure you must sell it by convincing others that it is better than the old one. Practical ability is also used to recognize ideas that have a potential audience. Creativity requires a balance among synthetic, analytic, and practical abilities. The person who is only synthetic may come up with innovative ideas, but cannot recognize or sell them. The person who is only analytic may be an excellent critic of other people’s ideas, but is not likely to generate creative ideas. The person who is only practical may be an excellent salesperson, but is as likely to sell ideas or products of little or no value as to sell genuinely creative ideas.

Encourage and develop creativity by teaching students to find a balance among synthetic, analytic, and practical thinking. A creative attitude is at least as important as are creative thinking skills (Schank 1988). The majority of teachers want to encourage creativity in their students, but they are not sure how to do so. Those teachers can use the technologies presented below to develop creativity among their students.

**Need For the Study**

Creativity is the ability to generate novel, useful ideas. Creative thinking as a natural talent is needed to be nurtured so that creative individuals can assist their societies solving many problems differently (Sternberg & Lubart, 1995). Technology can help producing creative techniques and the user to go beyond the traditional methods and provides information in different ways prompting individuals to come up with creative ideas which helps them to master
thinking skills since the creative thinking requires several cognitive processes that might not be mastered by traditional methods. Keeping in mind the importance of technology in enhancing creativity of students, this paper “Technology for enhancing student’s creativity” has been chosen.

Scope of the Study

When it comes to classroom teaching, technology can access most of the senses and therefore it accesses different learning styles. It can give all young people access to the visual, aural and increasingly the tactile world. The use of ICT is extremely motivating and can give access to pupils who may lack other more formal or traditional skills. The teacher can unite the learning that happens in and out of school. This paper explains the role of technology in enhancing student’s creativity.

Technological tools to enhance student creativity

Blogs for creative thinking

Blogs are a great way for the development of creative thinking and writing in students. It provides freedom to students to post whatever they want and comment upon or share each other’s material. They can openly write on topics that intrigue them and give vent to their ideas without having to worry about grading or grammatical errors. Students can volunteer to organize and manage a common class blog, which will act as a common source of expression for the entire class. Blogging makes students feel responsible for their own learning and they are encouraged to incorporate creativity in their learning through them, which they could not do before. Few free blogging platforms for teachers and students are, Edublogs, Blogger, WordPress and many more.

Cartoon and Comic Strip Tools

Students love cartoons and comics, we can tell this right from the shine in their eyes whenever teachers introduce such material into their lesson plans, students automatically get engaged more than ever. So, why not introduce students to a set of free and friendly tools to empower them to create their own comic strips or cartoon animations. This will give them a chance to let loose their creative powers and delve into the world of creativity without any hindrance. Let them create their own cartoons to conceptualize a topic or a popular figure, in the way they want and let them express what they think about a school event in a comic way. ‘Cartoons for the Classroom’ is one popular website, which is a great resource of comic strips for students and teachers.

Mind-Mapping and Brainstorming tools

Brainstorming on topics that are to be introduced to students has now become a great collaborative way in today’s teaching practices, which encourages students to think out of the box and creatively. Brainstorming when done with technology becomes much more easy and
engaging. Students can conveniently do it on their own. They can use a set of easy and free tools to make fantastic mind-maps and visual graphs to illustrate a topic or a concept. These tools boost their creativity and provide them with different ways to interconnect their thoughts. Some free mind-mapping tools for students and teachers are SpiderScribe, Wise Mapping, ChartTool, Creately and more.

**Infographics**

Infographics are loved by all, since they represent data in a colorful and catchy way. By using free tools for infographics, students can create awesome graphs, which make the interpretation of information easier and quicker. They can employ their creativity and imagination to create an infographic about a topic, concept or anything they want. They can share these infographics and also embed them into their classroom blog. This thrives and fosters creativity in students. Some free tools for creating infographics are Wordle, Tableau, Inkspace, and more.

**Video and Audio tools**

There are many easy to use video and tutorial creation tools that students and teachers can use in their teaching and learning. Students can create their own videos and share them with their class, which can be a great opportunity for them to develop their creative skills. Audio tools are equally significant; students can create short embeddable audio clips using them. They can even simulate a discussion with others or anything else they want. They can record it and share it with their mates on the class blog or school website. Some video-making tools for students and teachers are Jing, Camstudio, Screenr, etc. Some audio-recording tools are Vocaro, Audio Pal, Record MP3 and more.

**Digital storytelling tools**

Telling a story is a powerful way to communicate with others. It improves the creative skills of students and helps them explore the meaning of their own work and experience. Students can create their own digital stories with many available free tools, namely, Story Bird, PicLits, Slide story and more.

**Games**

Games have incessantly proven to be one of the best ways of promoting co-operation and creativity. Educational games keep students engaged with their study, ignite the interactive and imaginative element in their thinking and mould it towards creativity. Now, games have become a must to be included element in education. Some educational games freely available online are Capital Penguin, Grammar Gorillas, FunBrain.com and more.
Inspiration Maps

This app allows teachers and students to create concept maps, diagrams, family trees, and more, encouraging students to brainstorm and organize facts in a creative way. Features such as file sharing make it a valuable collaboration tool as well.

Deekit

This online whiteboard allows students to interact in real time and share materials and notes instantly. Students can draw and add text and images for the whole class to view, which gives them a chance to be creative and see how other students comprehend the lesson differently.

Google Maps

Google Maps is a more creative way to teach your class about geography, math, language and art. Use Earth Picker, a feature that randomly selects a location, and have students determine based on creative cues like architecture, monuments and surrounding imagery.

Ted Talks

Choose a TedTalk to inspire a lesson and your students’ creativity on that topic. Using the video as a vehicle for the lesson is appealing for every kind of learner because it has visual, auditory, and even kinesthetic aspects, if you do a hands-on activity afterwards. TED has a growing library of videos that you can use for lesson building.

iAnnotate

Students use iAnnotate for digital note taking, using a pen, highlighter, and even photos. This makes it possible for students to use the effective tactic of close reading in the digital world and express their creativity in the way they take their notes. This is also a great grading tool for teachers.

Wordpress

Use this blogging platform with younger students to create “learning stories”—a collaborative effort between students, teachers, and families to share their work.

Paper by 53

This app allows students to create sketches, notes, and ideas, both at home and in class. Students can create diagrams and charts with an easy pen tool, making it easy to put notes on “paper” in a more creative format.

Technology and Curriculum

One of the most intimidating aspects of infusing technology into curriculum is that educators often believe that they will have to master and then teach their students to use new
technology tools before assigning a project. These concerns are understandable as our time for professional development is finite and school curricula are already packed. However, consider the impact if, rather than focusing on new tools, we explored the skills students need to learn and then incorporated the most effective digital resources to accomplish those objectives.

Teacher’s Role

Look Past the Flash

Good teachers know that learning is all about the skills that students develop in the process of a lesson, activity or project. Most teachers are exposed to digitally infused curriculum with flashy projects like documentaries, blogs, Minecraft activities, etc. However, the most important thing is to look past the flash. Before you sit down to design a project, think about what skills you want students to learn in your class. For example, do you want your students to learn how to deeply research and assess sources effectively? Do you want them to demonstrate their understanding of a theoretical physics concept? Start with your traditional lesson objectives and build off those.

Present an objective, not a recipe

When you give your students a digitally infused project, there are different ways to structure it that will maintain your rigorous expectations but not require a lot of time teaching new software or hardware tools. For example, history students could use digital tools to make documentaries. Give students clear parameters (such as time limits) and expectations for the project, but let them choose their own video tools and hardware. The project should be open-ended enough that students can get creative: by using appropriately licensed images, creating a live-action video or even incorporating their own artwork. Ultimately, when students explore topics independently, solving problems as they arise, they become more invested in their own learning. Allowing them to creatively develop their own finished products gives them some control over learning artifacts they produce to demonstrate their understanding.

Let them figure out

If we provide students a broad outline and allow them to choose their own tools, they can be more creative in the overall process. And, while it’s normal to want to understand the tools students will be using before assigning a project, don’t fret too much about teaching them new tools. Most software and hardware today is designed to be intuitive. There are numerous “how-to” videos readily available online, and a quick Google search will often return an easy solution. Requiring students to find answers to their own problems, even relying on peers for assistance, helps promote a culture of teamwork. Allowing students to navigate and learn their own tools is a great way to teach them the important skill of creative problem-solving. This is especially beneficial in schools that don’t have one-to-one device programs; students have to learn to use whatever tools are available to them (PC, Mac, tablet, smartphone, etc) more effectively.
Encourage Collaboration

We live in a world that is collaborative, but classrooms don’t always reflect that reality. Instead of creating singular, insulated assignments encourage students to collaborate. We don’t need to be an expert in everything. Instead, allow them to find the classmates, peers or online resources that can assist them.

Tech projects are a great opportunity to encourage students to learn real-world skills of working with others. At the end of the day, incorporating a digital curriculum is not about teaching students to use a particular device or piece of software. It’s about developing the skills necessary for them to be successful.

Conclusion

When properly channeled, creativity is like a magic bullet for boredom. It is kinetic and energizing. It makes students more adaptable – a vital quality in a world that is evolving so rapidly and in so many ways.

Technology supports creativity because it is a medium that requires interaction, unlike the one-way participation of an activity such as watching TV. When used correctly, technology is a platform that allows students to engage in meaningful creative activities and explore their own potential. It lets them learn through curiosity, collaboration, and critical thinking.

All of these tools of technology are creativity triggers that help students develop creative thinking and other essential skills. They are easily and freely available and teachers should readily adopt them into their academic curricula, so that their students never lag behind when it comes to creativity, since it is vital for their all-round development.

References


