



# Animation as an Art Form for Releasing the Creativity Potential among High School Students

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## Abstract

Creativity is multifaceted and may be expressed via linguistic, numerical, spatial, kinaesthetic, social, and even personal cognitive abilities (Gardner, 1985). Torrance (1966) stated creativity as the procedure of becoming aware of a problem, problems, gaps in expertise, missing components, disharmonies, etc.; identifying recognising the challenge; searching for solutions; making guesses or creating hypotheses regarding these deficiencies; trying out the theories; possibly altering and retesting theories; and finally interacting the results. Someone with a creative mind will naturally think creatively.

**Keywords:** animation creativity, children's author's animation technique, STEM education, children's giftedness, figurative thinking

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## Introduction

Creativity is "the ability to generate new, diversified, and distinctive ideas" (Leen et al., 2014), as well as "the ability to discover new things that did not exist before" (Leen et al., 2014). Thompson (2011) argues that teaching students to think critically should be a priority for educators at all grade levels.

Modern schooling and the shaping of children's identities. We now live in a world where science and technology advance rapidly, where children use technology and gadgets actively (even very young children), where distant study and communication, AI, and social networks are widely used.

Therefore, the methods that are based on information technologies but also have a chance for the development of children's

personalities have great significance. One such tool is children's animation creation, which includes kids working together to write, draw, and talk about their very own cartoon.

The assumption of the possible efficacy of animation creativity in developing children's giftedness depends on the fact that in the course of joint development of a cartoon, children display and develop multiple abilities when they create the script, pictures of characters, their characters and looks, as they participate in filming, montage, editing, and the presentation and promotion of the completed animated film. Children learn to communicate effectively with one another and with technological tools, to take turns talking and listening, to provide supporting evidence for their claims, to take ownership of group



projects, to divide and conquer tasks, and to see their original ideas through to completion.

Providing an environment in which a kid may learn research skills and form a set of value attitudes towards autonomous creative search is crucial for the development of giftedness in children. Everything that makes up a learning environment (data, people, tools, and physical locations) falls under this category.

Students who are able to think creatively have a better chance of learning effectively and acquiring in-depth knowledge, which may serve as the basis for the development of novel information, ideas, and products (Sdouh, 2013). The Microsoft company, the iPhone, and Facebook were all established by highly talented professionals: Bill Gates, Steve Jobs, and Mark Zuckerberg. Furthermore, it may encourage creative problem-solving in times of stress (Gibson, 2015). Inventors like PayPal's Elon Musk show that out-of-the-box thinking may lead to better results than more traditional approaches of redistributing wealth.

Due to the increased complexity of contemporary life, original thought is more important than ever to succeed on a global scale. The ability to think creatively relies on two distinct regions of the brain. Finding middle ground between reason and instinct is essential. Creative people have many tools at their disposal to deal with the challenges they face in the actual world. Creative thinking is important, thus the authors here make an effort to define it.

#### **“Associative Creativity Processes in Problem Solving**

Creative problem solving (CPS) is the association between problem solving processes and creative thinking (Kirton, 2003). CPS was developed in 1952 by Osborn (1957) who presented 7 processes of CPS which were:

- 1) Orientation
- 2) Preparation

- 3) Analysis
- 4) Hypothesis
- 5) Incubation
- 6) Synthesis
- 7) Verification”

The latest CPS process however consisted of 4 main steps and 8 minor steps which were:

- 1) Comprehension of the Obstacle: Establishing Possibilities, Investigating Data, and Defining Problems
- 2) The process of idea generation
- 3) Getting ready to take action: creating solutions and gaining buy-in
- 4) Strategy development include evaluating projects and developing a plan of action (Isaken et al., 2003).

Students need the ability to think creatively and critically in order to take advantage of diverse, multifaceted possibilities and overcome difficult problems. They may have far-reaching, beneficial effects on students' personal lives and careers, in addition to preparing them for the increasingly complicated problems of the workplace. Students who are well-versed with CPS technologies and proficient in their usage open up a world of new possibilities for themselves, learning more about their interests and building skills that will help them excel in their chosen fields.

#### **Creative Thinking and Creative Analysis**

In discussions about the most formative educational experiences someone has ever had, creative learning is often mentioned. When individuals make use of their imagination, they report improved health, happiness, and productivity (Treffinger, 2001).

According to Santrock (2009), the first step in any sort of creative thinking is examining the data at hand and drawing a conclusion. Students' capacity to think critically and creatively must begin with the development of these skills (Songkram, 2015). Students are better equipped to appreciate and grasp the



standards when they possess the ability to think creatively on their own. The end result might be the development of their logical thinking, decision-making, and creative abilities. One of the most efficient ways to stimulate students' imagination is to include problem-solving activities into their coursework (Silver, 1997). It helps students evaluate data via careful thought and analysis, and it aids them in tracking down the root of any issues they encounter (Aka, 2010). Students that are able to think creatively solve issues more quickly and effectively (etinkaya, 2014).

Making sure students can understand the material being covered in class relies heavily on the teaching and learning process. Planning, managing, delivering, supervising, and evaluating a lesson involves all facets of teaching. As a means to streamline the dissemination of knowledge, online education has emerged as a novel approach to classroom instruction. To learn virtually is to do so via the use of electronic media and the World Wide Web.

E-Learning, short for "Electronic Learning," is a novel approach to education that makes extensive use of digital technologies and resources, most notably the World Wide Web. Electronic multimedia, with its capacity to show text, video, audio, and animation in a wide variety of colours and styles, at the same time, may be a powerful communication tool. Teaching aids, for example, may be used to convey this kind of information or instruction. Students are more likely to pay attention and retain information when teachers use effective teaching aids during instruction. Teachers may do a better job of conveying the idea to their students using video animation and other visual aids than they could by just talking about it. Some topics, like engineering drawing, lend themselves well to hands-on, practical instruction, and might benefit greatly from this kind of creative thinking on the part of instructors.

### **Traditional Versus the Modern Teaching Stream**

Historically, classrooms have revolved on the instructor and the use of textbooks. belief that pupils would struggle to learn independently if they are only exposed to "chalk and talk" style instruction. Therefore, this method has to be enhanced so that students are actively engaged in the learning process and contribute to finding solutions to problems. The need of ICT in education stems from the fact that technology may help teachers communicate their material more effectively and pupils retain more of what they learn. Because of the central role that computers play in the modern classroom, educators need to acquire a wide range of computer skills.

In technical and vocational education in particular, the use of wireless devices has greatly altered traditional teaching techniques by making it possible for students to study anywhere and at any time. Azman et al. (2014) claim that the more senses that are engaged, the greater the impact on learning. The theory put out by Azman, et al. (2014) that each sense elicits a unique emotional reaction. Each sense helps fill in for the others and improves upon their weaknesses.

Educators of all stripes benefit greatly from the use of instructional materials, but especially those in technical fields. Teachers have a duty to make effective use of these tools in order to better comprehend their students' needs and interests and to better convey to them the ideas and information that will be covered in the courses they provide.

Students' mental load will increase if they are required to learn via static medium like text, which is already high due to the complexity of engineering drawing material (Baggott et al., 2007). Given their limited working memory, students will struggle to attend to both the course material and the answer to a challenging homework problem. As a result, confusion



reigns as students attempt to make sense of the data presentation issue (Yap, 2012).

Teaching techniques have a significant impact on students' ability to acquire and comprehend material, hence this is a problem that has to be resolved. Students have trouble comprehending engineering drawings owing to poor visualisation skills, according to research by Yasin et al., 2012. According to Gani, Siarap, and Mustafa (2006), incorporating new forms of technology into the classroom has the potential to improve students' performance in the classroom. Textbooks and tried-and-true classroom techniques have long been staples of education. The prevalence of boredom among today's pupils has diminished their motivation to study.

#### **Animation as an Art Form**

The created instructional video animation should have a visually pleasing layout. The visual category of students is well-suited to the use of images, graphs, diagrams, films, and demonstrations. Multimedia tools, such as video animation, may boost students' interest in learning and their capacity to retain new information. Students will have a much better and more efficient time studying from this animation film. According to Embong, H. (2005), high-quality animation helps students learn new material more rapidly, remember it for longer, see it more clearly, and grasp its meaning more quickly. The findings from the survey indicate that this animation video's design is appealing, and the respondent has given their approval. The responder has shown strong agreement that the video animation would aid comprehension.

Overall, this presentation video animation's design is top-notch and deserves a high mean score. This inferentially addresses the study's first question, since it demonstrates that the preexisting design presentation video animation is suitable for use as teaching aids for topics and Engineering Drawing.

Researchers have done an evaluation of video animation utilising two tests, the alpha test and the beta test, to guarantee that the video was made capable of aiding in increasing the imagination and visualisation of pupils. The next stage of testing for video animation is the beta phase, once the alpha test has been refined. In a beta test, participants are selected at random. The beta testing revealed that the quality of the video animation was quite excellent. The results of this beta testing suggest that this animation movie is suitable for its intended audience and can effectively address the issue of pupils' lack of creativity and visualisation. After a successful beta test, several tweaks were made to the video animation to make it more student-friendly.

Interactive visual graphics, text, music, video, and animation are all examples of multimedia components that may be used to educate students by tapping into their sense of imagination and creativity. Teaching and learning sessions may be made more engaging, creative, and inventive by including multimedia aspects, as stated by Sardone, & Devlin-Scherer (2010). Respondents are in agreement that this animation may help pupils enhance their visualisation and creativity, according to research into the creation of video animation. Agustini and Kristiantari (2016) claim that showing students animated videos helps them visualise concepts better.

#### **Animation as a Teaching Learning Initiatives**

The potential of technology-based instruction to improve pupils' overall performance in the classroom is irrefutable. The research shown that the quality and efficacy of a manufactured animated video are both high. It has been shown that a learning environment built on multimedia is more engaging than one based only on textbooks. Research has demonstrated that pupils may benefit from the use of video animations in the classroom. The use of animated videos is a departure from more



conventional teaching methods. This is due to the fact that using video animation facilitates the benefit of revisiting a subject that is not grasped by the pupils.

Students, particularly those majoring in computer network engineering, need to be able to think beyond the box. Students who are able to think creatively may find more success in fixing a wide range of network and programming issues. The goal of this study is to develop animation-based multimedia tools for fostering original thought.

Positive findings were found between the pre-and post-tests, with an N-Gain increase of 0.48 attributable to the study progress. Based on their evaluations of the animation's mechanism, multimedia element, information organisation, documentation, and content quality, the students conclude that animation-based multimedia is doable. There has been a rise from 39% to 71.25% in students' levels of creative thinking. The results reveal that students have gained knowledge via animation-based multimedia and improved their capacity for original thought. Nonetheless, it is still necessary to provide pupils with some kind of impetus in order to foster the growth and development of their creative thinking abilities.

Research shows that by incorporating creative problem solving (CPS) into other topics, students' ability to think critically and come up with original solutions to problems is enhanced.

### Conclusion

Students' capacity for creative problem solving and structure visualisation may be aided by the growth of video animation. This animated film may help kids better grasp what their teachers are teaching them by combining text, graphics, animation, music, and video in a way that is both engaging and inspiring. Furthermore, the success of a process of teaching and learning is intrinsically linked to the accuracy and suitability of the teacher's media choices. The

objective of developing video animation is to assist students enhance their creativity and visualisation, thus the user-friendly elements discovered on this can simplify student operation.

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