# AN ANIMATION IS PLAYING SIGNIFICANT ROLE IN EDUCATION

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**ABSTRACT**

Computer animation possesses a positive effect and impact for memorizing knowledge by students. Use of animation in teaching especially for technical and practical subjects, it is conducive to the development of mind. Animation makes it possible familiarizing students with the schemes of solving technical problems as well as shown the technique of operation of machinery and equipment. In the technique, animations are used, inter alia, in the procedures of designing, engineering calculations, visualization and monitoring technological processes and also visualization of assembly processes.

This article discusses the role of computer animation in the teaching process in school education and of course the examples of applications using computer animation and more than that supporting the teaching process of technical subjects.

**Keywords: - Animation, Teaching Materials, Innovation, Education, Classroom etc.**

## 1. INTRODUCTION

Today it is feasible to use a wide range of teaching materials in the teaching process to reinforce the work of a teacher and facilitate memorizing the material by students. It is worth noting that in addition to the development of technologies in education the innovative solutions regarding the transfer of knowledge are being introduced. A large number of teachers use computer programmers which familiarize students about the solutions for solving typical issues which are encountered in the classroom and help them deal with problems in both everyday life and also a future career.

The learning process is influenced by a number of factors. Human mind develops during the course of the performance of brain-training exercises. Skilful brain-training exercises have an influence on the rapid process of remembering.

The human brain is comprised of two hemispheres. The right hemisphere is answerable or responsible for creative thinking or spatial imagination, whereas the left hemisphere is responsible for logical thinking. In

the teaching process, it is necessary to introduce visual elements that will actually help and develop the right hemisphere, but additionally mathematical elements, logic puzzles, geometric shapes, etc., which reinforce the development of another hemisphere. These types of solutions affect the so-called brain synchronization and thus its development, faster mastery of knowledge and the process of understanding the issue and problem **(Anderson 1997 and McCleary 2010).** For that reason, solutions supporting the development process are kept in the teaching process. A good example of such a solution is computer animation. Making use of it in the process of teaching facilitates students' remembering the material and giving them a general idea of a specified issue.

The use of computer animation in the school is broad. In practice, most of the schools in urban areas use the animation technology to educate the children. Computer animation is now a rapidly developing field of education that has found wide application in many fields of science.

## 2 COMPUTER ANIMATION FOR TEACHING IN VARIOUS SUBJECTS

Computer animation is basically a process of creating a series and a sequences images appearing one after another synchronized into a single whole and causing the so-called image animation effect. Animation exhibits the mode of functioning or performing of many elements. It has wide application in the processes of the teaching of various technical, medical as well as natural science subjects. Still, the image is more and more frequently substituted by a picture that changes eventually – animation – while presenting different kinds of content. In technical disciplines, computer animation is used, inter alia, to teach subjects related to material science, both engineering and utility graphics, fundamentals of machine design, automation of processes and production engineering (**Dziedzic, Barszcz, Paśnikowska-Łukaszuk, &Jankowska, 2015**).

It shows the way of function of many machines that make it easier for students to design such machinery, join its parts into a single unit, assemble, etc. also Animation can easily be used to present various kinds of processes, for example, the process of wear and tear of elements, processing, and monitoring processes. In this manner, a student has a general idea of how many devices work. It is worth noting that the introduction of tasks aimed at obtaining animated elements by the students into the process and technique of education fosters the development of their both technical and spatial imagination **(Lis, 2014 &Montusiewicz and Dziedzic 2011).**

Also in education of students of medical courses relating to biotechnology and biomedical engineering, computer animation is applied in the presentation of the processes of the body's internal organs, the way of moving and functioning of the human body, affected with the use of medical devices and more than that mechanisms replacing human organs or parts of the body (artificial inserts, bones, screws). It should be also mentioned that students of such courses use simulation process related to animation as well in the course of virtual operations.

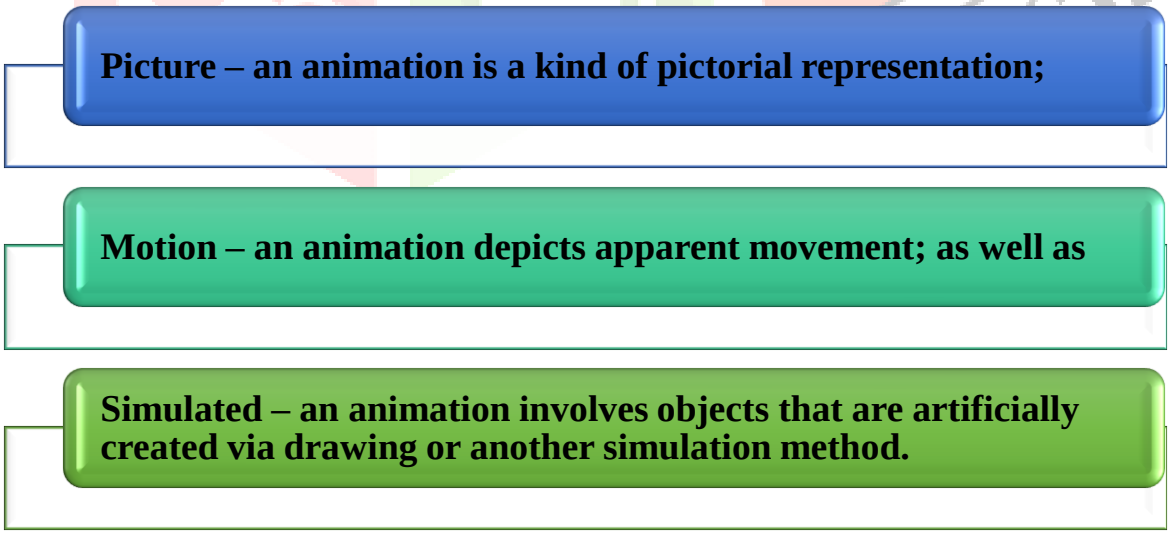
The animated games are likewise an excellent tool for everyone, especially elementary-school child, for arithmetic game wherein elementary-school children understand and learn how to add and subtract signed numbers by moving a bunny through number line **(Moreno and Mayer, 2000),** as well as a botany game in which high-school and college students design plants to survive in quite a lot of environments **(Moreno 1990, Mayer and Moreno et al., 2000).**

To be quite clearly pointing out, in the botany game students communicate with an animated pedagogical agent named "Herman the Bug" who takes them on a spaceship to a new planet. The planet has some certain environmental characteristics such as low sunlight or heavy rain, and likewise, the student is asked to design a plant that would survive along with selecting the appropriate and suitable kinds of roots, stem, and leaves (with eight alternate options for each).

Herman provides help by displaying an animation of plant development while verbally describing exactly how plants vegetations crops etc grow. Students traveling to numerous different planets, get to design a plant for each, and then subsequently be able to get to find out if it survives. As a test of understanding, our transfer test entails designing plants for new environments as well as telling which kinds of environments is given plant for most suited. The score depends on the frequency of correct answers the student gives across the transfer problems.

## 3. ROLE OF ANIMATION IN LEARNING

Probably the most exciting as well as interesting ways of pictorial presentation is animation. Animation can be defined as a simulated motion picture depicting the movement of drawn (or simulated) objects. The primary components of this definition are listed below:




In comparison to, video can be defined as a motion picture depicting the movement of real objects. Moreover, an illustration is a static picture of drawn (or simulated) objects however a photo is a static picture of real objects.

When using entertainment, an animation can be called a cartoon, nonetheless, in the sense of learning, author concentrate on the potential of animation as an educational tool. Animation having a few questions which can include Does animation promote learning? Do students discover more from animation than from different modes of presentation? Should we increase the use of animation in educational programs? These questions fit within a classical tradition of media research, a situation in which the goal is to determine whether students learn better with one medium rather than another. Despite this, media researchers have determined that media research questions similar to these are largely fruitless **(Clark, Kozma, Ross, Salomon, 1994).**

## 4 IMPORTANCE OF ANIMATION

The animation is perhaps the most effective and versatile and for that reasons most powerful tool which can use to communicate abstract, delicate, hard, simple, and multiple activity concepts.

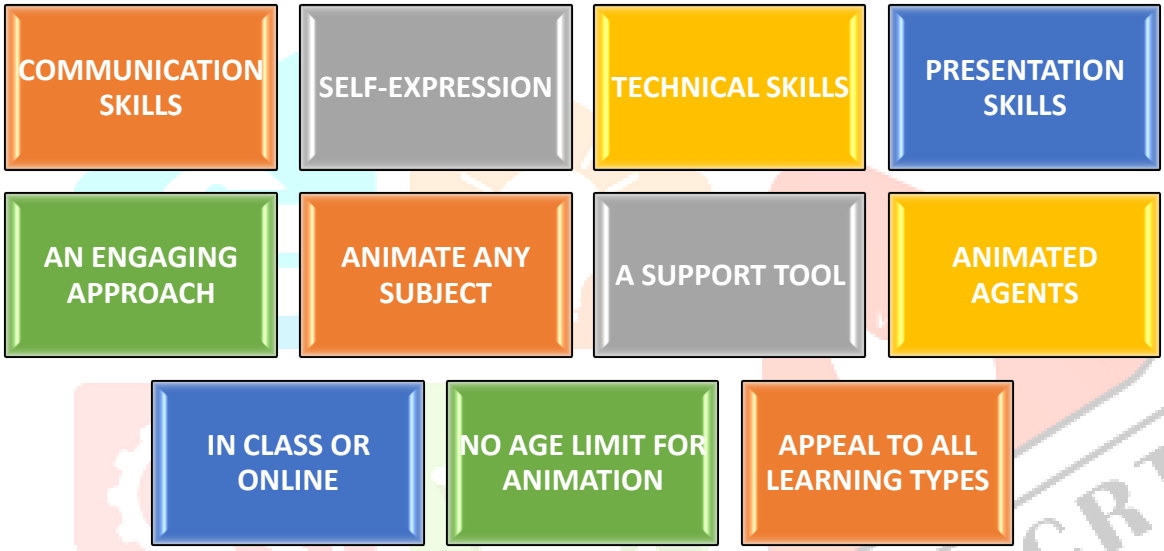
As an academic tool, animation merely has few peers. Viewing or making animation immerses participants into ideas by directly partaking their personal imagination, as animation itself requires a suspension of belief, which is the fact that the participant actively accretive the animated reality as containing a message they actually listen.

Additionally, the animation may be accustomed realistically depict not possible events, likewise as convey deception through realistic modification of actual events, or compositing of actual events to make depictions of events that do not occur.

The animation is powerful communications tool that unconsciously places many folks in a susceptible state, reinforcing the necessity for crucial reasoning in education. Ironically, one gets forcefully educated in significant reasoning once the following animation as a vocation.

## 5 REAL BENEFITS OF USING ANIMATION IN THE CLASSROOM

With the spectacular popularity of the cessation kineticism animation kits with students, the animation is becoming a lot more facile and more facile to do in the classroom as well as at home. Although while the process is getting more facile and more frugal, some edifiers are a little torn over the utilization of animation in the classroom – lots dote it but sometimes people feel it can be a time-consuming and waste of precious classroom hours, with students spending a long time idealizing one of the things that they don't believe has astronomically immense edifying value. As a matter of fact, there are fantastic concrete reasons to take advantage of the massive range of animation implements around categorically for use in an edification environment. Here are just some of them.




### 5.1. COMMUNICATION SKILLS

The traditional pen and paper essay-indicting format are not beneficial for every student. The animation is a wonderful and also innovative incipient way for en-hearten children to communicate stories, conceptions, and concepts in an ingenious and pristine way. It can be categorically utilizable as an implement to embolden the ingenuity of students who find spelling and grammar a challenge; because it liberates them from the solicitousness of always worrying about technicalities and enables they just to focus on the story instead. Domo is great animations implement to inspirit students to get commenced, as it provides a clear, colorful cartoon environment but withal introduces yare-composed characters children can relate additionally, along with their own personalities as well as habits, which give a subsidiary springboard to possible plot conceptions. A further brilliant storytelling implement is Myths and Legends, which sanctions the students to engender animations for well known historical stories and myths, with the extra integrated bonus that they can

additionally record a narration soundtrack to play over the top, integrating a whole incipient caliber of ingenuity and communication practice! Edifiers have to sign up first to engender an account for students to utilize.

### 5.2 SELF-EXPRESSION

For some understudies in schools, self-expression can be a major test, and moreover, customary strategies for craftsmanship, an example, drawing, and painting, while gigantically charming for a few, can feel troublesome and stressing for the individuals who do not really have an immense measure of common masterful ability. In any case, the magnificence of liveliness is that instant characters can be set into pre-drawn conditions, while studies still keep the inventive reins by picking everything from plot to discourse bubbles. Locales like the Zimmer Twins are an astounding case of this impeccable harmony between prearranged materials and bunch of free innovative decisions. Even better, it has an uncommon site planned particularly for use in schools, with class administration instruments worked in for instructors.

### 5.3 TECHNICAL SKILLS

While there are a number of tremendously simple animation tools available for kids, it can also be a great gateway for older students to learn much more difficult technical skills too. With the assistance of animation tool, students can easily expand their technical skill set in the various field. The Animation is the best example – it allows students to use algebraic and calculus functions to create 3D animations and likewise teaches them a range of useful computer skills. A guide is available to download so students don't have to be experts before they begin. A student can easily understand the practical scenario of any project.

### 5.4 PRESENTATION SKILLS

Another crucial fact about animation is that it gives an energizing and dynamic stage to urge students to give intriguing, drawing in class introductions. Gone are the times of understudies nodding off behind the class while their colleagues stayed at the front of the room, perusing from a sheet of paper! The animation is a great way to encourage students to put more noteworthy exertion into their introductions, making slide appears, visual clarifications of ideas and truly outwardly associating with their group of onlookers, an awesome ability for what's to come. The fantastic Go Animate for Schools site is particularly intended for this sort of work and gives a sheltered, secure condition particularly made for use in schools.

## 5.5 AN ENGAGING APPROACH

Animated video has been utilized over a wide scope of subjects, to advise and clarify. This is regularly done by making an essential story or idea, or by clearing up confounded subjects with the utilization of pictures, development, sound, and content.

Animations have ended up being especially valuable when something is not effortlessly appeared as a general rule. Impalpable wonders, for example, virtual mists can be specified significantly more obviously with a captivating animated concept.

One of the best advantages of movement is that it is uncommonly adaptable, flexible, additionally, does not limit the creative ability and does not restrict imagination. The utilization of a block divider to symbolize a firewall in an intricate clarification of figuring can do ponders for instructing the subject and making it memorable.

## 5.6 ANIMATE ANY SUBJECT

Science is usually a difficult subject to teach and learn due to the fact that many things cannot be shown in an actual scenario. When cells are animated, their interaction with others could be made clear, to make the explanation of a biological, thematic and technical process far simpler. Relationships in between phenomena can also be shown plainly. As shown the animation of Sunflower in figure 1. How does it intakes sunlight, intake carbon dioxide and release the oxygen? All the combination of water, sunlight carbon dioxide, and oxygen.

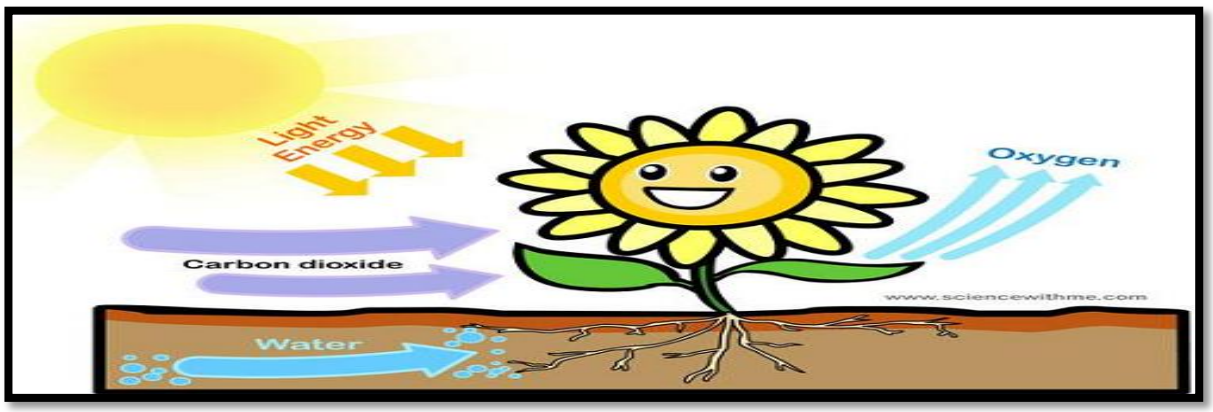



**Figure.1**

For teaching history, geography a distinct approach and methods may be required. We cannot exhibit our class how the Battle of Hastings going in reality, but we can easily provide an engaging animated representation of key events.

Animation can regularly be more captivating than cutting-edge video, with imaginative pictures frequently making them more important, as well. Dynamic substance, for example, changes after

some time, can be successfully spoken to with an enlivened video. The key moments in a historical timeline can be shown, as can the month to month workings of the female conceptive framework.

## 5.7 A SUPPORT TOOL

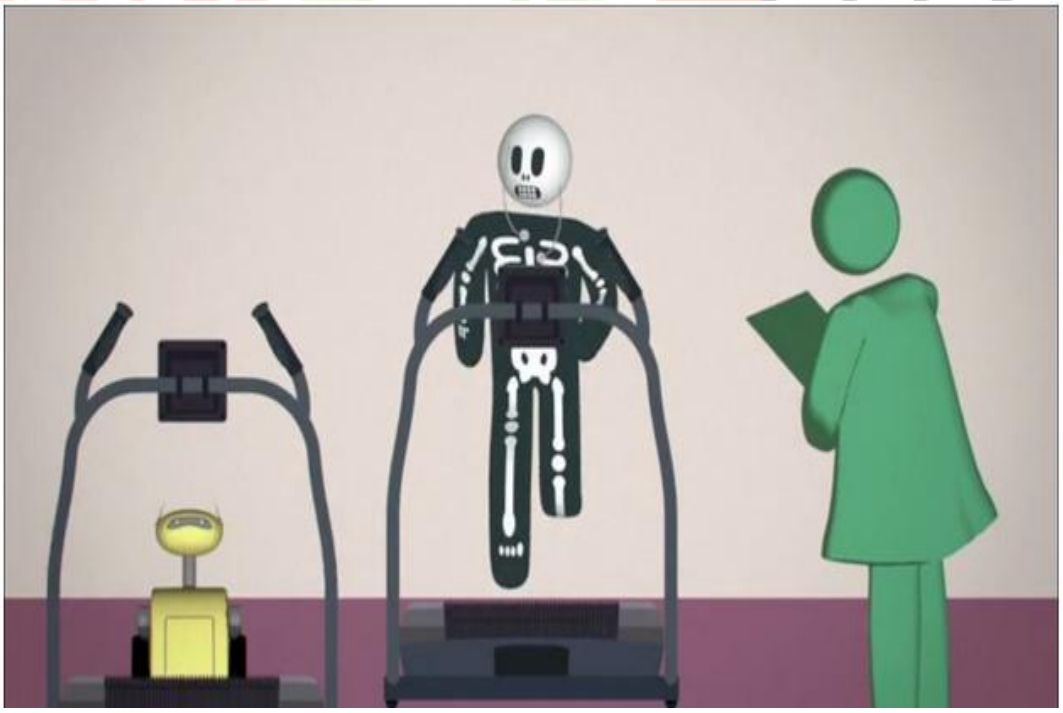
Animated video is one while utilized as a sole medium for instructing; nonetheless, as a support tool for other showing techniques, it is profoundly valuable. It's additionally helpful for showing more dull or complex points or providing a memorable summary. Activity can expand inspiration and fulfillment levels in learning, given that students' past level of comprehension is considered. For a few subjects, adequate foundation learning might be fundamental for greatest advantages to being accomplished

Regular characters in each and every video can make the learning knowledge more ceaseless and provides a steady stage to learning. Actually, even one short video can be sufficient to include our class in an enlivened idea or story and inspire them. This can expand their memory of lessons adapted essentially. The enlivened characters and pictures that students get comfortable with can then be exchanged crosswise over other instructing material to give advance consistency.

## 5.8 ANIMATED AGENTS

Animated agents **are graphical representations of characters used in computer applications.**

Using characters symbols– also referred to as animated agents – to present topics, monitor student progress and provide feedback has grown, particularly online.



This Agent – which can be in any shape or frame, from similar individuals to quirky outsiders – can guarantee preceded with nature all through a whole course. This is especially helpful when classes are vast and educators are not generally available for each understudy. A well-known and drawing in vivified specialist can give a bolster that keeps students on track and roused.

## 5.9 IN CLASS OR ONLINE

One of the incredible points of interest of Animation in instructing is that it is a drawing in strategy that can be grasped for any subject and from any area. Regardless of whether working in class, in the library or at home, if the student has admittance to successful enlivened recordings they can be roused to learn and move forward. This likewise enables them adaptability to advance at their own particular pace.

Notwithstanding encouraging free learning, animation gives a wonderful and quiet condition in which to learn. The general instructive experience can be made more pleasing on different levels.

## 5.10 NO AGE LIMIT FOR ANIMATION

There is no age boundary for the utilization of animated video – it can be utilized ideal for little children, crosswise over the essential and optional school, crosswise over to adulthood. The rising number of well known animated TV arrangement for grown-ups shows this is a medium that can be similarly as engaging possibly the most seasoned of our students as it is to more youthful kids. Different methodologies can be taken for each age gathering; in spite of the fact that, utilizing comparable methodologies can be effective as well, as this can empower memory of something educated in earlier years. Those animated pictures going with music, accounts and sound impacts can be unfathomably capable. They fortify different faculties and parts of our brains at the same time. This implies they are charming to watch, as well as can trigger memory and positive relationship in future.

## 5.11 APPEAL TO ALL LEARNING TYPES

The multi-tangible part of activity additionally makes it speaking to an expansive scope of learning sorts. All holes in instructing could be shut with this enamoring tool. All around planned, adequately executed energized recordings that are upheld by other showing devices can possibly enhance and upgrade learning potential for students no matter how we look at it.

The animation is being used to teach in ways that were not previously possible, and its potential continues to increase. Now it is as good time as any to embrace this innovative tool, ride the wave of progress and watch as students thrive.

After study the role and impact of animation education for students it concludes that students learn more deeply from animation and narration in comparison with from narration alone. The theoretical rationale for this principle is that students are much better able to build mental connections in between appropriate words as well as pictures when both are presented (i.e., animation and narration) than when just one is presented (i.e., narration) and of course the learner must mentally create the other. In all of four experiments, adding a pictorial explanation (i.e., animation) to a verbal one (i.e., narration) resulted in a substantial improvement in learners' problem-solving transfer performance. The median effect size was 1.74, indicating a powerful and consistent effect.

**CONCLUSION**

Through this article, animation-enhanced student understanding of scientific explanations of how pumps work, how brakes work, or how to add and also subtract signed numbers. Briefly, this research has consistent evidence regarding the multimedia principle that words and pictures are much better for promoting learner understanding than are words alone.

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