



Bringing Life into Classroom Using Animated Videos

Dr. Pawar Gopal Ramrao

Principal

SVSPM, Swami Vivekanand College of Education, Udgir., Dist. Latur

Dr. Tele Shahaji Sopan

Assistant Professor

SVSPM, Swami Vivekanand College of Education, Udgir., Dist. Latur

Dr. Gadekar Rohidas Jayaji

Assistant Professor

SVSPM, Swami Vivekanand College of Education, Udgir., Dist. Latur

Abstract:

Creating animated videos is a fantastic way to capture students' attention and make learning more engaging. Whether you're illustrating a complex concept, telling a story, or providing instructions, animated videos can bring your lessons to life in a way that static images or text can't. The education policies time and again, stressed on child centered pedagogical approaches to ensure that the aims of education are achieved. There is a need to bring life in the classrooms. Animations provide a great solution to teachers to create learning environments that provide opportunities of interaction and analysis. The present paper provides a theoretical framework of bringing in animation into the transactional process of curriculum.

Keywords: *Animated videos, creating an Animation, Engagement, Visual learners.*

Introduction

Aristotle while distincting living from inanimate said that what differentiates later from former is psuche. The word *pusche* can be variously translated as soul, breathe or life. Hence 'making things move' is what animation is all about. Literally it means, to breathe life into something Illustrators create action from series of images creating an illusion of something living

Report of the European Cultural Foundation (1973) Animation is that stimulus to the mental, physical, and emotional life of people in a given area which moves them to undertake a wider range of experiences through which they find a higher degree of self realization, self expression, and awareness of belonging to community which they can influence Building environments and relationships in which people can grow and have a care for each other is what animators carve for making it closer to informal education In a book entitled *Working with experience, Animated learning* by Davind Bond and Nod Miller (1997) animation word is used in connotations to give life to, to quicken to vivify to inspire. They see functions of animators to be that of ‘acting with learners or with others, in situation where learning is an aspect of what is occurring, to assist them to work with their experience’.

Creating stable images which show an object in a movement and to direct us to think as if it moves by the help of playing these images one after the other has been its traditional concept. In traditional frame by frame animation, the illusion of motion is created by filming a sequence of hand painted cells and then by playing the images back at high speeds, typically 14 to 30 frames per second.

Creating An Animation

As it is understood from the definitions, it is necessary to create image frames related to each other to form an animation. Prior to computer animation, every frame was drawn one by one and then painted by hand on paper, celluloid or film. The assistants use to help the experienced animators by drawing and painting the in between frames to complete the movement. However as evident that with this method creating a 3- 4 mins animation was a mammoth task and time consuming too. Photographing each frame with movie camera was too an expertise task.

Popularity of animation created a way to the introduction of technologies in animation. But even with the introduction of computers due considerations were given to the traditional point of view. Development was made in transferring two dimensional animation productions to computer in term of time and technical easiness.

In 2D animation drawings were made with the help of digitalizers on a computer screen and not on paper or the transfer of handmade drawing on paper could be done with the help of scanners. Further some forms of drawings as square , circle , line and artist tools like paint brush , eraser etc. were available in the computer at the end the user could get an outcome for his / her animation through a printer .

Projection two dimensional pictures on after the other which is rendered in the terms of width, length and depth in the space supplied by the computer software gives birth to 3 D animation. The computer as per the demand calculates the details like movement, color, light and perspective of the objects on the created

visual stage accurately and gives outcome as an image. Even for an excellent animator three dimensional images and their movements are a serious challenge. Computers come handy here, giving ample time to the animator for creative thoughts and to produce different alternatives.

Following examples duly explains the handiness of Computers in animation

- Creating images that cannot be filmed by the camera, like DNA Structure.
- Creating images that are not possible to obtain in real life, like landing on earth on from outer space, landing on moon etc.
- Producing high cost and danger involving events, like Bomb Explosions, Mine Explosion, Fire Accidents etc.
- Reproducing art works where original has been destroyed, like original works in historical monuments destroyed in attacks.
- Transforming complex events into basic graphical expressions, like diagrammatically representing working of the Heart.
- Producing moving images from graphical materials , still photographs
- Describing Natural and supernatural phenomenon, Tsunami, Eruption of a Volcano, Haunted Houses etc.
- Animating imaginary and mythological heroes , Like Hanuman in Bal Ganesha
- Simulation of Laboratory Experiments , like Archimedes principle
- Producing images which look original
- Transforming the abstract Thoughts into concrete images, like Rotation, Revolution of Earth.

In today's classrooms, technology has become an essential tool to enhance learning, and animated videos are one of the most engaging resources at your disposal.

If you're looking for ways to keep your students' attention, make difficult topics easier to understand, or simply add a fun element to your lessons, animated videos for students can be a game-changer.

Let's dive into the usefulness, common concerns and practical solutions for incorporating animated videos into your teaching.

Why Use Animated Videos in the Classroom?

Animated videos are versatile and can appeal to various learning styles. They help break down complex concepts into digestible, visual chunks, making learning more accessible for students.

These videos are particularly useful for:

- **Visual learners:** Seeing information visually can help some students grasp ideas more quickly than listening to a lecture or reading.
- **Engagement:** The bright colours, movement, and characters in animations can capture students' attention and keep them interested in the material.
- **Simplifying abstract concepts:** Animated videos for students can illustrate ideas that may be hard to explain using only words. For example, topics like cell division, historical events, or mathematical theories can be brought to life with animations.

However, like any tool, the effectiveness of animated videos depends on how you use them. Let's tackle a few common concerns.

Will My Students Really Learn from Animated Videos?

This is a valid concern. Not all videos are created equal, and you want to make sure that the videos you show enhance understanding rather than simply entertain.

Solution: The key here is **purposeful selection**. Choose animated videos for students that align closely with your learning objectives. Consider looking for animations that:

- Clearly explain or demonstrate a concept.
- Have a narrative that walks students through a problem-solving process or sequence of events.
- Include visuals that support the material you're teaching.

Make sure you preview the video beforehand and think about how you'll connect it back to the lesson. For example, after showing the video, ask students to summarize the key points or apply the concepts to an activity. This way, you ensure they're learning actively, not just passively watching.

Won't Showing Videos Cut Down on Valuable Class Time?

It's understandable to feel like time spent watching videos could take away from discussions or hands-on activities, but in reality, a well-placed animated video can actually save you time.

Solution: Animated videos for students are most effective when used to introduce or reinforce key concepts. Instead of spending a lot of time explaining the same concept over and over to different students, an animated video can serve as a **visual aid** that simplifies explanations. Plus, they often condense complex information into just a few minutes.

Think of them as a **teaching assistant**: they can do the heavy lifting of explaining challenging topics, leaving you with more time to engage students in deeper discussion, group work, or hands-on activities afterward.

How Do I Keep Students Focused During Videos?

It's easy for students to zone out during a video, especially if they're used to watching cartoons for entertainment at home. How do you keep them focused?

Solution: You can keep students engaged by turning video-watching into an active learning experience. Here are a few tips:

- **Set clear expectations:** Before starting the video, tell your students what you want them to pay attention to. For example, say, “As you watch, think about how the animation shows the steps of the water cycle.”
- **Pause and discuss:** Don’t hesitate to pause the video at key moments to ask questions or clarify points. This will help ensure that students are processing the information as they go.
- **Interactive follow-up:** After watching, ask students to discuss in pairs or small groups what they learned from the video. You could also assign a short written reflection or quiz to assess their understanding.

Where can I find the right video?

Finding the perfect video that matches your lesson can be **tricky**, and we’ve all experienced the frustration of combing through online resources with little luck.

There are plenty of great resources out there for teachers looking to incorporate educational videos into their lessons.

Let me walk you through the five YouTube channels by iPrep, each packed with lessons, activities, and helpful content that you can easily integrate into your classes.

1. **Science by iPrep**

Science by iPrep offers a range of animated videos for students that break down complicated topics into bite-sized, easy-to-understand lessons for Classes 11th and 12th.

Topics Covered:

- **Physics:** From Newton’s laws to rotational motion, this channel has videos that explain even the most daunting physics topics in a simple, engaging way.
- **Chemistry:** Struggling to explain chemical reactions or the periodic table? These videos make it easier to visualize complex concepts like chemical bonding and atomic structure.
- **Biology:** Explore animated lessons on cell structure, human anatomy, and genetics, making these otherwise abstract concepts come alive for your students.

Why It’s Helpful for You: Imagine walking into a class, playing a short animated video on the structure of DNA, and instantly grabbing your students’ attention. With visually stimulating content, these videos can act as a quick introduction or a recap of difficult topics. They’re also ideal for reinforcing concepts in a fun and memorable way.

Animation Usage In Educational Programmes

Computer animation shows itself in different fields everyday .Remember Dinosaurs in Jurassic park, logos jumping in TV commercials, it is all animation. Briefly , the main fields using animation are advertising , architecture , art , archeology , chemistry , education , engineering , entertainment and games , movie , flight simulation , law court , medicine , military , multimedia , scientific animation ,simulation , space searches , video and television.

Animation is an audio visual material since it can be supported by sound. Audio – visual materials have these five features

- i. Capability of improving perception
- ii. Capability of improving understanding
- iii. Capability of developing learning transfer
- iv. Capability of consolidating obtained learning results
- v. Capability of helping to keep the learned knowledge in mind.

The main reason of using audio visual material on television educational programmes is to contribute effectively for the students to make real their learning objects. (3) It become

Inevitable to use animation in education field since it includes audio visual material's determined capabilities. The idea of benefiting from animation came to an upper level as animation has the ability to show events that cannot be obtained in real life and the ability to show some events step by step.

Animation And Television Educational Programmes

The fields of usage of animation on TV educational programmes can be determined as follows:

- i. In the credits of TV education programs
- ii. Inside the TV programs
 - a. Visualized events that cannot be filmed with a camera in real life
 - b. To bring alternatives to productions, which can be dangerous and high cost involving
 - c. To describe the abstract thought in a concrete form by using features of realistic or graphical expressions
 - d. To attract the attention of the audience by giving richer expression to its ordinary way
- iii To use animated images instead of a real narrator.

iv To reproduce the whole stage that the narrator will take part or to give motion the moving accessories on stage .

The animation presentations, in terms of visibility, attractiveness, arousing attention, easiness in perception and learning become so effectual that TV program can be presented in an interactive and interesting way by getting rid of the manner, which bores the students.

The Value of Animation in Learning

Researches have shown that visual perception is the most developed sense in humans and is an important way by which we learn (Sekular And Blake, 1985). Vision allows us to collect and process information from our environment and to make decisions or form concepts from that information. As visualization aids student understanding of complex processes by assisting the conversion of an abstract concept into a specific visual object that can be mentally manipulated, it come as a handy tool in education. Further research has shown that by using well-designed visual tools, students can digest large amounts of information in a relatively short time and construct their own personal visualization of a process (Kraidy ,2002 ; Linn et.al., 1996)

Visualizations that augment the information presented in text by providing a focus for the learner are known as graphic representation (Mayer, 1989). They are most effective when they support content for which the learner has little prior knowledge (Mayer and Gallini, 1990). Computer animation, in particular, is a new educational tool that fosters long-term learning by calling attention to objects during the early steps of instruction (Gagne, 1985; Reiber, 1994).

Rieber (1994) demonstrated that using animations to communicate ideas and processes that change over time reduces the abstractions associated with the temporal transitions of the process. The value of graphics appears to be associated with the dual-coding theory (Paivio, 1979, 1991), which suggests that long-term memory retention is facilitated by a combination of verbal and visual cues. As such, animations are valuable aids in supporting the visual aspects of long-term memory. Furthermore, by combining narration and animation, dual-coding is further supported (Mayer and Anderson, 1991)

Motion leads to longer-term memory, an effect not observed with static images (Goldstein *et. al.*, 1982)). This result is most dramatic for individuals who have difficulty grasping spatial relationships (Blake, 1977)

Students may learn more from animations than from static images, but this is maximized by lesson plans that include lecture and other learning inputs (Rieber, 1990). According to the dual-coding theory (Paivio,

1979, 1991), learning is best achieved when an animation is coupled with a lecture, because this combination provides a reference from which students can appreciate the knowledge presented in the animation. The lecture cues students while they are studying the animation.

Animation In Classroom

Visualization is a valuable tool in learning scientific topics (Gordin and pea ,1995) because it helps learners with important conceptual relationships (Brodie *et. al.*,1992). In the modern classroom, the teacher uses several visualization tools while teaching. By drawing on a blackboard or overhead acetate, attention can be drawn to the structures or molecules involved in a process. This is certainly useful for naming the components and providing a rough approximation of their relative orientation at the beginning of a process. But this approach is not effective when we attempt to illustrate how these molecules or structures interact. After all the details of the interaction are illustrated on the board, what often results is an unordered drawing consisting of a complex series of lines and arrows pointing to or from the different objects. While this may make sense to a more experienced student, it is not as informative to the first-time learner.

Multimedia tools provide another level of sophistication. Slide shows that use a presentation package such as Microsoft PowerPoint can provide a step-by-step graphic representation of a process. Individual molecules can be added, and specific interactions can be highlighted. The advantage of this tool is that the instructor or learner can move forward and backward one step at a time during the learning process and emphasize key transitions. Yet, the final slide is still a complex display that takes concentrated study to grasp.

Animation illustrates the transitional states of a process. This visualization technique is effective if the objects capture the complexity of the individual components and how they interact. Most current biology textbooks contain CDs with animations that are flat, two-dimensional (2D) characterizations of complex processes. Because they are flat, important spatial relationships of the process are not captured.

The most effective visualizations reveal the complexity of the objects involved in the process, illustrate how and where the objects interact, provide a spatial representation of the molecules during the process, and smoothly represent the transitional states the objects undergo during the length of the process. High quality, 3D representations have all of these attributes.

The use of graphics and animation in mathematics instruction resulted in greater Achievement and in developing Attitude toward mathematics (Poohkay , Brent ; Szabo Michael)

The results of a meta-analysis conducted by Liao (1999) suggest that, as a whole, student learning is greater when a multimedia learning tool is included during instruction relative to a control group without such tools. As Mayer and Moreno (2002) describe the situation though, research on whether one form of multimedia is a better aid for student learning than another has been inconclusive

Conclusion

Animations can graphically simplify complicated concepts and convey complex interrelationships, which are difficult to visualize. Concepts and ideas, which cannot easily be represented in words or even through illustrations, can be easily created and viewed from different angles. Further they help to capture vast amounts of Scientific data into a compact package , which can then be presented simplistically they help capture attention resulting in greater retention for a longer time and accuracy Recreating events and reconstructing scenes with animation is easy . it can therefore be concluded that effects of animation on education are manifold.

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