THE ROLE OF ANIMATION IN EDUCATION AND E-LEARNING

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Abstract

In this article, we use a variety of animation approaches to investigate the significance of animation in contemporary educational software and online courses. College students, like younger children, may be affected psychologically by animation. The sector of education has seen a fresh revolution because to animation. The students have improved their intelligence and imagination because to this transformation. Because animation is entirely dependent on audio and visual foam, it makes learning concepts that were previously difficult accessible to youngsters. There is still a place for traditional animation methods in the realm of computer-based education.

Keywords: Augmented reality, Animation-based education, Programming education, Worked examples
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Introduction

Every 18 months or so, computing power doubles, as predicted by Moore's law. The proliferation of the Internet and the exponential growth in computer processing capacity have had a profound impact on education. Educators discuss possible strategies for raising their pupils' test scores. Taking use of students' natural curiosity to learn, organizing the content offered to them, and using multimedia tools may all help to shorten class times without sacrificing learning outcomes. What I've read about instructional design suggests that how information is presented may have a significant effect on students' ability to focus, motivation to work hard, and knowledge retention. The level of complexity of the teaching approach has a substantial impact on the attention, effort, and quality of the student's knowledge. Educational institutions are evolving and changing as a result of advancements in computing, networking, psychiatry, psychology, and multimedia. Today's educational system is experiencing significant change. Computers are the backbone of the Internet, allowing for instantaneous transmission of data across vast distances. Combining text, images, and music has allowed for the development of excellent teaching environments both inside and outside the classroom.

To create the appearance of motion in animated short, static images are digitally manipulated. Traditional animation included capturing hand-drawn or painted images on celluloid sheets and displaying them in cinemas. Several tools have been created and utilized extensively prior to the emergence of animation. The public's reaction to these devices was mixed: amusement and fear. In the past, people often referred to these tools as "OPTICAL TOYS." The equipment included.

Animation has been shown to be an effective method of education. If properly implemented, it has the potential to provide a productive learning environment for pupils. This chapter also highlighted the significance of becoming familiar with the ideas and practices behind the use of animation in the classroom, as well as the characteristics of the learners and the aims of the lesson. According to Steward (2002), the importance of animation in education can be shown in the fact that it is rapidly rising to the top of the list of most discussed topics in today's classrooms. In his study of animation's educational potential, Okon (2008) lamented that this kind of media is sometimes disregarded in favor

of more conventional forms of entertainment. Hedevelopment of e-learning serve as the basis for this continued by saying that it was quite evident thatbody of work. This article was inspired by the search animation had a major influence on education,phrases "animation for learning," "student ushering in novel ways of instructing that hadengagement," and "student motivation." No gains quickly become the standard in recent years. were made by using PWAs in e-learning software Several experts and students think that animation isdevelopment. 29 papers met the criteria and were useful in the modern classroom because it aidschosen for further analysis. The results of these students' memory by appealing to their senses ofstudies suggest that the PWA approach has potential sight, sound, and (in the case of tangible goods)as a tool for developing e-learning animations.
touch. Animation allows pupils to engage in more**Zulaikha MohdBasar (2021)**The widespread spread sophisticated forms of interactive learning, layingof COVID-19 necessitates the quick use of online the groundwork for conceptual thinking via theeducation. However, there is a lack of information on integration of many senses. According to Frankhow well it functions and the challenges that (2006), learning is enhanced when many senses arestudents face. Thus, this study's goal is to look at engaged simultaneously in a perceptual situationhow well online learning works and what kinds of (learning context). challenges it presents for students. One hundred
Using animation effectively in the classroom requiresand ninety-nine students from a secondary school in much planning. Midleton (2009) outlined aJasin, Melaka, were given a survey questionnaire for systematic way to using animation in the classroom,this case study. The data was subjected to a whereas Okon's (2010) "ASSURE" concept is andescriptive analysis (counts and percentages were acronym created to ensure students have adetermined). The majority of students reported productive and positive learning environment. In thehaving home access to a computer or smartphone ASSURE paradigm, the A stands for analysis ofwith internet connectivity. Furthermore, it was teacher and student characteristics and is followedfound that a large percentage of the population has by the S, which stands for the assertion of learninga high level of comfort and skill with computers outcomes. The second "S" stands for "selection" and(>93%). Students had a moderate level of groupwork the "U" for "use" of instructional tactics andproficiency (66.7%), but low passion for online resources. The letter "R" stands for "requireeducation (41.5%). The vast majority (99%) also participation from both instructors and students,"acknowledged the importance of student-teacher while the letter "E" means "evaluate and revise thecommunication in the classroom. Policymakers, teaching strategy." school administrators, teachers, and parents may all

Literature review benefit from these findings because they highlight

Kainz, Ondrej&Jakab (2013) In this research, wethe importance of having a constant internet provide an innovative method for implementingconnection and sufficient classroom materials. In animations into the educational setting. Ourorder to get a more nuanced knowledge of this approach prioritizes the making of the animationissue, future researchers are recommended to above research of its effectiveness in the classroom.employ a larger sample size and students from a First, we'll define animation, then we'll go overrange of backgrounds.
various common development tools, and finally,**Darko-Adjei, Noah (2019)**The TAM (Technology we'll walk you through the steps of creating yourAcceptance Model) was used to conduct the survey very own basic animation. The best method toof 294. Questionnaires and a survey approach were broaden one's horizons and deepen one'sused in the research. The purpose of this research understanding of the world is via education, thuswas to examine how students felt about the that should be a major priority. usefulness of smartphones in the classroom, how

Wijaya, Hadi& Helmi, Rabab. (2018). Understandingmuch they affected their learning, what stopped the content being taught is the first and foremostthem from using their phones for schoolwork, and need for successful learning. One way to makewhat helped them utilize them. According to the learning more interesting is to employ animation.findings, students who took part in distance learning The ALETRIA project promotes the use of animationprograms benefited from using smartphones as a methods that were developed for use in innovativelearning tool. The findings also revealed that the use e-learning. The study of animation and theof smartphones significantly influenced the

academic performance of distance learning studentsprocess, marking a paradigm change. It's fascinating, at the University of Ghana. However, the resultsamusing, and attractive. Animated PowerPoint showed that distance learners were negativelyslideshows have been replaced by whiteboard impacted by the use of smartphones and revealedanimations and other forms of media in e-learning.
some factors that impeded their productivity. ThesePeople are more likely to understand and remember factors included smartphones freezing at criticaldifficult information when it is presented visually, learning moments, unstable internet connectivity,which has led to a rise in the usage of animation in intrusive calls during class hours, and the screen ande-learning. Because animations capture students' key sizes, which made the smartphoneinterest and facilitate their retention of material, uncomfortable for learning when compared tothey are increasingly being employed in fields laptops. outside of education. The business world is also
Al Lily AE, Ismail AF, (2020) In the midst of thebenefiting from the use of training DVDs for new coronavirus outbreak, what are the repercussions ofhires. Particularly useful in the medical industry to switching to online courses? is the question ourpresent medical procedures and research, research attempts to resolve by developing aanimations may be used to great effect to create theoretical foundation for this kind of education.immersive settings.
The book concentrates on Arab culture, even ifSo, why would cartoonists want to be involved? The globalization and the media may have blurredavailability of work is the key. If you're an animator, important distinctions amongst groups. Severalyou may find it encouraging to learn that implications have been uncovered via theemployment opportunities in the academic field are examination of social media posts, online courses,increasing rapidly. No longer are just movies and and interviews. Ideological worries regarding socialcartoons affected. As young people in India swiftly and cultural ramifications may lead some to adopt,adjust to the evolving terrain of the country's support, reject, or fight this instruction via lobbying,education and technology mix, competition among gossip, and comedy. Negative consequences one-learning businesses is heating up.
learning may result from inadequate preparationHere are some ways to enhance the animation in and lack of expertise, both in the classroom andyour online courses:
beyond. Pandemic stress, anxiety, depression,**Pair animation with audio:**
domestic violence, divorce, and pregnancy are allWhen a teacher isn't readily accessible to go over potential barriers to school attendance for both kidsthe material with the student, a narrated video or and teachers. It's possible that certain Arab settings,audio recording might fill in the gap. Adding some in terms of the practical and organizationalambient music may keep a user interested for much implications of becoming digital, are farther forwardlonger.
than others. Stakeholders may increase their efforts,**Interactive:**
in either an ethical or unethical direction, to profitThis is one of the most noticeable drawbacks of from the excess demand for this kind of schooling.animation. Physical classrooms provide an Arabs have embraced a number of tactics that areunparalleled level of individualized instruction. It is intended to separate them socially, despite theircrucial to get student feedback, consider student historic social closeness, bonding to deboned, andperspectives, and encourage student participation. development of unorthodox "distance ship. It's useful for remembering otherwise boring
Use of animation in e-learning information. This means that users are more likely to
In the entertainment industry, animation has foundchoose online platforms that provide engaging and widespread use. However, now that animationengaging courses.
software is widely available, the globe is getting**Flexibility:**
ready to implement major changes in the classroom.Users should be able to control the playback speed And the younger generation is catching on as well.of media. Including navigation choices in animated When it comes to studying on their own timevideos makes it possible for viewers to learn at their outside of class, they have no trouble keeping upown speed. Your content's optimization for your with the ever-evolving methods of online education.target audience improves the more specific it is.
Traditional static information has given way to a**Focused:**
more fluid and dynamic visual display of learning

Learning might be hampered by too many animations. on maximize your efficiency, stick on a single subject at a time and avoid digressing.

Age-appropriate animations:

Make sure the animations are appropriate for the target demographic. Highly active and colorful animations capture the attention of younger children, whereas animations that are easier on the eyes but still convey the necessary information efficiently are preferred by older pupils. Having said that, keep in mind that the instructor still teaches and the student still learns. To animate anything is to just provide a hand. Make sure your animations enhance the trainees' experience rather than detract from it. There is a growing need for talented animators as more students of all ages turn to online education.

Incorporate Animation in Children's Education

animation in education

Many benefits can be obtained by incorporating animation in education This provided us with ways to include animation in learning pursuits. The different ways are discussed below.

Animation of Subject-based topics

Chapters from a variety of areas may be animated to help students better understand the principles being taught. Visualizations with humorous elements might help make difficult ideas easier to grasp. The course modules may be seen as many times as the student needs to in order to fully grasp the material. The brain has an easier time storing the animation than regular movies. Over time, animation may be adjusted to reflect any changes.

Class presentations enhanced

With the use of animations, educators may contribute more to their students' learning. There pupils will be engaged because of the class's emphasis on interaction. Students would be more likely to contribute with visual involvement.

Visualizations made easy and attentive

Motivated students will seek out further information. Slide displays are a great way to communicate information and ideas.

There are a lot of subjects that need for more deliberate and concentrated instruction to help pupils understand them. Videos on the subject that use 3D animation to convey facts and explanations are becoming more popular. It is possible to simplify difficult concepts by the integration of multimedia elements such as music, video, pictures, and texts.

Topics are presented in a way that allows students of varied IQs to grasp them.

Complex ideas may be clearly communicated using animations. Students benefit greatly from being able to picture the topics presented in multimedia presentations. Animation has a positive effect on children's creativity.

Making classes available as required

Normal classes take place in buildings like schools. There is a certain amount of time that students must spend in class each week, regardless of how much they retain or apply the material covered. Topics may be released online as animated learning modules, giving students the flexibility to study whenever it is convenient for them.

Anywhere is a good place to study animated classes. Resources may be made accessible in any location with internet connection, including the classroom, the home, the library, and even the coffee shop down the street. Facilitating learning wherever and whenever is a result. When paired with music, animations have been shown to help students relax and concentrate on their studies.

Removing the age factor in learning

Anyone, regardless of age, may profit from engaging animated learning modules. There are a variety of methods suitable for pre-K, elementary, secondary, and higher education students. All ages may enjoy the engaging and entertaining cartoons.

By adapting their methods to the needs of their students, educators may boost classroom efficiency and student achievement. Animated content makes it far simpler to commit ideas to long-term memory. Storytelling, sound effects, and relaxing music all enhance the learning process. Every student may relate to the material, and the brain can quickly absorb new information. Animated content is certain to pique viewers' interest.

Freedom to express

When it comes to discussing or expressing their emotions, many students experience feelings of awkwardness or shyness. Their enthusiasm and willingness to express themselves are stifled by the presence of superior brains.

Using animation to solve these types of issues in the classroom may be a quick and easy fix. Pre-rendered settings are made accessible for use in the creation of characters. You have the freedom to ask questions and share your thoughts, and you may have your questions answered or get a second chance at a concept. It's easier for students to contribute to class

discussions. Several businesses are now advertising educational animations created in classrooms and libraries. Teachers may utilize the course's management tools to provide more effective and manageable instruction.

Benefits Of Using Animation in Education

There was a spike in online education during the Covid-19 quarantine, although this tendency really began long before the epidemic. The incorporation of animations into courses improves the quality of a programmer's material, which is becoming more important as educators seek methods to make their learning tools more engaging.

To help with retention and recall, animation-based learning makes use of animated videos. This method is useful for teaching students of all ages, from kindergarten to college.

Let's take a look at the advantages of employing animation in the classroom, both for students and teachers:

Simplifying Complicated Information

Understanding a complicated topic may be taxing on the mind. When you add in a group of people and 'conventional' study tools, motivation tends to plummet. Using animation, educators may more simply present or explain complicated ideas that many students have trouble grasping. Students are better able to grasp abstract concepts and processes with the help of animation.

Retain Attention

Using animation in education has several benefits, including better communication and topic retention. Visual information is easily and swiftly processed by the human brain. HubSpot claims that the brain processes images 60,000 times quicker than text, and that visuals account for 90% of the information communicated to the brain.[1] In contrast, a method that combines auditory and visual learning materials is significantly more successful for simple learning retention.

Different people have variously effective methods of learning. others of us learn best by doing, others by reading, and some by seeing. Animations make it possible to accommodate a wide range of student learning methods.

Attention and Engagement

Students often report that reading literature is boring and dull. Some people can read for hours without taking anything in or storing it in long-term memory. However, animations provide a more rapid and interesting method of education. Students' focus and retention rates may both improve with this kind of instruction.

Cost-Effectiveness

It's true that making an original animation from scratch will set you back financially, but consider this: you'll end up with high-quality educational resources that can be utilized again and over again. So, what exactly do we mean? To begin, the identical visual parts of the animation may be changed with appropriate dialect (or voiceovers) if your viewers include individuals who speak other languages. They last for a long time and may be divided up into smaller segments to advertise a program or course on several forms of digital media. Students may see the videos whenever they choose and can even watch them several times.

If this has piqued your interest in include an animation in your educational portfolio, you should begin by thinking about your target demographic and the message you want to send. Define your goals and intentions; what is the point of your writing? Planning and preparation are the two most important aspects of making a good animation.

CONCLUSION

Multiple studies have shown that using animation to help people learn is very effective. However, in order to get the intended results, learning modules must be carefully constructed. In order to succeed, you need input from specialists in several fields.

With the help of professionals, engaging and focused learning modules may be created combining cutting-edge 2D and 3D animation methods with supplementary multimedia elements. It will take education to a whole new level.

All learners, regardless of age, will be inspired to take the next step toward realizing their full potential.

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