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The Use of Animation in Delivery of Educational Messages Among Primary School Children

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Abstract

Scholars have noted that the improper use of animation as an element of training hinders the process of learning, despite the medium's potential benefits. Research in instructional and classroom teaching is lacking in comparison to the vast literature on static graphics. The evolution of the human visual system has resulted in a state where the brain can recognize patterns and attribute meaning to them (Narayanan N. Hari, 1997). Children may use sketching until they can write in their native language. Ancient cave paintings are a permanent record of our forebears' presence. Machine diagrams, schematics, and drawings are all tools available to engineers or product engineers for communicating the workings of mechanical, electrical, and other systems. Images that can be quickly reduced or expanded have the potential to be utilized to communicate abstract ideas to a wide audience. Almost everywhere from airports to schools to hotels, a toilet sign will include a cartoon person. While accurate photos of actual items don't need any special coding to be understood and distributed, they also can't be used to express the same meaning across all social classes since each picture only refers to a single entity.

Keywords: Advantage, animation, instructional design, classroom teaching, visual system, generic concepts

Introduction

Using iconic gestures, people of different ages and backgrounds may communicate with one another via visual language. The term just cannot be expressed in any other language. We are "primarily visual communicators," as Nancy Duarte puts it. In the early 1980s, communication tools including as crayons, finger paints, and clay were widely used. Because to recent developments in computer and networking technology, people all over the world may now share and learn from one another's experiences and insights. Technology has progressed to the point where information can be captured and shown in colorful pictures using computer algorithms. The use of digital aids to human communication is leading to a better grasp of graphics' visual foundations. The importance of literacy in today's society, especially visual literacy, cannot be overstated. A visual contact is the exchange of information via the use of a visual aid such as a sign, piece of typography, painting, drawing, video, illustration, picture, etc. Communication based on eye contact. Communication and connection between people are aided by visual languages.

Curriculum is developed and refined by teachers with an emphasis on the knowledge, skills, and attitudes that students should acquire. The major method of conveying the subject matter to

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students is via the use of multimedia. The term "multimedia technologies" (MMT) refers to a wide category of technological tools that facilitate communication and the transformation of data into knowledge by engaging the learner's cognitive schemas and making full use of his or her intellectual potential. Humans are only able to observe meaningless, unconnected facts unless they have the ability to establish connections and draw conclusions from their experiences (Wiggins & Mctighe, 2005).

The incorporation of visuals and simulations into instructional materials is expanding students' understanding of a wide range of topics. New perspectives were also gained via the increased use of visuals and digital materials in the classroom. The visual nature of graphics makes them easy to comprehend, and this has led to the belief that their use in education helps improve comprehension. The video, like static animations, should simplify complicated actions and processes in the issue room so that they can be understood by the audience. In order to simplify otherwise complex subject matter, animated visual or textual aids are used. The research suggests that intrinsic inconsistencies in the core essence of an animation might impair the cognitive effect, even though some of the concepts can be applied to animation. Structure and linkages, which aid understanding (Tversky B., 2008), are inherent in a static graphical representation but difficult to enforce in animation due to their transitory nature. Although visual aids such as flowcharts are useful for explaining complicated procedures to novice students, the fleeting nature of animations makes it difficult for them to manage their limited cognitive resources.

Use of IT Tools

Connectivity and education in the twenty first century are profoundly impacted by IT technologies. Reports from all around the world emphasize the positive impact that interactive media has on the development of young people, demonstrating the growing influence of technology on children's early literacy and play. Together, these novel developments and tried-and-true methods may propel education forward and improve the quality of reading instruction for young children (Waller 42). When kids explore the world and form their own perspectives on it, learning takes on a more engaging and enjoyable tone. The traditional educational model, in which students sit passively while teachers lead them through a curriculum, is diametrically opposed to this philosophy.

Learning strategies that are negotiated, found, and developed rather than prescribed are also coming under scrutiny. Learning that is driven by each student and in which students are responsible for their own knowledge management and acquisition has been shown to be possible with the help of digital technology. Aspects of technology use in contemporary classrooms were highlighted by Jones, Valdez, Nowakowski, and Rasmussen (2003). Teachers, they reasoned, play the role of facilitators because they set the stage for students to meet benchmarks and grow via genuine exchanges. A teacher's duties include acting as a guide, facilitator, interpreter, and advisor. Teachers should set a good example by using technology effectively themselves. In order to assist their athletes improve, coaches provide them with guidance and motivation. The machine and its ability to offer access to the information highway have the potential to affect the creation of assignments, the delivery of assignments, the learning that will happen, the remediation of difficulties, both behavioral and technical, and the reactions of instructors.

ISSN- 2394-5125 VOL 06, ISSUE 03, 2019

Generation of Animation for Educational Purposes

If the animation is well-done, it may boost the clarity and precision of the message, allowing the student to more easily incorporate the new information with what they already know. This allows students with extensive background knowledge to evaluate the "gaps" in their understanding. Many lines of evidence suggest that animation has the potential to supplement existing knowledge (Hegarty & Kriz, 2008). The research showed that unless instructors are given access to a computer projector or digital whiteboard, they will utilize ICT to provide lesson content. The teacher intends to use a variety of strategies for facilitating communication and collaboration among students of varying cultural backgrounds. Several people were drawn to it because of the diversity of exploring strategies it provided. It provided access to a wide variety of creative tools, benefiting students who may struggle to thrive using traditional methods of instruction. After the presentation, they were given the opportunity to randomly practice the newly seen skills, helping to cement the lecture's contents in their minds.

Throughout the experiment, they used the program that they had chosen to use. The students in this case study were paying close attention both to their teacher and to one another while they were given instructions at the museum. The machine read a narrative and had the kids keep an eye on the action and reactions on the screen. The machine offered more than just basic functions; it also allowed users to compose their own texts and narratives. Young children's use of music, games, and rhymes in the classroom has been revolutionized by the CD-ROM.

Waller states that there is merit in investigating the impact of technology on literacies. For people who have trouble reading and writing, technological aids are available. The usage of ICT is widespread throughout curricular areas. The use of ICT resources encourages a 'playful approach' to learning since they contextualize problems in relevant contexts and facilitate group projects and discussions. Their ability to pique kids' interest and inspire them to work hard is astounding, too (Whiteboard 102). This is one of the reasons why adventure games are so popular. These games are able to present kids 'off the peg' issues in a manner that makes them real and alive by setting them in the context of a believable fictitious environment.

Assessment of the Impact of the Teaching Aids from Animation

There is evidence to suggest that pupils' ability to collaborate grows as they use ICTs. Several aspects of e-learning were investigated in a study conducted by Karampotsios, Clement, and Papathanassiou (232) of the Athens University of Economics and Commerce. Of the 438 students surveyed, 56.9% said they think e-learning helps or greatly helps teachers transmit their lessons to their students. The progress of children has been tracked via electronic media, giving teachers valuable feedback on how they're doing in the classroom. The majority of students have a positive outlook on the significance of e-learning thanks to the advice of their professors (61.8 percent).

There's no need for professors and students to adhere to a tight schedule of communication hours or schedule meetings that work for everyone when a student raises a problem. The majority of students (50.5%) in this study believe that they appreciate being able to collaborate with their instructors when working on an assignment or project in an online setting. This is not a convincing demonstration of the significance of e-learning. When asked about the benefits of e-learning, more than half of those polled did not provide a positive response. Just 39.6 percent of pupils think that teachers will be more motivated to encourage them via online learning. Just 56.9% are confident that e-learning will improve their lives in some way. This study demonstrates that students see

ISSN- 2394-5125 VOL 06, ISSUE 03, 2019

inspiration as an interpersonal exchange that can be heard. Tools for timely client engagement may be found in e-learning environments. Students who believe e-learning has an effect on the teacher's immediacy are about on par with those who believe it does not (40.4 percent). If you work well together, you can count on having open and honest dialogue. Hence, technological means of communication should be considered as a complement to effective spoken exchanges.

Studying "the effect of animation on education" was Rieber and Hannafin's joint project. They also developed interactive courses for primary school pupils to learn about the law of motion via the use of computers. Evidence from studies shows that animation has a positive effect. In contrast to static images, however, animation fared poorly in this evaluation. Nonetheless, the use of animation increased students' motivation to continue their participation. In comparison to exploring static pictures or text teaching, children were more likely to turn to animated training while learning. (cited in Betrancourt and Chassot, p. It would seem that in traditional elementary and secondary schools, verbal material is prioritized as the major channel for imparting knowledge, with illustrated information serving primarily to attract and motivate pupils. Holliday's study highlighting the benefits of employing visuals in mathematics education provided evidence of this issue. According to the results of this study, learning from texts alone is more effective for kids than learning from texts plus visuals. Holliday found that students in classrooms where text and visuals were presented simultaneously seemed to under-process the visuals because they incorrectly concluded that language conveyed the most crucial information (qtd in Betrancourt & Chassot 147).

Approaching Animation with Focus on Education

Animating may be done in many different ways. Algorithmically created, filmed, or fabricated from a blend of actual and fabricated elements. The method isn't revolutionary just because it changes how people perceive animation; it also has far-reaching implications for how information is stored and accessed. By comparing and contrasting these three types of data, Lowe made the following points: (shapes, colour, texture). Second, in order to convert, an item must either be moved or relocated inside the same reference frame. Third, Transformation, which suggests the change of form and/or substance across time. Using animations without other elements like narration or text is often not appropriate. A hasty or incorrect use of visuals may not only fail to enhance the learning process, but may actually hinder it. Education is the setting for the use of animation in teaching. One argument in favor of visualization is that it may be used to imagine complicated events that would otherwise be either imperceptible, too dangerous, or too expensive to carry out in practice (representation of abstract concepts such as forces).

Intended to spark a rational debate by conjuring up mental pictures of incomprehensible scenarios. Even among the most sophisticated physics students, analysis shows that simple ideas typically prevail over empirical conceptions. The use of both correct and incorrect animations would help students better articulate their ideas. An appropriate immersive learning environment, one that is conducive to studying a phenomena and that helps the learner to generate and evaluate ideas, may be included via the use of animation. In the context of the discovery-learning process, animation serves as a learning stimulus (Betrancourt &Chassot 143-145). There has been a lack of stringent criteria for how the various parts of digital learning materials might be arranged to improve retention and performance. To facilitate the design process while dealing with complicated information, Narayanan and Hegarty developed a five-stage audiovisual design framework in

ISSN- 2394-5125 VOL 06, ISSUE 03, 2019

1998. In their view, a model's underlying components and relationships are what allow a person to understand the model's exterior depiction of a complicated structure (qtd. in Lowe 50)

Conceptual Framework of Animation Acceptance

Further reducing the cognitive burden of learning via animation is possible with the help of five ideas: the coherence rule, the signalling concept, the coherence principle, the spatially contiguity concept, and the chronological consistency principle.

a) Inconsistent animation will have a negative effect on comprehension due to the principle of coherence. Incorporating eye-catching visuals, sound effects, or lively text or instrumental music tracks into a lesson plan may seem like a good idea, but it's not always proven to boost student learning. If you want your message to be understood, leave out the fluff and focus on getting to the point.

b) If it's not possible to cut out all the fluff, then the instructor should at least incorporate some cues to help the student focus on what they need to know. According to the notion of signaling, it is theoretically impossible for pupils to mentally coordinate an animation or story in the absence of unambiguous instructions.

c) According to the redundancy idea, the combination of visual, auditory, and textual representations is more effective than any one of them alone. Students who listen to an animated version of a story are more likely to fully grasp the material presented.

d) According to the notion of spatial proximity, confusing architecture increases mental effort. According to the Spatial Contiguity Hypothesis, viewers have an easier time following the plot when different parts of the story are not too far apart on the screen.

e) The temporal contiguity idea states that it is simpler to have the animation and dialogue both play at the same moment rather than having them play in rapid succession. A more complete image of the explanation is presented to the student once he has seen the animation and heard the interpretation.

The second strategy for dealing with the challenges of learning through animation is to zero in on the specific situations in which students may have difficulty learning; this is especially useful when the material being taught requires a high degree of critical cognitive processing. When information is presented at a rate greater than that at which the learner can process it, confusion and overload are possible outcomes. To deal with the "critical overload" issue, you may take one of three preventative measures: segmentation, pre-training, or switching modes. The criteria for segmentation make it easy to break up the animation into digestible chunks that a student may use to keep tabs on where it all kicks off. Each of the 16 chapters of a lesson on how to make a lightning storm would cover a different step in the process. After the current segment is complete, students may go on to the next one by selecting the appropriate link.

Handling Critical Overload

Teaching topics alone rather than as a whole has been shown to improve student performance. Having pupils familiarize themselves with the names and major aspects of the components shown in a narrated animation is another strategy for dealing with critical overload. This requires the student to take part in two different learning activities: (a) "building component model," which is the consciousness of potential states of components, and (b) "building a casual model," which is the understanding of how a change in one component can lead to a change in another component, or how cause and effect chains function. Learning the components' names allows the student to

ISSN- 2394-5125 VOL 06, ISSUE 03, 2019

give their undivided attention to the task at hand. People seem to learn an idea better if they are previously familiar with its name, qualities, and causal relationships, according to the Pre-Training Hypothesis.

The role of the instructor might shift from "sage on the stage" to "guide at the side," as suggested by Chizmar and Walbert (1999). The teacher's traditional job of disseminating knowledge is transformed into that of a facilitator, coach, guide, and co-learner when technology is integrated into the classroom. Marshall makes a number of bold assertions about the efficacy of digital instruments in the classroom. More than 50 research papers covering voice, video, and computer-based learning give clear proof that kids can and do learn from educational technologies, he claims (as cited in Molenda & Sullivan, 2003: p. 15). According to Fine and Thornbury (2006), in the twenty-first century, young children are most likely to be fascinated and impressed by computers. In elementary education, animation is one of the most often used digital tools for inspiring and motivating kids to achieve their academic potential.

A teacher's ability to communicate effectively lies on their ability to make classroom learning fun (Easingwood, 2000). In today's classrooms, animation has shown to be an efficient means of accomplishing this goal. Many scientific investigations have shown as much. After reviewing the research, Mayer (2008) concluded that animation, particularly cartoons, is very effective in holding the attention of its viewers; even the most outlandish events can be explained through animation.

Traditional Versus Modern Methods of Teaching and the Impact

Chalk and talk is a common teaching approach in conventional classrooms. In a conventional classroom, the focus of students' attention is typically on the teacher's lecture and the blackboard's printed text or static figure. It might be difficult for pupils to grasp the concept of a system when presented just with a static graphic in class. Instead, individuals need just perceive as it is if they see the identical course material in animated form. To mentally animate anything, one needs both mechanical expertise and good spatial judgment (Hegarty & Kriz, 2008).

By presenting complicated ideas from a variety of angles, animation may improve comprehension and retention (Narayanan & Hegarty, 1998). Schnotz and Rasch (2008) claim that animated graphics may also draw the observer's attention to crucial features of the display, impart procedural knowledge, exhibit the dynamics of subject matter, and provide explanatory learning through manipulation of a displayed item. Researchers Betrancourt and Chassot (2008) concluded that the visual nature of animation makes it an effective teaching tool.

How animation affects the learner's mental processes is crucial to its success. (Mayor, 2008). Mayer and Chandler (2001) cite several studies that demonstrate how adding text to graphics helps students of all knowledge levels. Low- and high-knowledge students' success in learning a physics system from a diagram alone and from a figure with text was compared in a study by Mayer (2008). Although the high-knowledge learners in his research fared rather well when given just diagrams, the low-knowledge learners fared better when given both text and diagrams. An animation may show the changing parts of a problem clearly and concisely. According to research conducted by Shreesha & Sanjay Kumar Tayagi (2016), employing animation in the classroom may help kids learn more effectively.

Conclusion

ISSN- 2394-5125 VOL 06, ISSUE 03, 2019

Teachers may provide their pupils with a one-of-a-kind educational experience by using computer-mediated communication approaches, particularly by making use of resources like animation. In the classroom, animation has been shown to have a number of positive effects, including simplification of complicated ideas, increased student engagement, increased motivation, and a heightened focus on certain topics. Using animation in the classroom has been shown to improve students' learning ability, engage them in the material, and motivate them to succeed across a wide range of disciplines. The degree to which students' academic performance improves, however, may depend on both the structure of the animated content and the method by which it is presented in the classroom. Modern technologies have made animation production easier and cheaper, making this kind of media a more realistic option for educational resources. There is a growing body of evidence-based design criteria that informs the search for information on the efficacy of instructional activities. Choosing a format that works for your research is essential. Animations would be happy to use their understanding-boosting potential.

References

1. Beniger, J., The Control Revolution.Cambridge, MA: Harvard University Press. 1986.Print
2. Bowman, B., Donovan, S. and Burns, ed Eager to Learn: Educating our Preschoolers. Washington, DC: Committee on Early Childhood Pedagogy, National Academic Press. 2001.Print.
3. Betrancourt, Mireillie., Alian Chassot. “Making Sense of Animation: How Do Children Explore Multimedia Instruction”. Learning with Animation: Research Implications for Design. Ed. Lowe, Richard and Wolfgang Schnotz. New York: Cambridge UP. 2008.149-164. Print.
4. Blakenship, Esther. “Animation-The Chilli Pepper of Web”. SAP Design Guild. March 30 2005. Web. 12.11.2014. www.sapdesignguild.org/community/design/print_animation.asp
5. Bransford, J. D., Brown A. L., & Cocking, R. R. “How people learn: Brain, mind, experience, and school.” Washington, DC: National Academy Press. 2000. Print.
6. Centero Manual Ortega. “Computers in Education: the Near Future”. Computers and Education in 21st Century. Ed. Ortega Manuel and Jose bravo. Newyork: Kluwer Academic Publishers, 2000. 3- 16. Print.
7. Chizmar, J., Walbert M. “Web-based learning environments guided by principles of good teaching practice”. The Journal of Economic Education, 30, 248–259. 1999. Print.
8. Cox, R. “Promoting Learning through CD-ROM Talking Books in the Early Years and the Primary School”. Master’s Degree Dissertation, University of Kingston. 2000. Print
9. Desai, Rishikesh Bahdur. ‘SSLC Results Bidar Retains its dubious distinction’. The Hindu. Web. May 7 2013.
10. Digital Revolution 2014, Wikipedia. http://en.wikipedia.org/wiki/Digital_Revolution. Web. 10.11.2014.
11. Dushi Guari., “Notes on the Types of education: formal, informal, non-formal”. Preserve Articles. http://www.preservearticles.com/2012010920241/notes-on-the-types-of- education-formalinformal-non-formal.html. Web. 08.11.2014.
12. Easingwood Nick., “Electronic Communication in the Twenty-first-century Classroom”. ICT and Literacy. Ed. Nikki Gamble, Nick Easingwood. Newyork: Continnum. 2000.45-58. Print.
13. Facer, K., Green H. “Curriculum 2.0: educating the digital generation”. Demos Collection, 2007,47– 58. Print.

ISSN- 2394-5125 VOL 06, ISSUE 03, 2019

14. Fine Carol., Thornbury Mary Lue. “ICT Play and Exploration”. ICT in Years. Ed. Mary Hayes and David Whitebread. New York: Open University Press. 2006. 21-37. Print.
15. Garrison., Shale. “Mapping the boundaries of distance education: Problems in defining the field”. TheAmerican Journal of Distance Education, 1(1), 1987. 4-13. Print
16. Harda Vilet. “From Instruction to Construction: Learning in the Information Age” Education and Media Technology Year Book, Ed. Branch and Robert Marbie, London: Libraries Unlimited. 2003. 4-49. Print.
17. Thomas Frank., Ollie Jhonston, The Illusion of Life: Disney Animation. New York : Disney Publication.1981.Print.
18. Younger, Teresa Hubscher., Hari Narayanan. “Turning the table: investigating Characteristics and Efficacy of Student Authored Animations and Mutimedia Respresnations Learning with Animation: Research Implications for Design. Ed. Lowe Richard and Wolfgang Schnotz.New York: Cambridge UP, 2008. 263-268. Print.
19. Waller Tim., “Literacy and ICT in early years?”. ICT in Years.Ed. Mary Hayes and David Whitebread. New York: Open University Press. 2006. 37-55. Print.
20. Wimmer Roger E, Domnick Joseph R. “Mass Media research’: An Introduction” Wordsworth: Newyork, 2011, Print.
21. Wrench Jason S.,Virginia Peck Richmond, and Joan Gorhan.Communication,Affect & Learning in the classroom. 3ed. California: Virginia Peck Richmond, 2009. Print.