

Animation vs Realism.

The seduction of realism

<https://dl.acm.org/doi/abs/10.1145/1666611.1666615>

(Hodgkinson, 2009)

In this piece, the discussion of realism is discussed and the new expectations that come along with it. It talks about how to approach realism with the ever-changing technology and to keep that traditional animated feel to your game, which is difficult because having a realistic-looking game with the traditional animation feel and movement is difficult because to achieve realism you must have a realistic feel to your game. Is that still being creative and keeping to your artistic interpretation of the game you were hoping to achieve with adding in those hyper-realistic movements you didn't want? It is known amongst lots of people that these characters are not real but the visual realism technology has made them feel as though they are and make every day people feel more connected to the animation. The main goal of realism is to make it feel real and that it is as close to live like as possible. All the exaggerated movements play a big part in making the game feel more realistic and "alive" this is the true seduction of realism. With new technologies, the seduction of realism becomes better every year and more accessible to more game developers to help bring the game to life and help the audience feel as though they are playing a simulation of life.

Movement realism in computer facial animation

https://www.researchgate.net/profile/Steve_Maddock/publication/228922876_Movement_realism_in_computer_facial_animation/links/09e4150e6f78d266e7000000/Movement-realism-in-computer-facial-animation.pdf

(Maddock, Edge and Sanchez, 2014)

In this piece, they go into detail about how making realism feel more "real". It goes into detail about how a static emotionless face is less attractive. The piece then goes into detail about voice and how to make a voice more realistic and how the shape of the mouth does not match up with the speech. Wrinkles also play a big part in making the animation of the face feel more real and more human. The more realistic animation feels the more the player can connect to the character. All the different movements for facial animation bring the character to life. The article highlights that mouth movements and wrinkles are important in facial animation. They show how they make the real expressions on a real face then convert it to a synthetic using bids which converts the wrinkles over to the synthetic face for the facial animator to recreate. Facial animation is the main feature of a character and it is very important to make sure the movements are correct and that the

character feels alive and isn't just static with no emotions making it hard for the audience to be able to feel a connection to the character and not being able to relate because they are emotionless. The more similar the facial animation is to real-life the more likely the audience is to relate to the character.

Effects of realism on extended violent and nonviolent video game play on aggressive thoughts, feelings, and physiological arousal

<https://onlinelibrary.wiley.com/doi/abs/10.1002/ab.20279>

(Barlett and Rodeheffer, 2009)

In this paper, they talk about the effect of violence in realistic games. They carried out many different tests to see if this theory was correct and although violent games do stimulate aggression the more realistic a game does not play a factor, if a game is violent it will make a person more aggressive. The rate of aggression is faster in a realistic game rather than an unrealistic video game. They have also done a test on heart rate and violent games do affect the player's heart rate but do not affect their temperature. The more realistic a game is the more likely the audience will relate to it inciting that violence and higher blood pressure giving the audience that rush that they may not have experienced if the game wasn't as realistic. Realism has its perks and is more widely known around the world for the amazing graphics that it can achieve giving it the human-like feel but where does it cross a line? Will games have to not be too realistic to prevent people from becoming more aggressive where they might not have if the game wasn't as realistic. When making a game developer should consider how violent they make a game because they don't want it being too realistic where it causes these burst of aggression in people who are engaging and buying their game

The Effect of Geometric Realism on Presence in a Virtual Reality Game

[10.1109/VR.2017.7892315](https://doi.org/10.1109/VR.2017.7892315)

(Hvass, Larsen, Vendelbo, Nilsson, Nordahl and Serafin, 2017)

In this paper, they discuss the effects of geometric realism on presence in virtual reality games. They carried out many different tests. It was reported that users got a better experience with a high geometric realism in their game. Better graphics meant that users got a better experience because they feel as though it was like real life rather than a bunch of images that they could move around in. The higher geometric realism a game has made the audience enjoy the experience more and feel more engaged in a realistic environment. The higher geometric realism it gives the objects in the environment which bring it to life and add that extra element of a real-life

simulation. This explains why the audience was so engaged in the test of a higher geometric realism because everything around them felt more real and that they were actually in the game and not just playing one. Low geometric graphics are a good alternative and will still keep the audience engaged and maybe more accessible to those game developers who can't afford a higher geometric realism. The life simulation will still be there but your audience might not be as engaged compared to the higher geometric realism graphics.

Level of Realism for Serious Games

<https://ieeexplore.ieee.org/abstract/document/5116582>

(Chalmers and Debattista, 2009)

In this article, they speak on the level of realism in serious games. The authors bring up the point of a game simulating real life and the effects it can have on people and how they may react to certain situations in real life. One of the key elements of making a game feel more real is the use of our 5 senses. Sight, touch taste, hearing and smelling all need to be simulated in a game to make a serious game feel more realistic and is a simulation of a real-life situation. Game developers use select rendering making more items higher quality than other to make the player hyper-aware of that part of the game making it feel realistic without taking away from the rest of the environment of the game and keeps that "real-life simulation" elements of the game which keeps the game intrigued and wanting to play and explore more. The authors also mention that to make an environment feel more real it must have imperfections that you would see in everyday life like scratches. A game with more imperfections will feel more real and like it is a simulation in real life because everything around us is not perfect and this is a great way to make the element of the game feel real by incorporating one of the 5 senses, sight. Game developers have many ways of bringing a game to life and realism are one of the harder ones to achieve because you want do not want to feel like you're in a game and in serious games, the realism element is what makes a game feel like it is a simulation of real life.

3D gesture-recognition Based Animation Game

<https://doi.org/10.1016/j.procs.2015.03.138>

(Gosalia et al., 2015)

In this journal, they talk about the 3D gesture recognition of MathMazing a game used

to teach primary school students about arithmetic. The paper goes into detail about the drawbacks of the game and what they think can be used to improve the game as e-learning is a new way of teaching. This paper highlight what e-learning is and how it can be helpful for students because it is accessible to all and is more convenient and less expensive. Some of the drawback to the game that they mention is the lack of movements and challenges and their dependency on Kinect. The dependency on Kinect is not good because it is expensive to purchase and most students do not have access to a Kinect device which is one drawback. They also mention its bland interface and how it would not attract school kids who are wanting to learn online. They talk about adding a webcam as a feature and making different mazes for each level to add that element of a challenge and that they will incorporate addition, subtraction, division, multiplication and bomdas. The game has a quite simple animation to it which make it much easier for the game developer to experiment with the game without having to spend as much time on it. They found key features that they felt were necessary for an e-learning game and implemented them to make it more fun for school learning students.

Using animation to support the teaching of computer game development techniques.

<https://doi.org/10.1016/j.compedu.2006.12.006>

(Taylor, Pountney and Baskett, 2008)

In this piece, the authors discuss using animation to support the teaching of computer game development in the mathematical context. Animated game learning is found to be more beneficial than your traditional way of learning. It adds the element of fun that traditional learning does not have. Animated games help the student to picture what they are doing rather than looking at it on a page or doing it all in their head and getting confused where the animation will show the student what is happening. Games are every growing and are only getting better which means there are more opportunities for game developers to make games based around teaching and learning that can be greatly beneficial. Animated learning materials can also improve the speed and efficiency of students in a learning workspace and may find them much more beneficial in the Long-run, as they can always return to the game to refresh their mind and element of a challenge and having fun, is there which wouldn't be present in traditional learning. Animation also supports teaching with visual learning and symbolic learning as it helps students put a visual in their head and remember symbols from the game that they played rather than having numbers down on a page in front of them which can get extremely confusing and is not visually appealing to the eye.

Game asset considerations for facial animation

[10.1109/CGames.2013.6632625](https://doi.org/10.1109/CGames.2013.6632625)

(Liu and Davis, 2013)

In this paper, they talk about game assets that should be considered for facial animation. Facial animation is an especially important feature of the character in your game and these assets should be considered when creating your character. The paper goes into the importance of joints and not blend shapes. Joints can achieve much more motion and tracking. The joint technology makes it accessible for all to create a functioning game without having to spend thousands on high-end equipment to make a game that works. This makes it available for more game developers to create a face that moves in a way that helps the player to connect with the character and the animation of the face. These assets should be considered when it comes to facial animation when a game developer is creating a game. The article mentions that the game L.A Noir was created similarly and was a highly praised game for its facial animation. The jaw is one joint that they mention in this article and show images of the difference between volume preservation and the joints and how they give the animation a much smoother look and make the animation feel more realistic with its round edges compared to it being sharp and rigid taking away from the character and making it feel less like a face and almost not life like in any way shape or form.

Image processing analysis and research based on game animation design.

<https://doi-org.ezproxy.itb.ie/10.1016/j.jvcir.2018.12.011>

(Sui and Lee, 2019)

In this paper, they analyse and research image processing on game animation design. The first mention how technology is ever-changing in the gaming circle and how it is important to always be on top of it and to not fall behind because it could leave you with a game that is a failure and not enjoyed by consumers. Image processing is an especially important part of game animation and some of the key features are as such feature extraction, image edge detection, image binarization, and image enhancement. Image processing is the game that the player will be looking at which creates the game. The article goes into many different techniques with many images showing the difference between each technique. One image they show is the softness of pixels make images appear brighter and liven them up a bit more. The article talks about how important pixels are and the role they play in animation design and the difference they

can have with the smallest change. It talks about how pixels can make the image processing feel fuller and give it that more lively feeling that is needed when playing a game to be more immersed. The environment needs to be felt when creating a game and not just focusing on the character the environment of the game can change how a player is feeling and if they should be more aware or relaxed and happy depending on the game you create.

Game-Based Learning Approach for Teaching Programming Concepts

(Mathrani,A., Christian, S., & Ponder-Sutton, A. 2016)

This journal goes into detail about using gaming to approach learning for the teaching environment. They brought in two students to study this learning approach one who had already completed the course and one who had not and compared how they both engaged. Learning through the game has been proven to engage students and prefer it over the traditional way of learning with pen and paper. They tested their game on a class of students who were pursuing or who had already completed a computer learning course and found that it had many benefits. Students who had their diploma already found it just as useful as those who were only starting in the course. This study shows that game-based learning is greatly beneficial and is a good alternative to traditional teaching. It helps the student understand difficult topics more and is more fun which helps them to engage in the game where they would not be engaging in class. This study also showed how willing other students were to help other students who were stuck and made students eager to play the game because they wanted to further their progress and see where it brought them. The study did have many limitations like it would not guarantee success in the long run, but it did show that game-based learning engaged student and that it should be more implemented into learning to help students when they are unable to tackle certain tasks that have been asked of them in their course.

Theme 1 - Animation Technology

ever-changing technology and to keep that traditional animated feel to your game, which is difficult because having a realistic-looking game with the traditional animation feel and movement is difficult because to achieve realism you must have a realistic feel to your game. It is known amongst lots of people that these characters are not real but the visual realism technology has made them feel as though they are and make every day people feel more connected to the animation. The main goal of realism is to make it feel real and that it is as close to live like as possible. new technologies, the seduction of realism becomes better every year and more accessible to more game developers to help bring the game to life and help the audience feel as though they are playing a simulation of life. They show how they make the real expressions on a real face then convert it to a synthetic using bids which converts the wrinkles over to the synthetic face for the facial animator to recreate. Game developers use select rendering making more items higher quality than others to make the player hyper-aware of that part of the game making it feel realistic without taking away from the rest of the environment of the game and keeps the "real-life simulation" elements of the game which keeps the game intrigued and wanting to play and explore more. to make an environment feel more real it must have imperfections that you would see in everyday life like scratches. A game with more imperfections will feel more real and like it is a simulation in real life because everything around us is not perfect. Game developers have many ways of bringing a game to life and realism are one of the harder ones to achieve because you want do not want to feel like you're in a game and in serious games, the realism element is what makes a game feel like it is a simulation of real life. The game has a quite simple animation to it which make it much easier for the game developer to experiment with the game without having to spend as much time on it. the importance of joints and not blend shapes. Joints can achieve much more motion and tracking. The joint technology makes it accessible for all to create a functioning game without having to spend thousands on high-end equipment to make a game that works. available for more game developers to create a face that moves in a way that helps the player to connect with the character volume preservation gives the animation a much smoother look and make the animation feel more realistic technology is ever-changing it is important to always be on top of it and to not fall behind because it could leave you with a game that is a failure and not enjoyed by consumers. Image processing is an especially important part of game animation and some of the key features are as such feature extraction, image edge detection, image binarization, and image enhancement. the softness of pixels makes images appear brighter and liven them up a bit more.

Theme 2 - Elements of Animation

exaggerated movements play a big part in making the game feel more realistic and “alive” detail about voice and how to make a voice more realistic and how the shape of the mouth does not match up with the speech. Wrinkles also play a big part in making the animation of the face feel more real and more human. The more realistic animation feels the more the player can connect to the character. All the different movements for facial animation bring the character to life. The more realistic a game is the more likely the audience will relate to it inciting that violence and higher blood pressure giving the audience that rushes that they may not have experienced if the game wasn't as realistic. The higher geometric realism a game has made the audience enjoy the experience more and feel more engaged in a realistic environment. The higher geometric realism it gives the objects in the environment which bring it to life and add that extra element of a real-life simulation. One of the key elements of making a game feel more real is the use of our 5 senses. Sight, touch taste, hearing and smelling all need to be simulated in a game to make a serious game feel more realistic and is a simulation of a real-life situation. Facial animation is an especially important feature of the character in your game and these assets should be considered when creating your Character. pixels can make the image processing feel fuller and give it that more lively feeling that is needed when playing a game to be more immersed. The environment needs to be felt when creating a game and not just focusing on the character the environment of the game can change how a player is feeling and if they should be more aware or relaxed and happy depending on the game you create. the student understand difficult topics more and is more fun which helps them to engage in the game where they would not be engaging in class

Theme 3 -Effects of Animation on the player

a static emotionless face is less attractive. although violent games do stimulate aggression the more realistic a game does not play a factor, if a game is violent it will make a person more aggressive. The rate of aggression is faster in a realistic game rather than an unrealistic video game. They have also done a test on heart rate and violent games do affect the player's heart rate but do not affect their temperature. users got a better experience with a high geometric realism in their game. Better graphics meant that users got a better experience because they feel as though it was like real life rather than a bunch of images that they could move around in. the audience was so engaged in the test of a higher geometric realism. After all, everything around them felt more real and that they were actually in the game and not just playing one. Low geometric graphics are a good alternative and will still keep the audience engaged and maybe more accessible to those game developers who can't afford a higher geometric realism.

Theme 4 -Animation in E-Learning

e-learning is a new way of teaching.e-learning can be helpful for students because it is accessible to all and is more convenient and less expensive.The dependency on Kinect is not good because it is expensive to purchase and most students do not have access to a Kinect device which is one drawback its bland interface how it would not attract school kids who are wanting to learn online. They found key features that they felt were necessary for an e-learning game and implemented them to make it more fun for school learning students. Animated game learning is found to be more beneficial than your traditional way of learning. It adds the element of fun that traditional learning does not have. Animated games help the student to picture what they are doing rather than looking at it on a page or doing it all in their head and getting confused where the animation will show the student what is happening. Games are every growing and are only getting better which means there are more opportunities for game developers to make games based around teaching and learning that can be greatly beneficial. Animated learning materials can also improve the speed and efficiency of students in a learning workspace and may find them much more beneficial in the Long-run, as they can always return to the game to refresh their mind and element of a challenge and having fun, is there which wouldn't be present in traditional learning. Animation also supports teaching with visual learning and symbolic learning as it helps students put a visual in their head and remember Symbols Learning through the game has been proven to engage students and prefer it over the traditional way of learning with pen and paper. They tested their game on a class of students who were pursuing or who had already completed a computer learning course Students who had their diploma already found it just as useful as those who were only starting in the course.game-based learning is greatly beneficial and is a good alternative to traditional teaching.also showed how willing other students were to help other students who were stuck and made students eager to play the game because they wanted to further their progress and see where it brought them. game-based learning engaged student and that it should be more implemented into learning to help students when they are unable to tackle certain tasks that have been asked of them in their course.

Theme 1 - Animation Technology

Technology is ever-changing and traditional animation is slowly fading out and realism has become more and more popular within the gaming developing sphere. Technology is developing into something better every year. This means that games are just getting more and more realistic. Technology brings a game to life and helps game developers produce a game that feels like a simulation. To make a game come to life it's important to add some imperfections that you would see in everyday life like a stain from a mug on a wooden table or scratches on glass. Technology is always evolving and helping games come to life.

Theme 2 - Elements of Animation

When it comes to animating your game there are many factors that you may have to consider that you didn't think about before creating your game. The face of your character is what is most important when creating your character. The way its mouth moves and how it faces wrinkles when its speaking helps the audience to connect more with the character of your game. The less realistic your character is the less the audience can feel the emotional connection to your character. Higher geometric realism in your game helps the player to feel like they are playing a simulation of life. Higher geometric realism gives the items around you more shapes and texture to them to make them seem more alive. The main goal when it comes to your animation is to make it feel as real as possible to help the audience to connect your game.

Theme 3 -Effects of Animation on the player

When it comes to making a game how realistic your game is can have an effect on the player. Realistic games are becoming more and more popular in the gaming universe but this can cause aggression in your players if the game is too aggressive. The more realistic a game is the more aggressive the player of your game might be. A test was carried out on a group of players and violent video games are more likely to make the players more aggressive and has an effect on their heart rate because it gives them that rush. In conclusion the more realistic and violent your game is the more angry or aggressive it may make your audience who are playing your game so it should be taken into consideration when creating your game.

Theme 4 -Animation in E-Learning

E-learning is a new way to approach teaching, it's available to many students and helps them feel more engaged. E-learning is more likely to grab a students attention and helps them to retain the information more because they can relate what they learned to an image or something they remember from the game. A study was carried out amongst students who had completed the course and students who were interested in the course and both students found it extremely helpful and could retain a lot of the information. E-learning is a good substitute for traditional learning as it engages students and helps them to retain information easier.

Feedback Applied

Introduction

With every year that comes, the more impressive games get. From the environment, you play into how you control the game like VR. Games are constantly evolving and getting better. One key feature of game design is animation. The animation is creating an image into an illustration and realism are very similar but more detailed and true to life. Some examples of animation in games are Super Mario Brothers and Angry Bird and for realism its games like GTA V and Call of Duty. Realism has become extremely popular in the past few years and is slowly taking over the animation sphere as games are becoming more and more realistic and realism sells. But when it comes to animation there are many things that keep pulling people in keeping animation alive. Some may debate that one is better than the other but both have their advantages and how they affect the player but which one is considered 'better'?

Theme 1 - Animation Technology

Technology is ever-changing and traditional animation is slowly fading out and realism has become more and more popular within the gaming developing sphere. Technology is developing into something better every year. This means that games are just getting more and more realistic. (Hodgkinson, 2009) "A prime goal of animation is the illusion of life. In order to achieve this illusion, an illusion of reality is conveyed" The improvement of animation brings a game to life and helps game developers produce a game that feels like a simulation. To make a game come to life it is important to add some imperfections that you would see in everyday life like a stain from a mug on a wooden table or scratches on glass. Technology is always evolving and helping games come to life, especially in the aspect of animation.

Theme 2 - Elements of Animation

When it comes to animating your game there are many factors that you may have to consider that you did not think about before creating your game. The face of your character is what is most important when creating your character. The way its mouth moves and how it faces wrinkles when its speaking helps the audience to develop an emotional connection with the character of your game. (Maddock, Edge and Sanchez, 2014) "the most important aspect of facial animation is visual speech". The less realistic you character can prompt the audience to feel less emotionally attached to the character. Higher geometric realism in your game helps the player to feel like they are playing a simulation of life. Higher geometric realism gives the items around the player more shapes and texture to them to make them seem more realistic. The main goal when it comes to your animation is to make it feel as real as possible to help the audience connect to your game.

Theme 3 -Effects of Animation on the player

When it comes to making a game how realistic your game is can influence the player. Realistic games are becoming more and more popular in the gaming universe, but this can cause aggression in your players if the game is too aggressive. For example, games like GTA V would have these effects on the player. Games with guns and knives are more likely to make your player violent. (Barlett and Rodeheffer, 2009) "The more realistic a game is the more confrontational the player of your game might be. graphics quality should be highly related to the probability of seeing video game images in real life, because less pixelated images make such images appear clearer helping players interpret the attributes of the video game as resembling real life." A test was carried out on a group of players and violent video games are more likely to make the players more hostile and influences their heart rate because it gives them that rush. In conclusion the more realistic and violent your game is the more angry or assertive it may make your audience who are playing your game so it should be taken into consideration when creating your game.

Theme 4 -Animation in E-Learning

E-learning is a new way to approach teaching, it's available to many students and helps them feel more engaged. E-learning is more likely to grab a student's attention and help them to retain the information better because they can refer what they learned to an image or something they remember from the game. A study was carried out amongst students who had completed a course and students who were interested in the course and both students found it extremely helpful and could retain a lot of the information. (Taylor, Pountney and Baskett, 2008) "students participating in the experiment reported that the animated learning materials could improve their speed of learning the topics presented". E-learning is a good substitute for traditional learning as it engages students and helps them to retain information easier.

Conclusion

When it comes to animation vs realism, which one is considered 'better' is all based on preference. As we found out realism can become very realistic and have been shown to give people spurts of energy when playing games like GTA V. But realism also has its perks like making the game feel more like a simulation of life and helping those playing feel more connected. When it comes to the animation you may feel a lack of that connection but animation plays a big part when it comes to electronic learning. Animation in electronic learning has proven that it has many perks and helps those who learn put an image to what they are learning. Both realism and animation excel more at one thing that the other may not. That's why I feel as though it is not up for debate which one may be considered better because both hold their own in what they are trying to produce.