# The Impact of Animation on Children's Education

**Abstract:** With the development of animation, it is now widely used in games, movies, advertisements, and other forms of media, especially targeting children and adolescents. However, when it comes to children's education, animation has both positive and negative effects. This article attempts to discuss the impact of animation on children's education regarding its representation as well as advising on the use of animation to everyday media in order to promote children's development.

Key words: animation; children's education; knowledge acquisition; aesthetic influence;

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# 1. Introduction

#### 1.1 Animation

In recent years, the animation industry has experienced rapid development. Animation utilizes computer technology to generate digital images in a three-dimensional state(Yang et al., 2022). Since the early 1990s, animation has gradually become a branch of mainstream film due to its unique expressiveness(Smith and Hamlyn, 2018). Over time, animation, as an important form of media, has had a profound impact on all audience and is widely used in daily life(Wang and Zhong, 2023).

#### 1.2 Animation among children

Children are the most important audience of animation. The children's animation industry has a very high value in the global market and constitutes a crucial segment of the film, television, and advertising industries(Dobson et al., 2019). Children's animation not only serves an educational purpose but also preserves the innocence of childhood while providing considerable entertainment(Leung et al., 2019). Despite its positive impacts, some negative effects may also arise.

# 2. The positive impact of animation on children's education

## 2.1 Sensory stimulation and Language development

Compared to static images and text, animation can enhance visual and auditory sensitivity to knowledge in the short term, which is helpful for language development. Numerous studies and surveys have proved this phenomenon. For instance, in a study involving the use of brain neuroanatomy animation for teaching, a questionnaire survey of 102 students was conducted. The results showed that suitable animation can facilitate students' understanding of neuroanatomy and enhance their memory retention(Lone et al., 2018). In another study, after 20 weeks of instruction of the Chinese language, students who used animation to demonstrate the strokes of Chinese characters showed significant improvement in their sensitivity to these characters. However, there are certain limitations of this study including its suitability primarily for traditional learners(Xu et al., 2013). Additionally, the effectiveness of animation is effected by the duration of exposure(Berney and Bétrancourt, 2016). A study conducted on 698 children, representing the most traditional group of learners, further

highlighted the sensory impact of animation. Indeed, animation serves as a tool that significantly enhances understanding(Schlosser et al., 2022).

#### 2.2 Cognitive development

Many animation contents are educational. These positive contents contribute positively to children's mental health and help them acquire knowledge. Many of Hayao Miyazaki's animated films focus on environmental protection, advocating the harmonious coexistence of human and nature. Children gradually develop environmental protection awareness while watching these movies(Pan, 2020). Surveys indicate that 76% of children have watched Disney's animation series. Disney movies convey rich values, world views and moral lessons. Consequently, some children become more socially engaged, more willing to help others and closer to their families(de Leeuw and van der Laan, 2017). Furthermore, after watching certain Disney movies, girls are prompted to ask critical questions, which cultivates children's critical thinking(Garofalo, 2013).

At the same time, multimedia animation is also an important teaching tool in education. During the COVID-19 pandemic, students effectively acquired knowledge through multimedia animations, demonstrating its efficacy as a teaching aid(Hamzah, 2021). During teaching, many concepts are challenging to present to students clearly through traditional methods. For instance, teaching cell biology cannot be well achieved using only texts and microscopic images. However, various concepts of cell biology can be clearly illustrated by animation(Stith, 2004). Therefore, it is evident that children can acquire more insights and knowledge in a more vivid and concrete way through animation.

### 2.3 Creativity and imagination

The unique form of animation can influence children's aesthetics and stimulate their imagination and creativity. Creativity, an indispensable part of children, has a great impact on their positive growth and is crucial to their future development and even their entry into society. When children watch animation, they are exposed to content that is both complete and emotional. The creation of animation results from the joint efforts of animation directors, screenwriters, modelers, and others, incorporating the imagination of many people(Century, 2007). Scholars have studied changes in children's psychology during the viewing process and found that children develop more novel ideas. These richer imaginations help to improve creativity(Chen et al., 2022). At the same time, children cultivate creativity and imagination in the process of participating in the production of animation. This is a process of constantly exploring oneself and improving imagination, as children may take on roles such as dubbing and storytellers. Studies have found that many fourth-grade students are willing to participate in the creation of animation, providing opportunities for those with lower levels of creativity to improve(Chu et al., 2011).

### 2.4 Aesthetic Development

Animation helps improve children's aesthetic appreciation through its rich and interesting plots, distinct characters, and vivid background music. First of all, the music in animation encompasses diverse genres from different countries and cultures, such as jazz, rock and swing(Lazarescu-Thois, 2018). Different types of music serve different functions, but they are all carefully created by artists to enhance the understanding of animation(Taberham, 2018). The beautiful music can make people feel more emotional when watching animation, such as excitement, tension and sadness. This is also an enlightenment for children's appreciation of music aesthetics. Secondly, the design of animation scenes has a variety of styles. For example, the Chinese children's animation "The Return of the Great Sage" contains many traditional Chinese ethnic elements. These elements can effectively promote traditional Chinese aesthetics(An; and Tian, 2024). Similarly, the early Australian animation "Dot and Kangaroo" employs a unique visual language and rich color matching in the film, which depicts the beauty of New South Wales to children, with its beautiful mountains and tranquil lakes. These painting-like scenes introduce children to the beauty of nature. Australian animators continually explore better aesthetic forms to present to children(Rutherford, 2003).

# 3. The negative impact of animation on children's education

## 3.1 Mental health

While watching animation has a positive impact on children, there are also significant negative risks. First, at the psychological level, some animations use elements such as color and environment to reflect psychological issues like depression, which may adversely affect children's mood and mental state(Pinho, 2023). Over two-thirds of G-rated animated films include at least one scene of smoking or drinking without addressing the consequences. Early exposure to bad living habits may bring potential psychological implications for children and undermine their innocence(Goldstein et al., 1999). In addition, certain animation characters reinforce

stereotypes, such as cowardice of female characters and violence of male characters(Baker, 2004). Scholars have analysed the characteristics of elderly characters in 34 Disney movies and found that more than half are portrayed negatively, exhibiting traits like fragility, anger and forgetfulness, which may instill stereotypes about the elderly in children(Robinson et al., 2007). Such stereotypes may affect children's worldview and cause them to have negative emotions such as discrimination and prejudice against gender and occupation. Furthermore, adult animations also occupy a portion of the animation market, which contains some violent and sexual content(Mitkus, 2021). Although the audience of this type of animation is not children, if children are exposed to them, it can also somewhat affect their mental health.

### 3.2 Physical health

Children's physical health may also be affected by watching cartoons. Scholars have investigated the time and frequency of children watching TV and found that excessive exposure to electronic devices can negatively impact their eyesight. Such decline in vision is particularly pronounced during the growth and development stages of children(Bener and Al-Mahdi, 2012).

# 4. Methods that have a positive impact on children in animation

In order to maximize the positive impact of cartoons on children, animation creators should design children-friendly, appealing characters with distinct personalities, rich and well-structured storylines, moving music and educational value(Jacinto, 2021). At the same time, as an effective teaching tool, animation should continue to be used flexibly in school classrooms, and the content should be adjusted appropriately to play the most positive role. Furthermore, child guardians should actively participate in the process of animations-viewing. They should regulate the time children spend watching animations, and guide children to watch different cartoons at different ages and select good content. Given children's limited ability to distinguish right from wrong, parents should engage regular communication with their children, as well as making timely corrections and interventions for some misunderstandings as necessary to avoid the occurrence of psychological issues. Schools should also provide guidance for children on watching cartoons, teaching children to critically interpret the content, such as the understanding of commercial intentions in animated advertisements(Barnett et al., 2014).

## 5. Conclusion

Animation is loved by children for its interesting plots and cute and vivid animation characters. It is an indispensable partner for children's growth. Children are exposed to various forms of animation such as advertisements, movies and multimedia teaching tools. This has certain positive effects on children, such as improving cognition, enriching imagination and creativity. But there are also some negative effects, which may affect children's mental health and physical health. In general, the positive effects of animation are greater than the negative effects. Animation creators should explore how to play the positive role of animation in children's education, and educators should also apply animation to daily teaching. Children's guardians should also have active guidance on the use of animation.

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