



Animated Learning: Understanding Autism from the Perspective of Animation

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1. Introduction

The project which will be accounted for and discussed in this paper explores the benefits of using animation films in the educational work with children in autism-spectrum disorders. Throughout the project, we have approached the topic from within an inclusive educational framework. When inclusion frames educational work, it is crucial to focus on pedagogical aspects rather than directing attention primarily on the difficulties, which children experience. During the project described in this paper, we have examined how children in certain autism-spectrum disorders use educational animation. What do they learn and what does the teacher learn by making active production of animation films a part of the education?

2. Presenting the project's research question and academic context

As far back as the 1940s, psychologists Fritz Heider and Mary-Ann Simmel pioneered the concepts of social perception and causal attribution in a simple animation of geometric shapes. The animation demonstrates human tendency to create narrative and attribute causality and social intentionality to the geometric shapes. Four decades later, psychologist Simon Baron-Cohen developed a theory that people with autism would not attribute social meaning and intentionality to the animation, what is frequently referred to as "theory of mind". In the past two decades, the classic animation has been used in several experiments and psychological tests to determine whether a child shows signs of autistic traits. [<http://www.youtube.com/watch?v=vq6u4RFf7ck>, Klin 2000, Bowler 2000].

To animate means to put life and soul into objects and when one is creating or watching an animation film, one has the opportunity to learn and to become aware of what might cause different emotions and how these emotions are expressed. For instance, what makes a cup dance for joy or what makes a boot cry for sadness; in other words, using animation to show what makes someone feel happy or sad and how this can be shown.

We, Aase and Hanne, have for some years worked specifically with the potential of the animation media to test children's perceptions and reactions to short animated stories.

As children in autism-spectrum disorders have special difficulties reading and interpreting emotional expressions and social codes, we found it interesting to explore what use these children might make of the animation media. We formulated the following research question: *Is it possible to argue that children in autism-spectrum-disorders develop skills to read and understand emotional and social circumstances (through animation films)? Is it possible to observe a development in their linguistic skills – and might we see a development in their ability to tell stories?*

3. Project description and data collection process?

The project has taken place at Krabbeshus school, which is an all-day school for children with autism. At the school, two pupils were chosen, a boy and a girl, both with autism. At the start of the project they were 12 and 13 years old. The children were to make animation films twice a week and the teacher, who was to follow the pupils through the process, was given an introduction course. To begin with, the two pupils started creating their very own film. Working together about the storyline and the characters went very well: through discussions they developed a rough storyline and subsequently developed the characters and the background. As the boy was keen on computers, he naturally took the lead in the filming and the girl turned out to be a talented drawer and natural animator. As we were very impressed with the pupils' inspirational skills and their ability to work together, we also gave them quite free hands in the next film production. One extra task was added: the children were to take pictures of each other and use them in the film. They practised getting the different facial expressions right, took pictures, cut out the face and used them in the animation film - an exercise which was rather barrier-braking for both of them.

The approach was thus similar to the animations series "Transporters" developed by The Autism research Centre at Cambridge University. These educational animations use different kinds of animated transporting vehicles with images of real human faces expressing emotions. By combining animation with real faces, children with autism can more easily, and in a less intimidating and confusing manner, learn to read and understand facial expressions and emotions [Golan et al. 2010].

In our project, the children generally agreed to stick to the fantasy genre, which they were both fond of. They had ideas for the first scenes of the film, which were finished in the duration of the first two hour lesson. The work continued at the next lesson. The pupils worked independently – they consulted us and the teacher, but mostly they figured things out themselves. The story developed from each lesson, taking some surprising turns and the children had fun figuring out what might happen next.

The most important data consists of observations during our participation with the children in the film making process. In addition to this, the children were tested using a WHISC test and a qualitative test, which examines



children's ability to tell a story from images (TEMAS-test -"Tell me a story"). The tests took place both before the initiation of the project and when the project was completed.

4. Results

For the girl, one of the most striking developments which can be observed in her everyday life, is her readiness to learn. She has become more interested in learning, and she now takes drawing lessons every week and has become more committed to her practising, which she previously thought to be meaningless. She now practices particular elements of the art of drawing – and at home, her parents have noticed that she spends much time in the garden drawing pictures of the natural environment.

With regards to her reading skills, a significant development has taken place. The girl has dyslectic traits and has never had much desire to read – and even less to write. Today, the girl has become a keen reader and is primarily interested in historic novels and fantasy stories. Before the project, she struggled with severe anxiety and generally avoided unfamiliar situations, people or tasks. During the project, the girl's anxiety has been markedly reduced and she engages more readily when introduced to new situations or exercises. When given story telling exercises, she makes up stories and articulates them much more freely than before, due both to improved linguistic abilities and reduced anxiety. The following excerpt from the girl's TEMAS test exemplify her storytelling abilities:

...But from the top of my mind, what I think has happened is probably that he, the younger brother that is, the twin or who the heck that is, the brother, has been annoying her pretty hard, because he chased her around and she stumbled over that thing, what's it called, that lamp string thing, or whatever it is. So in a way, she has broken the lamp by accident and in a way he has annoyed her, so they are pretty much to blame both of them, in different ways...

The most evident development to be observed in the boy is that he is now able to see a story in a picture. When he was told to tell a story about the pictures of the TEMAS test before the animation project, he was only able to describe the objects in the image. He went through them all and said: "I see a woman, I see a bed, I see four children, I see a bicycle" etc. When he was tested after the animation project, he told stories like the following example:

"But William's mum suddenly came out of the window and said while she pointed to the left: "William, will you please bring this to your cousin". William grunted a bit. Er, "I would like to play with my friends!", he said. William's mum sighed and shook her head: "Should I go get dad?". William didn't want her to get his dad. His dad sometimes got really angry. He didn't want that. Especially not when his friends were there. "Okay then". William stumbled to the road, stumbled onto the road, but he had his balance".

In conclusion, the two children who have been the focus of this project has taught us to pay close attention to the following:

- It is easier for children to think up stories, as well as to learn how to tell and understand stories, when they are involved in the making of moving images.
- Working with moving images can reduce anxiety in children in autism-spectrum disorders, as the animation media builds up visual abilities and ability to focus on detail, which is often highly well-developed in children with autism.
- The animation media provides an opportunity to narrate and create, which many children with reading and writing disabilities lack.

5. The potential of the animation media to understand autism

We use the animation media in order to teach children to ascribe emotions to things [Klin, 2000]. Animation gives objects character – objects are turned into persons and shows us, what does it take to see/feel that – which becomes a way of teaching children with autism to understand personality traits, emotions and social interaction.

The word autism stems from the Greek autos, meaning self, and thus indicates a condition of being in ones own self. With this in mind, we wish to emphasise that understanding autism ought to start from the understanding of the pupil with autism herself/himself. The last decades have seen significant developments in the use of animation in tests and as a diagnostic tool in detecting and describing autism. Our aim is a related but different one, as we explore the pedagogical potentials of animation with children being not only at the receiving end of animation film, *but actively engaged in their production.*

Our study also indicates that there is great potential in animation for teachers and special needs educationalist and their interactions with and understanding of children with autism. Observing and participating with the children in the film making process gives the educationalist a new media to understand their pupils with. When the teacher sees the film and takes part in the process of creating the film, he/she is far better equipped to understand the world through the eyes of the pupil. And then the teacher can better discover how the educational interactions might begin and how they might develop.

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