

# Creativity, Autism and Individual Learning Styles

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# Introduction

Understanding the concept of individual learning styles enables teachers to support students in their learning process. Learners with Autism often have additional needs and teachers will adapt their delivery to suit the learners in accordance with what works best. In my research study, I will look at Creativity, Autism and Individual Learning Styles and how they relate to each other. As a creative person, I have an interest in these 3 areas, especially autism and teaching as I want to be a teacher in the future.



(Towell, 2019)

## Creativity

According to the dictionary, creativity means “the use of imagination or original ideas to create something; inventiveness” (Lexico, c2020). Creativity can be anything from your imagination. Everyone is creative at some point in their life, and sometimes without realising it. Creativity can be shown by many different actions, thoughts and ways of communication.

Orin Davis wrote about the different types of creativity and how it is considered to be emotionally and opinion based. He argued that 2 people can draw something, like a cat, but then one drawing is very standard with normal features and the other drawing is very abstract and colourful. Trying to determine which drawing is more creative consists of a few things. It makes you question which drawing you would prefer to display and why but again everyone has different tastes and preferences. However, this suggests that it is personal opinion and how the drawing may effect you. Davis argued that, “Creativity, then, is a novel response to a task that is useful, appropriate, and/or valuable.” (Davis, c2020). This is a very direct approach to understanding what creativity is and what it's defined by but also how creativity is different to each person and how they see it valuable to them.

Davis goes on to define four levels/forms of creativity. These include;

- Mini-c creativity
- Little-c creativity
- Pro-c creativity
- Big-c creativity

The 'Mini-c creativity' is about personal insights into something. In contrast, 'Little-c creativity' is about interpersonal insights. 'Pro-c creativity' is professional contribution, and 'Big-c creativity' is to do with world changing contributions.

In contrast, Arne Dietrich argues a more psychological approach to understanding creativity. Dietrich is a professor of Cognitive Neuroscience, who published his research document 'Psychonomic Bulletin & Review' in 2004. Linking to Davis' argument, he also narrowed creativity to 4 different types. These 4 categories of creativity are organised by where in the brain it originates from.

The first category is 'Deliberate and Cognitive' where the person is very good at specific knowledge and tends to put a good plan of action in place. These people are able to adapt their research and use forms of experimentation and problem solving in the process. This characteristic tends to be found in the front of the brain in the prefrontal cortex.

The second category is 'Deliberate and Emotional'. These types of people are influenced by their emotions. This means that they tend to be sensitive and also prefer quiet spaces to be reflective about themselves and their work. According to Dietrich this type of creativity is found in the brain's amygdala. This part of your brain is responsible for the human emotions and also the cingulate cortex which processes the learning. It is more commonly known to be where your sudden burst of realisation and "A-Ha" moments are generated.

The third category is called the 'Spontaneous and Cognitive' which is normally recognised by Sir Isaac Newton, with his inspirational moment of being hit on the head with a falling apple, which led him to study the law of gravity. Beth Hendricks determines that, "Spontaneous and cognitive creativity appears when individuals have the knowledge necessary to get the job done" (Hendricks, c2020). Hendricks also states that spontaneous and cognitive creativity can appear in the most inconvenient ways and times. For example, studies have shown that many "eureka" moments and bright ideas happen when taking a shower. Jonah Lehrer, an American author who studied neuroscience, stated that, "a relaxed state of mind is absolutely important to be creative" (Widrich, 2018) and it is proven that you tend to be quite relaxed in the shower when you get spurs of dopamine released into the body. This form of creativity is based in the brain's basal ganglia, which effects the emotion of the person and their cognition. Hendricks also stated that, "This allows you to work deliberately on a project, for example, then stash it away in your mind and let the subconscious areas of your brain take over." (Hendricks, c2020)

The fourth category is called 'Spontaneous and Emotional' creativity. This is similar to 'Deliberate and Emotional' but is more relaxed and is guided by emotion. The creativity isn't structured but improvised. Picasso is a perfect example of this creative style because he expressed himself through his art work, especially when he was going through his blue phase, as it represented his emotional sadness and tragedy. This form of creativity is located in the amygdala, which has very strong influences on emotions in the brain.



(Appliedbehaviouranalysiseduorg, c2020)

## Autism

Autism is “a developmental disorder of variable severity that is characterised by difficulty in social interaction and communication and by restricted or repetitive patterns of thought and behavior.” (Lexico, c2020)

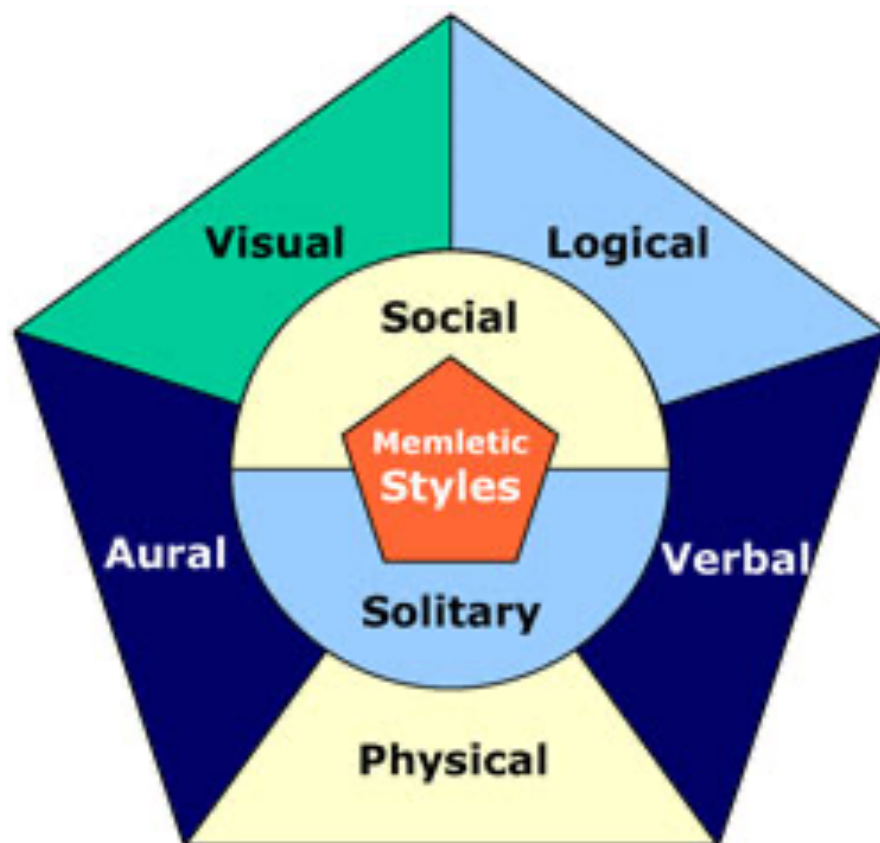
There are many different types of autism or disorders linked to autism. You cannot choose whether you have autism but thankfully more cases are diagnosed each year, which is creating an awareness of people with the condition. Years ago, autism was seen as not normal and some people even considered it to be a curse. Thankfully, in the modern day, people are accepting autism in a much more friendly manner and trying to help people with the condition as much as possible. This is linked to the study of the ‘othering’ concept.

“Othering is a concept used to define someone's own 'normal' identity by distancing oneself from the Other. With Other one means someone else and is therefore classified as different”. (Beer & Huttinga, 2012) Othering is a concept where people try to understand society and people who may get excluded or not fit into groups within society. In the case of national identity, it can involve segregation, a perfect example for this was when Hitler and the Germans outcasted Jewish people because their national identity was different from what was considered to be normal. This was due to religious reasons but Hitler also segregated people who looked a certain way, like having blond hair and blue eyes, or had a disability, like autism.

Othering has a lot to do with many different aspects of a person like their race, gender, ethnicity, and more. It is about defining someone into a stereotype that sadly people still believe in the 21st century. There are many more examples of othering, like how Americans segregated and discriminated against black people because of the colour of their skin. Another example is the treatment of women who didn't have the same rights as men. Thankfully people have changed over the years and accepted the change in society and have improved on both of these types of othering.

Autism is a huge part of 'othering' and often people with the condition still get isolated from what people consider to be 'normal'. Autism is a "range of genetic neurological variations that can present with different levels of sensory processing and communication ability" (Sobotka, c2020). The wide range of different styles of autism means that not everyone suffers with the condition in the same way. Even people without a neurological or physical condition differ from each other and approach tasks in the way that suits them best. So is there really much difference between someone with an autistic condition and someone who is 'normal'? The fact that people with autism get excluded from others, makes it normal to people without conditions, so if autistic people weren't excluded in the first place, then would it be considered 'normal' to have them mixed in with everyone else?

There are many different ways people cope with autism. A lot of people with the disorder like to have specific routines in place and like to follow plans. Others aren't able to speak and have to use other ways of communicating like sign language or writing. Most commonly they aren't able to follow simple rules or instructions and often get into trouble as their processing disorder is slightly different from the 'normal' person. Being autistic doesn't mean that they can't carry out tasks and think like people without a condition. For example, they can still be creative and come up with original and inventive ideas. Stephen Wiltshire is a British architectural artist who was diagnosed with autism at the age of 3. He created beautiful pieces of art of different landscapes and tends to listen to music to help stimulate his creativity. This links to the use of the auditory learning style used to help people in education. His successful art work resulted in him receiving a Member of the Order of the British Empire Award, which was given to him in 2006 by Queen Elizabeth. His work has been on display at places like London's Royal Opera Arcade. Other examples of well known people diagnosed with autism include Woody Allen an American director, writer, actor and comedian; Dan Aykroyd a Canadian actor, producer, comedian, musician and film maker; Marty Balin an American singer, musician and song writer; Susan Boyle a British singer who won Britains Got Talent in 2009; Tim Burton an American director, producer, writer and animator. This is only a small number of people who prove that people diagnosed with autism can be considered 'normal' and can even succeed more than someone without the condition.



(Learning-styles-onlinecom, c2020)

# Individual Learning Styles

It is widely recognised that each person prefers to learn in different ways. The preferred ways of learning can be categorised as groups of individual learning styles. Most people will have a mixture of learning styles but frequently one style is dominant. The style in which we learn can be altered to meet different situations.

The education system tends to rely on a relatively narrow range of learning styles, focusing on classroom instruction and examinations. This can be limiting for some learners who might prefer a more diverse range of learning opportunities.

It is important that individuals and learning providers recognise and understand how individual learning styles are a vital factor in the success of the learning. Wherever possible individual learning styles should be considered and catered for. This can help remove learning barriers and promote enjoyment and effectiveness of the learning experience. It is also good to encourage individuals to experiment and develop alternative learning styles, when it is appropriate and safe to do so.

Individuals can use multiple ways of learning but when other learners adopt the same learning style, it doesn't mean they will use it in the same way e.g. the verbal learning style may mean reading something out loud for one person but another may prefer talking and explaining to other people.

Individual learning styles is an approach that isn't scientifically proven and to some is considered to be a myth. Therefore, it is something that may provide guidance. According to the website 'learning styles online' there are seven main styles of individual learning. These include;

- **"Visual (spatial):** You prefer using pictures, images, and spatial understanding.
- **Aural (auditory-musical):** You prefer using sound and music.
- **Verbal (linguistic):** You prefer using words, both in speech and writing.
- **Physical (kinaesthetic):** You prefer using your body, hands and sense of touch.
- **Logical (mathematical):** You prefer using logic, reasoning and systems.
- **Social (interpersonal):** You prefer to learn in groups or with other people.
- **Solitary (intrapersonal):** You prefer to work alone and use self-study"

(Learning-styles-online.com, c2020)

The 3 more commonly known styles of learning include kinaesthetic, visual and auditory. However, educational theorist David Kolb researched learning styles and in 1972 and came up with the start of 4 main learning styles. "Kolb proposed that people fall on a matrix that measures how abstract or concrete they think, while also looking at how active or passive they are while learning" (Hultzman, c2020). Kolb identified the 'diverging' style, which is someone who prefers a concrete learning experience but also learns by gathering information through observation and reflection from other work and people. Opposite to this style is the 'converging' technique. This is where the person prefers the hands-on approach and learns through experimentation. The last 2 styles are 'accommodating' learners who are also very hands on and focus more on concrete learning, and finally there is 'assimilating' learning which is a very abstract and reflective style of developing and learning.

Kolb believes that being aware of the different learning styles allows teachers to provide more effective learning and instructions to different tasks. This also helps students learn, develop and have a better understanding of the best way they learn. In a teaching environment, not every lesson can be tailored to each individual learning style, although teachers can endeavour to set up the best learning environment for the children to develop i.e. setting up different areas in the classroom for group work, experimental work, independent study, etc.

The University of Leicester published an article that states “Learning styles were developed by Peter Honey and Alan Mumford, based upon the work of Kolb, and they identified four distinct learning styles or preferences: **Activist**, **Theorist**, **Pragmatist** and **Reflector**” (University of Leicester, N/A). They recommended that everyone should understand their learning style and look for opportunities to learn in their preferred style. Honey and Mumford developed a widely used questionnaire to help people identify their learning styles. They believed this knowledge would enhance their learning experiences.

Honey and Mumford’s learning styles are:-

**Activists** - like to learn by doing. They like to jump straight in and learn by experience. Activities for **Activists** include, hands on experiments, problem solving, puzzles.

**Theorists** - like to understand the theory behind actions. They like to gather and analyse information. Activities for **Theorists** include, statistics, case studies, background information.

**Pragmatists** - like to put learning to practice in the real world. They like to try things out to see if they work. Activities for **Pragmatists** include, discussion, problem solving, discussion.

**Reflectors** - like to stand back and observe. They like to consider different perspectives and draw conclusions. Activities for Reflectors include, Questionnaires, gathering feedback, observation, evaluation.

## Conclusion

In this research study, I have reviewed Creativity, Autism and Individual Learning Styles. I conclude that there is evidence that these relate to each other. Many people with autism have enjoyed success in the creative industries; artists, musicians and actors.

Creativity and expression can be visual, auditory and verbal, and these are all defined as Individual learning styles. My previous example of this was Stephen Wiltshire, a British architectural artist who has autism. When creating his artwork, he tends to listen to music which is the aural (auditory-musical) learning style. Listening to music, helps to stimulate creative ideas and gives him structure to work with. It is commonly known that people with autism like to follow plans and structures to help with their understanding and learning.

Teaching learners with autism has additional challenges and a creative approach might provide a solution for some. This is proven by Dr. Martin Doherty from the School of Psychology at the University of East Anglia, where he quoted that, “People with high autistic traits could be said to have less quantity, but greater quality of creative ideas,” (Wood, 2018). Researchers have discovered that there are many different forms of creativity and they can be located in different parts of the brain. Those people diagnosed with autism, might not always be seen as creative, but does this need further exploration? There are studies showing that people with autism tend to prefer using one particular style of learning, than using multiple. This helps people with autism to absorb new information and have a better understanding of the world. In order to help the students, the teacher needs to identify what learning method they prefer, so testing out different techniques, will allow them to narrow down what leaning styles work best with each student.

I’ve researched into these areas and its led me to look at the question ‘How can design be used to identify individual learning styles in children with autism and how can this information be used to promote creativity?’

# Bibliography

Appliedbehaviouranalysiseduorg. c2020. 5 Acclaimed Visual Artists with Autism. [Online]. [14 May 2020]

Beer & huttinga, E.D.B.&.R.H. 2012. Othering. [Online]. [9th April 2020]

Davis, O.D. c2020. What Is Creativity? - Definition & Exercises. [Online]. [14th March 2020].

Hendricks, B.H. c2020. Types of Creativity: Descriptions & Examples. [Online]. [17th March 2020]

Hultzman, R.H. c2020. What are Learning Styles? - Types & Concept. [Online]. [30th April 2020].

Learning-styles-onlinecom. c2020. Overview of Learning Styles. [Online]. [24th April 2020]

Lexico. c2020. Definition of creativity in English:. [Online]. [13th March 2020]

Lexico. c2020. Definition of autism in English:. [Online]. [6th April 2020]

Sobotka, M.S. c2020. Autism & ADHD. [Online]. [24th March 2020]

Towell, P.T. 2019. Creativity + innovation = change. [Online]. [14 May 2020]

University of leicester . N/A. Honey and Mumford. [Online]. [12th April 2020].

Widrich, L.W. 2018. Why We Have Our Best Ideas in the Shower: The Science of Creativity. [Online]. [4th April 2020]

Wood , J.W. 2018. A Link Between Autism and Creativity?. [Online]. [2nd May 2020]

## Further reading for the independent enquiry links:

<https://www.appliedbehavioranalysisedu.org/5-creative-geniuses-whose-autism-contributed-to-their-success/>

<https://medium.com/@devonprice/autism-is-a-creative-boon-b9974e137099>

[https://scholar.google.co.uk/scholar?q=autism+learning+styles+and+creativity&hl=en&as\\_sdt=0&as\\_vis=1&oi=scholar](https://scholar.google.co.uk/scholar?q=autism+learning+styles+and+creativity&hl=en&as_sdt=0&as_vis=1&oi=scholar)

<http://www.spero.academy/blog/1615520/autism-in-the-classroom-learning-styles>

<https://www.theguardian.com/society/2015/aug/22/autism-creative-thinking-study>