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Digital Tools

CREATIVITY



Creativity

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CREATIVITY

“Electricity is not only present in a magnificent thunderstorm and dazzling lightning, but also in a lamp; so also, creativity exists not only where it creates great historical works, but also everywhere human imagination combines, changes, and creates anything new.”⁽¹⁾

Lev VYGOTSKY

INTRODUCTION

The word creativity is very often used in the 21st century that’s why it’s becoming increasingly difficult to find the right definition, since there are hundreds of definitions to be found across different sources.

A very generalised and simple definition is – creation of something new and of value. In Robert Sternberg’s words, the production of “something original and worthwhile”

Etymologically the word comes from the Latin term *creo*, which means to create, make. The word “create” appeared in English as early as the 14th century, notably in Chaucer, to indicate divine creation (in *The Parson’s Tale*).⁽²⁾

Because of the Christian influences, as well as the influences of Judaism until the Renaissance period this term is appearing only in the meaning of divine creation; only the Renaissance begins to acknowledge the human capability to create. This change in thinking came gradually, thanks to the philosophical stance of Humanism, mentioning of the term creativity gradually increasing in the period of Enlightenment. As a direct and independent topic of study, creativity effectively received no attention until the 19th century, under the influence of Darwinism.

Various contemporary authors have been trying to analyze and define creativity from their professional point of view, heavily influenced by the development of different fields, not just psychology. There was a huge development in research of the brain function; modern technology has enabled new paths in the research of neurological processes, which is the foundation of development of artificial intelligence.

Perhaps the era, when creativity is no longer a human prerogative, is not so far away, but in the meantime it’s not possible to talk about the creativity of machines or computer algorithms.

As it turned out, the results of IQ tests are not relevant for the field of creativity, that’s why various tests emerged which measure levels of creativity. But since there’s no consensus about their relevance between different professional fields, we’re not going to quote any of them in these materials.

WALLAS’ MODEL OF CREATIVE PROCESS

Based on the published discussions by van Helmholtz and Poincaré, Graham Wallas published his first model of creative process in 5 stages in his work *Art Process* (1926):

- 1 - Preparation (preparatory work on a problem that focuses the individual’s mind on the problem and explores the problem’s dimensions),
- 2 - Incubation (where the problem is internalized into the unconscious mind and nothing appears externally to be happening),
- 3 - Intimation (the creative person gets a “feeling” that a solution is on its way),
- 4 - Illumination or insight (where the creative idea bursts forth from its preconscious processing into conscious awareness);
- 5 - Verification (where the idea is consciously verified, elaborated, and then applied).

Wallas’ model is often treated as four stages, with “intimation” seen as a sub-stage.⁽²⁾

THE 4 C MODEL OF CREATIVITY

Among many later researches of creativity the 4C model of creativity, mentioned in many sources, stands out, due to a very wide understanding of the term creativity. This model is based on a contemporary presumption that all of the people were born creative, but their creativity is expressed on different levels.

James C. Kaufman and Beghetto introduced a “four C” model of creativity:

Mini-c

(“Transformative learning” involving “personally meaningful interpretations of experiences, actions, and insights”),

Little-c

(Everyday problem solving and creative expression),

Pro-C

(Exhibited by people who are professionally or vocationally creative though not necessarily eminent) and

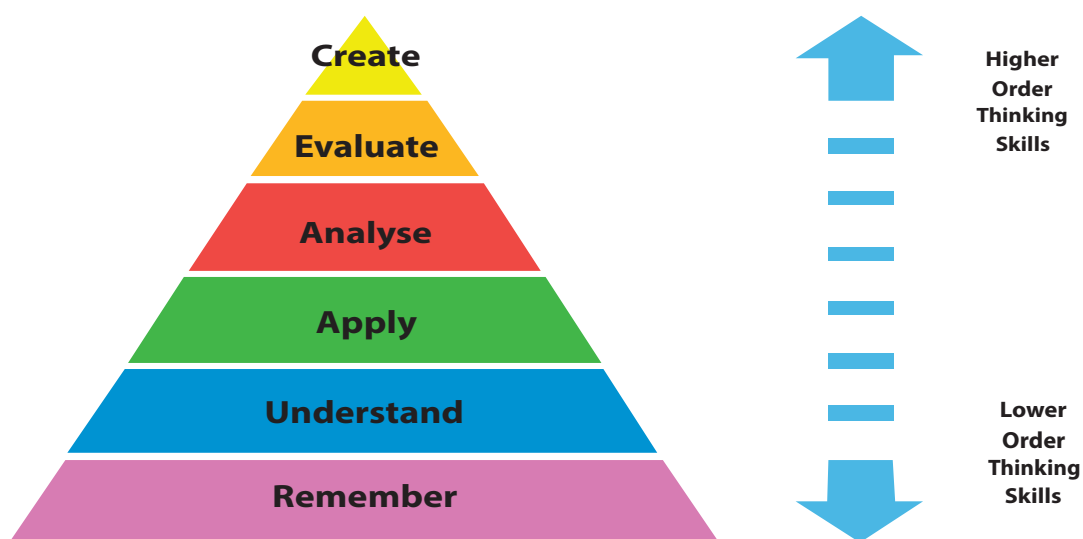
Big-C

(Creativity considered great in the given field).

This model was intended to help accommodate models and theories of creativity that stressed competence as an essential component and the historical transformation of a creative domain as the highest mark of creativity. It also, the authors argued, made a useful framework for analyzing creative processes in individuals. ⁽¹⁾

REVISED BLOOM’S TAXONOMY

A revised version of Bloom’s original 1956 taxonomy by Krathwohl (2002, p.212–218) includes creativity in the taxonomy and places creativity above evaluation as a higher order thinking skill. An alternative, and probably more accurate, representation would be to include creativity as a process involved in skills at all levels represented in the taxonomy, and increasingly so with higher order skills.



A revised version of Bloom’s taxonomy ⁽¹⁾

CREATIVITY AS PART OF ENTREPRENEURIAL THINKING

Creativity = New/different/surprising idea
Innovativeness = Creativity + Realisation
Entrepreneurial thinking = Innovativeness + Benefit
Entrepreneurship = Entrepreneurial thinking + Business model ⁽³⁾

One of the key competencies in entrepreneurial thinking is creativity, which is not only an important part of creation of new products or services; creativity is part of every improvement of a process, organisation of work, relationships or communication.

The term creativity doesn't only mean to conceive something new and unknown until now, it also includes the ability to improve. This has been emphasized many times by Steve Jobs, the founder of Apple, who is considered to be one of the most creative people of our era. He said that creativity is just connecting things. ⁽⁴⁾

Design thinking

In the 21st century the term design thinking is representing a particular way of thinking used by designers during the process of development of a new product or a service. However this broad term doesn't say much. The first person to use the word design in connection with a thought process was scientist Herbert Simon in 1969, economist, sociologist, psychologist and a Nobel Prize laureate for economics. According to him design thinking is similar to synthetic thinking, which stands in opposition to analytical thinking and means to connect the ideas into a complex entirety. ⁽⁷⁾

The enterprising mindset

How important is creativity in the modern entrepreneurial thinking can be seen in the description of the concept of "enterprising mindset" in the materials for the competition ENTRUM, the Youth Entrepreneurship Ideas Contest and Development Programme. ⁽⁵⁾

The enterprising mindset is defined as a personality which:

Acts wisely:

Is determined to achieve the goal, is able to adequately assess him or herself and the consequences of choices made, is able to consciously use resources, is able to establish relationships and cooperate

Thinks creatively:

Is curious, open and willing to learn; is able to find new ideas/solutions; is able to solve problems creatively and can learn from mistakes; is able to notice and use global opportunities

Initiates courageously:

Is self-motivated and independent; dares to dream big and ambitiously and set high goals; wants to achieve the best; dares to make decisions and take risks

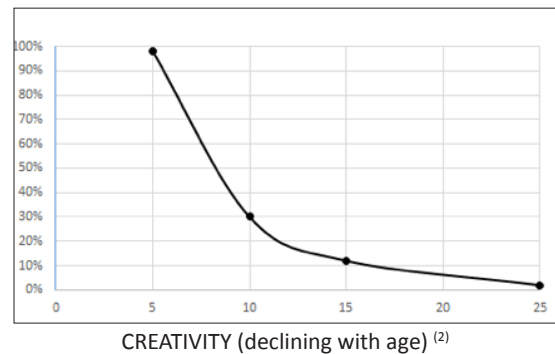
Takes responsibility and cares:

Takes into account people and the surrounding environment, acts responsibly, and copes with failure and uncertainty

DIMINISHING OF CREATIVITY

World renowned education, creativity and relationships specialist Ken Robinson proclaimed in a TED conference (Technology, Education, Design), which was seen by hundreds of millions of people around the world, that education is killing unconventionality of children.

“98% of all children are born very creative, after the education process only 2% remain so.” The reason according to him lies in the repression of unorthodox thinking at school and the consequence of it is that the children don’t want to stand out in any way. A child is a tabula rasa and they’re not frightened of being wrong. “If we’re not prepared to make mistakes during our work process, we won’t be able to produce anything innovative and original. The adults are stigmatized, mistakes are difficult to accept.” Ken Robinson received many awards for his work and was made Knight Bachelor by the Queen, has travelled through most parts of the world and found out, that all of the educational systems in the world follow the same hierarchy of subjects. On top are mathematics and languages, followed by social sciences, and art is on the very bottom. Many talented, brilliant, creative people think that they’re not, because other competences were being valued at school. ⁽⁶⁾



Other sources also quote different statistics, even though every contemporary scientist observes diminishing of creative capacities during the educational process.

Research shows that creativity is boosted in the period of adolescence. The brain in that period is mature enough, so that motivation and creative capacity, that include abstract cognitive mechanisms along with formation of the personality, autonomy and independent thinking, can lead to mature creative results. (Bregant 2012). If we flip through biographies of some of the famous artists or scientists, such as Picasso, Matisse, da Vinci, Mozart, Goethe, Leibniz, Darwin or Pascal, to name but a few, we realize that their first important works start to emerge in their late teens. We are often under an impression that creativity declines with adulthood, but most important and fully developed ideas and the most famous works originate in the age that comes after adolescence. Really creative people are productive since adolescence and practically until their death – their work and create in the way as they learned in their youth.

The results of intelligence tests have shown increased achievements for a few score points each decade, which is called Flynn effect (Flynn, 2007). According to research there is evidence of reversed effect; a reversal in creativity has been perceived in the last decades. Children enter school very enthusiastically, that enthusiasm starts to decline halfway through primary school until school only becomes necessary evil.

Many researchers described characteristics of development of creativity (Vigotsky 1990, 1994; Piaget, 1950). Smith and Carlsson came to a conclusion in their research, that real creativity can be identified only after the age of 10; if creativity does appear before that age, it’s coincidental. (Smith and Carlsson, 1983). The same researchers detect a decline in creativity in 12 and 13 year olds, which they attributed to compulsive strategies and behaviours; creativity is on the rise again in 16 year olds, which according to their research can be attributed to better control of anxiety and a general increase of cognitive capacities. (Smith and Carlsson, 1985). ⁽³⁾

BOOSTING OF CREATIVITY

New ideas can emerge under the influence of suitable, encouraging environment, that doesn’t penalise wrong answers, that creates a safe and friendly atmosphere and provides sufficient encouragement to awaken curiosity and desire for new discoveries and is fun at the same time. However it’s not possible without an effort: hard work, enough time, immersion and passion, without any of the quick and immensely popular instant solutions.

Interestingly the newest research shows, that creativity cannot be separated from the social context (Haslam et al., 2014). In difference to creativity, that is supposedly some sort of divine spark, given only to a select few and conceived in silence and solace, the researchers today think that belonging to a certain social group is essential in order to generate ideas and also recognize their value. Let’s just think of the Impressionist movement,

which consisted of many excellent artists such as Monet, Degas, Renoir and many more. They only achieved a breakthrough in Paris as a centre of art in that period as a group. Why do you think that Silicon Valley and Palo Alto are the cradles of creativity in our time?

Not just the environment, also the social identity determines one's motivation and enables the fulfilment of a person's goals. Picasso as a cubist wouldn't be so motivated to create a war painting. But as a declared antifascist and as a Spaniard he created Guernica.

Capability to cooperate, to be "one of us", greatly determines success. A person can be very creative, but if the work remains unperceived, it's not of great use. If we remember the Beatles, The Rolling Stones, Bauhaus, Bloomsbury, we can see that belonging to a group resulted in flourishing of ideas. ⁽⁴⁾

Even though belonging to a group can stifle creativity and encourages submission to common ideas, on the other hand it also enables selection of ideas, good and bad, inspires argued defence of own ideas inside a group, we'd like to belong to. Because of its numerousness, belonging to a group can also lead to changes on a broader social level. (Haslam et al., 2014)

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