

## Defintion of Creativity and Access to Creativity

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### Abstract

Mankind is driven by creativity. Creativity and innovation are a motor to take different perspectives, be open minded and to generate new ideas, objects, and solutions. Due to the big amount of disciplines there is a huge range of interpretations, of definitions of creativity. The curricula within secondary and higher education very often do not consider the importance to support and apply creativity, even if the students are expected to generate innovative solutions. Some disciplines offer creative related subjects, others do not. This leads to different definitions of creativity on the one hand, but on the other hand it leads as well to different accesses to creativity. Creativity includes many partial aspects such as creative methods and their application. These aspects are not just part of the great summation of creativity, they are as well creativity themselves. It is assumed that there does not exist any discipline offering all aspects of creativity at the same time. Different perspectives and approaches are related to the various disciplines. This offer is depending on the definition and deeper understanding of creativity within the different disciplines and it leads to discipline specific descriptions and comprehensions of creativity. The following research paper offers first results of international and interdisciplinary case studies which were carried out with engineering, architecture, law, arts, medicine, science, musician, humanities, social sciences, language, and linguistic students, academics and professionals. More than 100 students, academics and professionals offered a detailed description of their understanding of creativity within their disciplines and their access to creativity, on the one hand, concerning their professional sphere, and, on the other hand, concerning their private sphere. The overall goal of the research project is to collect the different definitions of creativity and as well the various accesses to creativity, firstly, and, secondly, to compare them, get the points where they match and, finally, discuss the possibility of shared knowledge.

## 1 Introduction

The paper about the definition of creativity and the access to creativity as well as the paper concerning the supporting and hindering factors of creativity are based on the same research project. Therefore, the introduction chapters are about the same for both papers. The authors hope that this does not lead to any confusion or misunderstandings.

### 1.1 Scientific Background

When discussing about creativity and innovation we noticed a lot of questions without answers. As already mentioned in the abstract creativity is a very important factor and part of our life, it is even more, it is a condition sine qua non. We do not live without creativity, even if some of us claim to be not creative at all. Creativity *is in the air*, creativity *is all around*, in our everyday life as well as in our professional sphere. Creativity includes many meanings like methods to find and realize solutions, express feelings, or to find a work-life-balance. These are just a few examples where we meet creativity.

All of us know that children are very creative, in very different ways, even animals are when developing solutions to reach a goal. If we take a look and grown-ups, at professionals, we notice that they react within a certain process in a well-defined manor. What happened is, that we are trained to stick to certain rules and to think within these processes. This leads to the consequence that we do not see the bigger picture, we do not look for new ways of problem solution e.g. The overall conclusion is we do not look beyond our own nose. Sometimes this challenge of unsolvable tasks leads us to use our creativity, use our ability to see beyond our own nose.

Professional sphere requires innovation. Innovation itself requires creativity, intuition. There does not exist just one definition of creativity. For all of us creativity is something different, depending on our professional sphere, our socialization, our interests, talents, and feelings on the one hand. But on the other hand, the definition is depending a lot on our professional background. Some of us got a lot of experience with creativity during their education, school, and studies. They are used to creative methodologies or even work in a creative atmosphere. At the same, some people have a deep cut between creativity and professional sphere and maybe just use creativity within their leisure time.

Creativity and innovation are just one requirement of the producing environment, of our professional sphere. We are also required to work interdisciplinary. Therefore, the authors asked themselves, if we as mankind can learn from each other. And going one step further we express the hypothesis that interdisciplinary collaboration and innovative processes within all areas will just be really successfully if we offer our different definitions and knowledges about creativity to the working group. This mutual input leads to commonly lived creativity which enables us to take new perspectives, to go new ways of using creativity as a team. This kind of team work is an important founding, a basis to develop a collective competence.

To verify this hypothesis the authors are carrying out a research project. The main goals of the project are

- goal 1: *to gather different definitions and understandings of creativity*, different perspectives
- goal 2: *to gather supporting and hindering factors of creativity*
- goal 3: *to gather experiences of applications of creativity to other discipline, interdisciplinary team work to develop a collective competence*

To reach this goals different qualitative methods are applied. On the one hand, a lot of people are invited to write a short paper, 3 to 5 pages, to explain their personal perspective and experiences of creativity. This papers are not required to stick to scientific rules, the form of application can be chosen by the different authors. Due to the fact that many of the probates are not used to write free texts, we offer a number of questions to think about like: Did you meet creativity during your studies or education? How does creativity show up in your professional sphere? Do you look for a balance in creativity for your job? What does it mean for you – creativity? Where is it missing? What part of your perspective of creativity would you like to share?

Additionally the authors carried out interviews and focus group interviews. The results of these papers and interviews will be published soon.

The focus of this paper are the definition of creativity and the access to creativity.

### *1.2 Limitations and state of the research work*

This research work concerning creativity is, thereby, based on the analysis of extensive data of an interdisciplinary survey. The participants are out of very different disciplines, out of professional sphere, politics, art and culture, as well as out of creativity sciences. This research work is still going on. Therefore, this paper presents first results. At this time there are no final results, just empirical data underlining existing theories and approaches as well as empirical data leading into new directions, offering new knowledge. For this reasons the authors do not give a special, embarrassing definition of creativity, but offer and point out overall external conditions.

## **2 Creativity**

### *2.1 General Definition of Creativity*

The starting point for getting an understanding of the term creativity is the origin and the meaning of the word creativity itself. Therefore, at this point a simple definition like offered by Wikipedia is sufficient. The use of creativity is defined by its origin from Latin by the verb *creare*, which means to invent something, to generate something, to produce something as well as to choose something, on the one hand, and, on the other hand, the second root of the term creativity is based on the Latin verb *crescere* which means to happen and to grow. This ambiguity of creativity between activity and passivity can be seen in modern definitions of creativity concepts as well.

Usually the definition and understanding of creativity separates between extraordinary and usual creativity as well as between creative professionals such as artists and usual professionals such as software specialists. There is no common definition of creativity due to the fact that there does not exist a border crossing point between these kinds of creativity but there exists a insidious transition from one kind into the other. To summarize the discussion, it can be said that creativity represents a generating product or process.

It has to be mentioned that the definition of creativity is depending on the disciplines where it is used. But overall, there are many transitions, many devolutions, and many border crossings from everyday creativity to extraordinary creativity. Both kinds of creativity develop themselves out of an interaction and an interplay of talent, knowledge, ability, intrinsic motivation, character, personality and supporting circumstances. Summarized it can be said that creativity

symbolizes a generating performance based on objective, external circumstances, and subjective, internal conditions. There is no recipe for the success of this interaction, the reason is based on the subjective, individual preconditions which can hardly be defined. Just to offer a simple example: The excellent technical equipment of high developed industrial nations lead to a high number of patents on the one hand, and, on the other hand, the minimalism and shortage of technical equipment within third world countries or within the former Eastern bloc lead to very successful problem solutions as well.

## 2.2 Definition of Creativity through the Project

At this point we got an overall definition of creativity. And within in this chapter the authors present results of the research work. Firstly, the authors present some quotations of the definition of creativity and, secondly, the authors present results out of very intensive focus group discussions.

Some quotations:

- Talking about companies and the application of creativity within companies a well-known definition of creativity is *'The ability to produce new ideas and problem solutions is called creativity. This is the most important capacity of the individual on his or her way to generate knowledge, which may be useful for the organization.'* /Probst et al. 2012/ or as well *'creativity is the ability to solve problem'* /Stefanie Dörflinger, Zeit Online/. This leads to the individual definition of *'creativity is the development of news ideas by connecting given resources. First finding: The definition of creativity changes with its frame of reference. Does that include a different understanding and definition of creativity within different disciplines? Creativity also means to evaluate, to choose. In reality it means that out of a huge range the solution to solve a project was carried out.'* /student oral presentation 1 and focus group discussion/.
- *'Creativity is the ability to generate new things by possibly taking unconventional ways like to compose new music by using new instruments, new phrasings or new harmonies'*. /student oral presentation 2 and focus group discussion/.



Figure 1: Brainstorming on the definition of creativity /stud3 and focus group discussion/

- Two students just presented figure 1 as a kind of brainstorming to define creativity: *‘Creativity is freedom, chaos, relaxing, to generate new things, art, problem solution, improvement, progress, environment’*.
- *‘Creativity is the ability, which is **anchored in the individual, to generate, design or carry out things at one’s own discretion**. This ability can be put down or suppressed by the society or by a missing motivation. This ability has to be supported and required because missing support and demand of creativity lead to deny of the possession of this ability’*. /stud4 and focus group discussion/.

Additionally to the individual quotations intensive focus group discussions were carried out. Within these discussions the participants applied creative methods like brainstorming and mind mapping. After collecting many ideas, the participants clustered these ideas to items. As a collection of ideas a map of main items, which describe creativity, was defined. Each item itself got sub-points. As pointed out in figure 2 creativity was described by seven item: newness, cycle, interaction, problem solution competence, inner needs, freedom, and emotions.

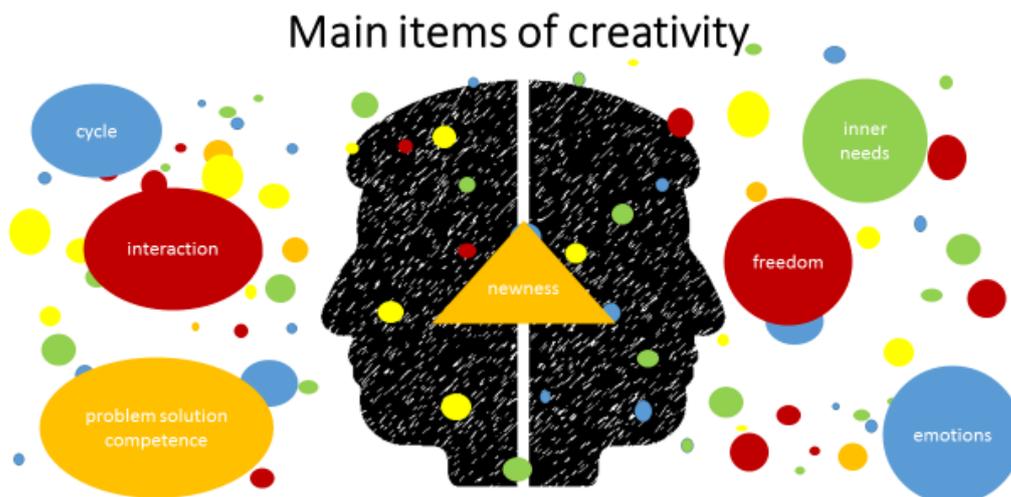


Figure 2: Main items of creativity /focus group discussions/

This figure points out that are different understandings of creativity which are related to the application of creativity. The unifying item is ‘newness’. Newness is, on the one hand, connected with the more logical, technical item –symbolized by ellipses- and, on the other hand, it is connected with the more feeling items –symbolized by circles.

The two fields and their connection are developed by the participants. The quotations mirror comparable results: There is always the point to combine and apply knowledge and develop new solution, on the one hand, and, on the other hand, there is the inherent creativity of mankind, people always have a creativity within themselves. There are different terms being used to describe these areas and their connection. As well as there are used different description to describe their relation, their dependency, their interdependency, and their unification. But overall there seem to be the two fields and their connection.

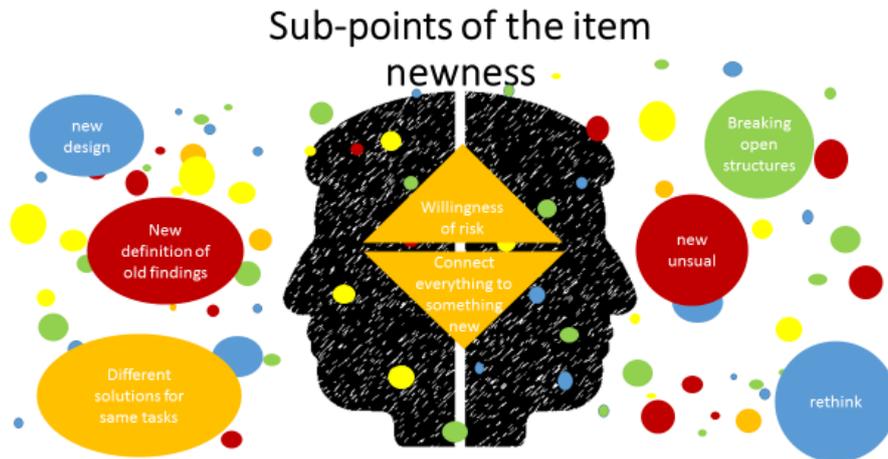


Figure 3: sub-points of newness

To offer a deeper understanding of the items the sub-points are described as well. Figure 3 offers an overview on the sub-points of the item 'newness'. Again there are technical, logical and emotional, feeling related points. These two kinds are unified by the two sub-points 'willingness of risk' and 'connect everything to something new'.

Figure 4 mirrors the sub-points of the item 'freedom' and again there are unifying points between technical and emotional sub-points like 'circumstances' and 'challenging mind, reaching limits'.

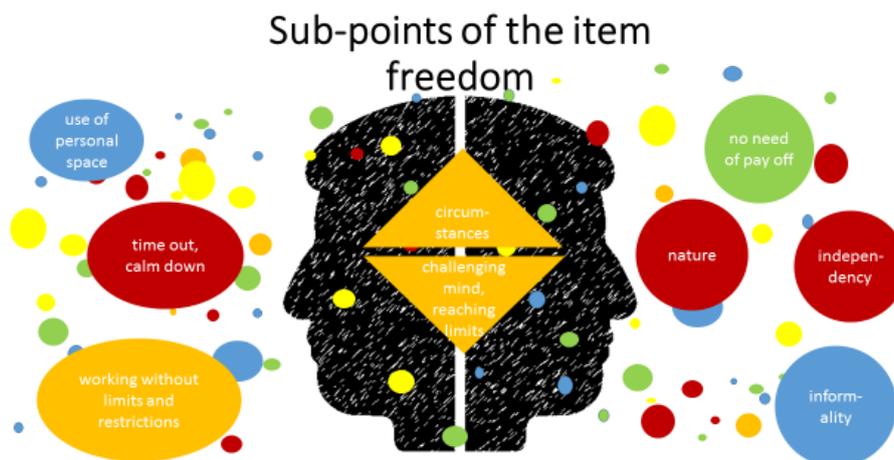


Figure 4: sub-points of freedom



Figure 5: sub- points of inner needs

Next item is 'inner needs' and its sub-points are given in figure 5. The unifying sub-points between technique and feelings are 'run free in sth' and 'no planning, intuitive'. Concerning the item 'emotions' the results are presented in figure 6.

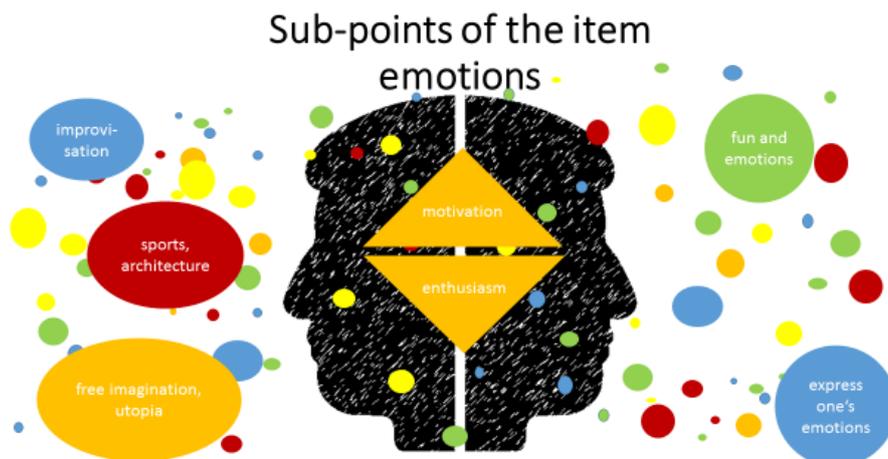


Figure 6: sub-points of 'emotions'

The two sides of the Janus Head are unified by 'motivation' and 'enthusiasm'. After presenting these three feeling related sub-points like freedom, inner needs, and emotions, the three item being related more towards technical views are presented as well. The first item is 'cycle' and figure 7 mirrors the sub-points of this item.

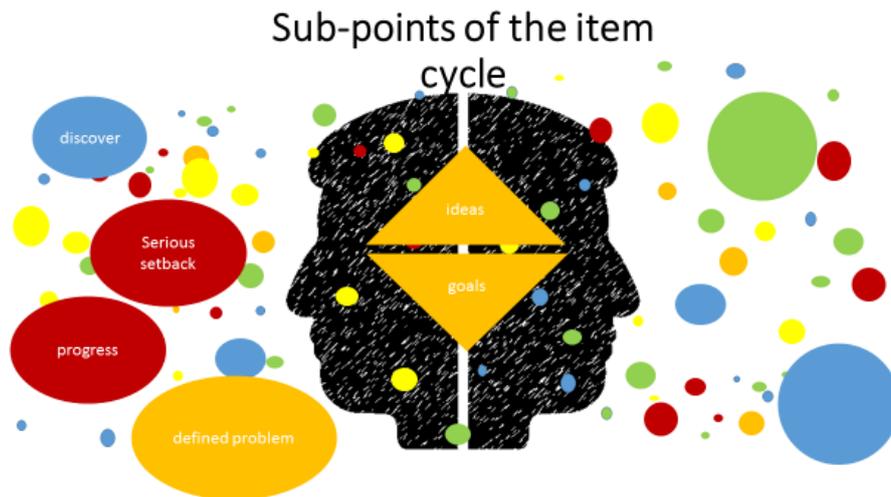


Figure 7: sub-points of cycle

The unifying sub-points are ideas and goals concerning expressing the item 'cycle'. The sub-points mentioned express a typical technical, engineering, scientific cycle. There are no emotional sub-points mentioned at all.

The next item being discussed is 'interaction'. The related sub-points are presented in figure 8.

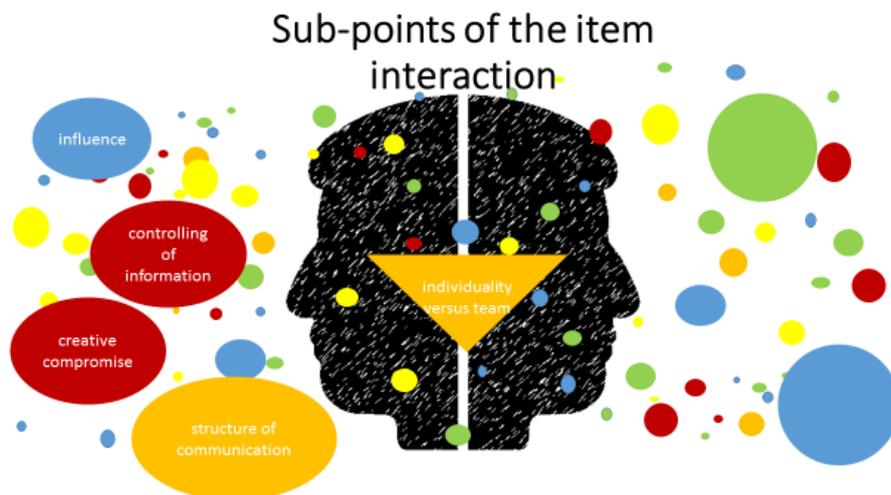


Figure 8: sub-points of 'interaction'

As noticed at the first technical item as well here are no real emotional sub-points, but there is a unifying point 'individuality versus team'.

The last item is 'problem solution competence' and its sub-points are presented in figure 9.

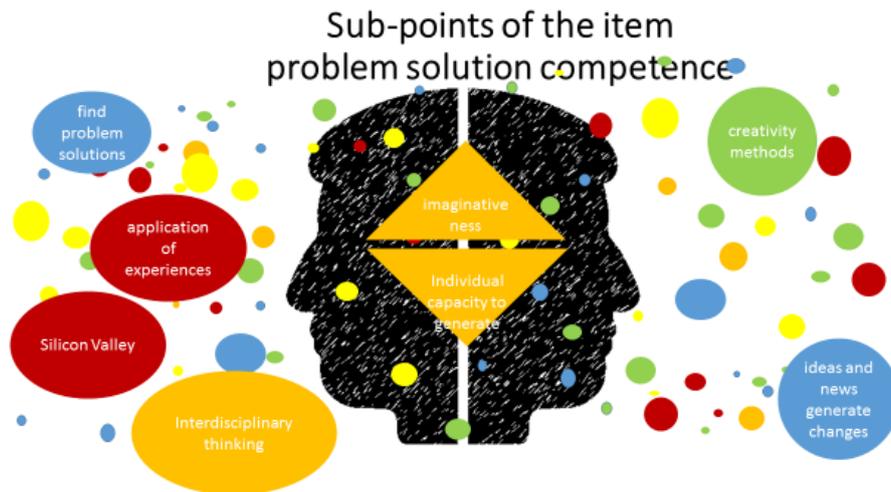


Figure 9: sub-points of problem solution competence

As already seen in the other figure there are unifying sub-points like ‘imaginativeness’ and ‘individual capacity to generate something new’ which connect the technical and emotional fields.

All the given items and sub-points have been worked out and presented by the participants of the project within focus group interviews. The clustering was carried out by them as well.

### 2.3 Results and Describing Factors

The main describing and influencing factors are given by the items like problem solution competence, interaction, cycle, newness, emotions, freedom, and inner needs. Each item is described by sub-points like presented by the figures 3 to 9.

It turned out that the participants defined two fields of describing items: one field was related to technical, engineering, and scientific topics and the other field was closely to feelings, emotions and art. During the process of the focus group interviews and the application of creative methods the participants did not explicitly mention the two fields, they just collect ideas, evaluate and cluster their ideas. Additionally, concerning each item there are connecting sub-points, unifying sub-points between these two fields which just appear without getting the task of connection or unification.

The main number of participants are working in engineering, technical or scientific tasks, but, at the same time, the main number of the participants are engaged in creative, art or music related leisure time activities. Some of the so called technical items may have lead them to their schematic technical, engineering and scientific way of thinking and, therefore, just lead to very one-sided results, sub-points.

## 3 Research Limitations and Outlook

As already mentioned the papers offer the first results and evaluations of an ongoing research project. There are still going on expert and focus group interviews, there are still experts writing their papers about creativity. This paper just represents a first overview.

Additionally, these results are based on qualitative research work. Questionnaires are carried out as well, they have not yet been evaluated.

## References

Probst et al. *Wissen managen*, 2012

Interviews with participants, essays of participants are not published at this time!