

## Supporting and Hindering Factors of Creativity

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### Abstract

Creativity is an elementary part of our life, of our everyday life as well as of our professional life. Creativity is looked at as a method to solve tasks, to find solutions, to realize ideas, to express feelings or as a balance to compensate professional pressure – just to mention a few examples where and how we meet creativity. We are trained to think and react within defined processes. Usually we leave these schemata only if reaching very difficult, seemingly unsolvable questions and tasks. At this point we are often creative, we see beyond our own noses, we see the bigger picture.

Creativity has a different meaning to all of us. This difference, this heterogeneity is caused by socialization, by different talents, by various professional fields. Some people get into contact with creativity during their studies or education, they learn to apply creative methods or they even work within a creative field. Other people separate creativity and professional sphere strictly and just apply creativity within leisure time. One of the main questions is if we can learn creativity which includes that the education system can support creativity.

Which factors support the application of creativity? And which factors hinder the access to creativity? On the one hand, it can be expected that the professional education defines supporting and hindering factors concerning the access to and the application of creativity. But on the other hand, the socialization of people has a great influence on their attitude towards creativity as well. Within our research project more than 100 students, professionals, and academics out of very different disciplines, having different professional and private backgrounds have been interviewed to answer these questions. First results are offered in this research paper.

## 1 Introduction

The paper about supporting and hindering factors of creativity as well as the paper concerning the definition 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 lives, 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 supporting and hindering factors concerning 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 *creocere* 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.

### *2.2 Hindering factors of Creativity*

At this point we got an overall definition of creativity, on the one hand, and, on the other hand, we know that children show a lot of creativity but adults do not do so. It is a simple consequence to ask for the reasons of this change of behavior. If the industry and economy require creativity to get innovative solutions we need to know where we lost our creativity and

as well, of course, how we can support our creativity. When the authors asked the participants about creativity and ‘wishes’ concerning creativity the majority of the interviewed people started to mention hindering factors. Just the second step turned out to be a listing of supporting factors, this is the reason why this paper started to point the hindering factors first as well.

As already mentioned in the introduction chapter the authors carried out a huge field study to gather different perspectives of creativity. At this point first results are offered as a listing. Hindering factors of creativity are

- pressure, fear, stress
- missing culture of mistakes and failure
- inconvenient circumstances
- untrained leadership
- missing social competences
- missing trust
- missing esteem
- missing tolerance
- missing participation
- missing money
- too much competition
- pressure of success
- missing team work

These are the results listed by frequency distribution. It is an important statement that most of the people feel pressure, fear and stress in their professional environment concerning the application creativity. We asked many of the students and professionals when this feeling started and it turned out that school education and sometimes even kinder garden started the process of ruling creativity by forcing the people to stick to defined items when applying creativity. This leads to an elimination of creativity towards an application of pre-defined processes where people have to stick to.

### *2.3 Supporting Factors of Creativity*

If we change all the hindering factors, would that lead to supporting factors? Or are there additional factors? Within the field work and the case studies this question of supporting factors was asked openly. It was not combined with hindering factors. The authors tried to develop a non-biased survey which turned out very difficult, because creativity is always discussed with a lot of emotions. Here as the supporting factors as mentioned and valued:

- working without fear
- tolerance towards mistakes and failure
- enterprise culture (philosophy) based on trust, esteem, confidence, recognition, and equal value
- high value of creativity and innovation
- confidence and trust in employees
- freedom
- social competence of leaders
- open information and communication system
- openness towards associative thinking processes, no requirements towards linear thinking processes
- team work, really shared knowledge
- participation management

- intercultural competence, offering the possibility to get it
- working environment: using colours, especially green as creative colour
- working environment: sports offers at the working place, creativity and team spirit
- working environment: listening to cheerful music, creativity and team spirit
- equal opportunities for all participants

It is a quite obvious result that professionals and students mention and line up much more supporting factors than hindering Factors. Nevertheless, nearly all of them told us that they miss these factors.

#### *2.4 Results and Influencing Factors*

The main influencing factors are fear, including pressure and stress, and the culture of mistakes and failures. This result is not too astonishing, because we all know that fear kills all attempts of new ideas. Even though the industry and economy does not assure circumstances of work without fear but with freedom. When we discussed the question of why they do not seem to change these conditions with the employees and employers we got surprising answers by carrying out expert interviews.

The employers often did not reflect their leadership culture and philosophy towards supporting or hindering factors of creativity. Most of the time the enterprises are running for a long time offering good profits. The former generations of leaders, who were driven by the owners or even were the owners themselves, applied a very authoritarian leadership concept. This kind of authority excludes each kind of participation of the employees. Leadership was just the task of the managers and owners, this was a mirror of the values at this time. As time changed, leadership concepts changed as well. This change was applied in most of the companies as well in different moldings. Total authority usually is not carried out any longer. There are quite different concepts of leadership being applied, but they are unified by a missing mistake and failure culture. Nowadays team work, project work, or participation to improve the working process or a product are well-known. Even though this approach does not include an openness towards a mistake and failure culture, an openness towards experiments to wake up the creativity of employees, or even an openness to offer an environment of fearless working conditions. Of course the employees do not feel any fear if they work within the defined working rules and processes. They even feel well in their working environment when we asked them. Just when going deeper into the discussion of creativity and supporting and hindering factors the employees talked about the impossibility of being creative due to working conditions. We have to keep in mind that the training process of employers and employees usually does not include to think about creativity in its original dimension as a normal part of the working process. The culture of mistakes and failure is strongly connected with creativity and, therefore, its missing within the training of employers and employees is very important, and, as a consequence, its missing within the working process is very important as well.

As a next step we asked the employers and employees what is missing to change to status quo towards more openness and a change of culture. It turned out that the employees need the opportunity to talk and discuss openly without fear. Usually a discussion about changing existing working processes or products includes all stakeholders of the company –if they really live the concept of participation-, this means that their leader participates in this discussion as well and usually the leader of a team, of a department or even the leader of the company leads the discussion. It is always a tricky, a delicate situation if the leader moderates the discussion of his or her team. The employees are still in the position of dependent people, there is no equal value concept, even if it is called like this and everyone is asked to react like this.

When deciding to change the leadership process in a company, sometimes external experts are hired, but just sometimes. Very often the internal experts believe in having the competence of carrying out this change process. To the opinion of the authors the required competence of the managers is not really given due to missing training programs. The focus of change is still on the working processes themselves and there is no embracing view which includes the use and application of the hidden competences of the employees as well or even to wake up their creativity by offering the needed changes. The idea to hire an external moderation and evaluation team is hardly applied in everyday situations. These situations are up to the team leaders showing up the already mentioned deficits.

For sure the leaders are afraid as well of losing their process secrets, secrets concerning their business concepts. And of course it is a tricky and delicate situation to live participation and openness and to save information which may not be known by the competitors.

To unify the different expectations and requirements the change process should be carried out by external experts, including moderators and mediators to harmonize the situation and lead to applicable results.

If there is the idea and the decision of a real embracing change being carried out by external professionals many of the additional mentioned hindering and supporting factors will be included because they are connected with the working environment. And if the company is interested in supporting the creativity of its employees, it will carry an evaluation of existing good practice and its transfer possibilities.

## 2.6 Participation to Change

Due to the background that creativity is strictly related to knowledge, ability and motivation, which are characteristics being connected with education and training, a successful completion alignment of high developed industrial nations and concerned to the globalization of the markets is driven by waking up, by activating the creativity abilities of the employees of a company. This means: The guarantee of competition advantages should not be given by market adequate prices through low salaries, but to assure the competitiveness by application of technical or organizational improvements, or even reforms. The superiority of school education and the professional training, including university education, has to be used to carry out this change. This economy related creativity is interdependent to the understanding of innovation by Schumpeter / Joseph Schumpeter, *Theorie der wirtschaftlichen Entwicklung*, 1911/.

Due to the fact that creativity cannot be reduced to innovation or the development of new technical or organizational developments within the production process, a discussion about innovation and about an innovation management helps to gather supporting and hindering factors of creative work. Thereby, totally new competition reserves can be developed. This approach offers the advantage to analyze at least a part of the creative activities and to elevate these concerning the possibility of transfer and application on other change processes. This leads to an important feature and the characterization of creative activities: Innovation and creativity are always related to changes, changes which disturb our usual everyday life because well-known and easy processes have to be eliminated.

As already discussed, successful changes cannot be realized by orders from the top of a company, this would even destroy their creative application on the way down to the bottom. Participation or participative management is an application which symbolizes share, encouraging, collaboration, co-determination, to be entitled to have a say e.g. Such a kind of participation is connected with defined conditions to realize a participation management.



Figure 1: Steps of Participation /Markus Reiche: „Entwicklung einer Methode zum Partizipativen Veränderungsmanagement“, in: Petra Winzer (Hrsg): „Zukunftsorientiertes QMS – eine Facette des Wuppertaler Generic Managementsystem-Konzeptes, Berichte zum Generic Management, Shaker: Aachen, 2005

Of course there exist many research approaches concerning the application of successful participation management systems. One very meaningful approach is given by Marcus Reich within his PhD thesis about ‘Participative change management’ /Shaker Verlag - Reihe: Berichte zum Generic-Management, Band 2/2007/. This new developed management approach is based on a participation stair (figure 1). The different steps represent the necessary conditions of a participation management.

This approach points out how high are the demands towards a meaningful participative management system, and it points out, at the same time, the demands concerning creativity and a creative working atmosphere. Especially factors like the culture of communication, the culture of learning and the culture of the company itself are very important, and these factors depend on the related actors, the involved managers and employees.

The authors do not attend to reduce creativity to economical innovation processes which just use creativity activities to improve the generating of added value. But even such vague themes like company culture are based on actual company related results, including surveys in successful medium companies / Lucia Belyová: Kulturelle Faktoren qualitätsorientierter Unternehmensstrategien unter sicherheitsrelevanten Aspekten, in: trafo Wissenschaftsverlag: Hamburg, 2013/.

Overall, the solution seems quite obviously: generate a creative atmosphere and as a consequence creative problem solutions will appear en gros. The discussion and evaluation in the literature, the state of the art, show a huge range of approaches offering results. Examples out of practice like the PhD thesis of Markus Reiche and René Scharn /René Scharn: PDCA2-Getriebe - ein dynamisches Konzept zur Strategiearbeit in mittelständischen Unternehmen – Methodischer Ansatz am Beispiel von zwei deutschen Maschinenbauunternehmen, in: Fortschritt-Berichte VDI. Reihe 1 Konstruktionstechnik/ Maschinenelemente. Nr. 421. Düsseldorf: VDI Verlag 2013/ point out that within creative working conditions new ideas can be generated and transferred successfully with the participation of many employees.

But it has to be mentioned that both books describe and evaluative specific situations for one example the situation of the starting of a new project idea like the renovation and renewal of

the ICE generation (high speed trains) or the situation of companies within crisis at the market. These are situations which are related to an atmosphere of change and high expectations they do not represent the normal everyday situation at all. Nevertheless, the solution is connected with and related to an atmosphere of creativity including many difficulties, which have to be gathered, analyzed and evaluated and, as a consequence, which have to be solved.

This means that the main focus has to be on gathering the permanent, ongoing organizational and individual creativity barriers in their huge range. After gathering and evaluating the barriers the situations have to be changed to generate and support creativity. This means that creativity has to be saved and supported.

All the additional supporting and hindering factors which are not deeply discussed at this point are closely related to the working atmosphere. It is quite interesting that very similar factors are mentioned within very different disciplines.

There is still a lot of research work which has to be done, especially on the individual sphere. Neither creativity nor its supporting factors is related directly to anyone, they are not related just to the management as well as they are not related just to the employees of an organization. And of course it is much easier to work within well-known structures and well-known processes than to change anything.

### 3 Research Limitations and Outlook

As already mentioned this paper offers 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.

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