

From Diversity to Creativity? The Case Based on the Creative Platform

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Abstract

Approaches supporting the collaborative generation of ideas identify a significant correlation between cognitive elements of creativity (fluency, originality, flexibility, and elaboration) and diversity. Ideating or/and brainstorming demand diverse and original ideas, elaboration and possibilities, risk-taking and curiosity. The framework of the research is based on the analysis of literature and qualitative research methods, i.e. comparative content analysis according to the emic perspective. In the study, the Creative Platform as a process model is used to facilitate creativity by bringing the shared knowledge of the diverse groups of participants into play in relation to a given task. The aim of the study is to evaluate how the dimensions of culture, educational background, gender, age, and socio-economic status influence ideation session result – creative outcome, the diversity of ideas generated. We demonstrate how the Creative Platform process model can be used to discover new possibilities, perspectives, and solutions to any problems

Keywords: group diversity, creativity, idea generation, creative platform, stimuli.

Introduction

Creativity is the ability to create, to generate diverse and original ideas, to transform some existing ideas or objects into something new. Every person has some substantial creativity potential waiting for the moment to be activated. Creativity needs some incentives and personal commitment to gain power and to produce the change. Open to innovations, flexible, and continually changing higher education institution plays a crucial role in unfolding one's creativity.

The Law on Higher Education and Research of the Republic of Lithuania distinguishes university of applied sciences (Kolegija) as the one that provides higher education based on professional practice and applied research, experimental development and/or professional art, and enables individuals to pursue lifelong learning. Experimental development is understood as coherent, complementary knowledge-based activities based on scientific research and/or know-how based on accumulated knowledge, aimed at developing new products or processes or improving existing ones, as well as on developing or substantially improving research and/or know-how solutions to human, cultural and societal problems based on accumulated knowledge. Vilniaus kolegija/ University of Applied Sciences (VK) being an institution cherishing the spirit of creativity among teachers and students, develops an environment, friendly to applied research and experimental development that encourages inter-

institutional and international cooperation. The law and the joint Creativity and Business Innovation studies at the Faculty of Business Management at the VK aiming at providing students with the outstanding opportunity to discover how ideas are generated and developed, how creativity operates and an understanding of innovation and creativity theories within a business context, led the Faculty to the development of a scientific platform for applied creativity and the creation of a laboratory for applied creativity focused on the creation of a transformative and creative team-oriented space for research on creative thinking.

This paper serves to answer the following questions: What are the main creativity facilitators? What could enhance personal commitment to creative problem solution development processes? According to Creative Platform methodology, group-work and group diversity are of great importance.

This article aims to investigate how the dimensions of culture, educational background, gender, age, and socio-economic status influence creative problem solution results. The main research question of the paper can be formulated as follows: is the originality of ideas proposed by a group related to the group diversity? In order to answer the research question a challenge was formulated, the same challenge was presented in 8 independent idea generation sessions for 35 groups of participants (N=120) with different cultural and educational backgrounds, varying by gender, age, and socioeconomic status. Comparative content analysis according to emic perspective was applied.

Theory

Creativity is typically defined as either the *ability* to produce work that is original and useful (Barron, 1988; MacKinnon, 1962; Guilford, 1967), a valued *novelty* (Sternberg, Kaufman, 2010) or the *process* through which new and useful ideas are generated (Dawson, Andriopoulos, 2014, p. 9, Kao, 1989). Although the concepts of creativity differ from person to person there are some common features that unite all the creativity definitions. These are fluency, flexibility, originality, and elaboration (Guilford, 1950; Torrance, 1974; Paulus, 2000). *Fluency* is the ability to generate a variety of ideas and solutions to the problem, across different categories and to look at the challenge or problem from multiple perspectives. Fluency requires the ability to express the idea with different word groups and sentences, keeping a thought process going and focusing the attention capacity on the challenge. Fluency emphasizes the number of ideas over quality. (Guilford, 1950; Torrance, 1974; Byrge, Hansen, 2014). *Flexibility* is the ability to generate a wide assortment of ideas, to cross boundaries and look at the problem or challenge from different perspectives. Flexibility is measured by the number of different categories of ideas generated (Torrance, 1974; Meador, 1997; Gautam, 2012). *Originality* is defined as producing unexpected answers, being original in thoughts and actions, and

sometimes breaking taboos of community. It expresses distinctiveness, exclusivity, and quite an unlikeness. It even requires being different or being rare. Obvious ideas are not considered original (Paulus, 2000; Runco, 2014; Byrge, Hansen, 2014). *Elaboration* provides the depth of thoughts, the degree of detail and persistence (Guilford, 1967; Byrge, Hansen, 2014; Demetrikopoulos, Pecore, 2016).

Characteristics of creativity and creative process was also described as 4P's model to synthesize the seminal theories of creativity.) Rhodes (1961) and other researchers (Brown, 1989; Davis, 2004; Kozbelt et.al., 2010) have identified four P components, perspectives or dominant factors of creativity: 1. **Person/ Personal characteristics** (the individual that is creative). In analyzing creative individuals, researchers identify the following personality traits that are related to the creative result: risk-taking, self-confidence, tolerance of ambiguity, need for achievement, proactivity, independence and openness (Dawson, Andriopoulos, 2014, Sternberg et al., 2010). 2. **Processes** (what the person does to be creative). Wallas lists five stages of the creative processes: preparation (when the problem is defined and deeply investigated), incubation (when the problem is left for a while, i.e. unconscious processing), intimation (when the individual gets a feeling that a solution to the problem is on its way), illumination (when ideas come unexpectedly without any effort), and verification (when the idea is elaborated and applied) (Herrmann, 1989). 3. **Products** (a result of the creative process). Many creativity theorists advocate that the *result* of creativity is necessary to be considered creative (Jonathan A. Plucker, et.al., 2004; Twila Z. et.al., 1988) 4. **Presence of contextual environment/ Press** (the environment in which the creative process is situated). As Rhodes (1961) emphasized, creativity is a phenomenon where an individual develops new products, with implicit cognitive thinking, and where there is an *environment* that stimulates the creation. While some researches (Zhu, 2014; Lewis et.al, 2005), understand the environment as a place, where the person or creator is or where the process takes place, Soliman (2005) argues that the environment refers to the relationship between the creators and their environments. According to this perspective, there should be interaction and cohesion between the four P aspects. The figure below illustrates the interaction between the four P components of creativity.

Focusing on the **Person** component, the researchers highlight the strengths and limitations of both, individual and collaborative generation of ideas. Promoters of individual brainstorming claim that there are a number of reasons for the efficiency loss in collaborative idea generation as the creators might feel uncomfortable expressing their ideas and being negatively judged (Diehl, Stroebe, 1987; Mullen, Johnson et.al., 1991). Other researchers suggest that although creative individuals generate ideas and products that are relatively innovative and useful, idea generation in groups is much more effective and

creativity ultimately derives from social processes - group work and collaboration are the foundation of creativity. (Jarboe, 1999; Paulus, Nijstad, 2003).

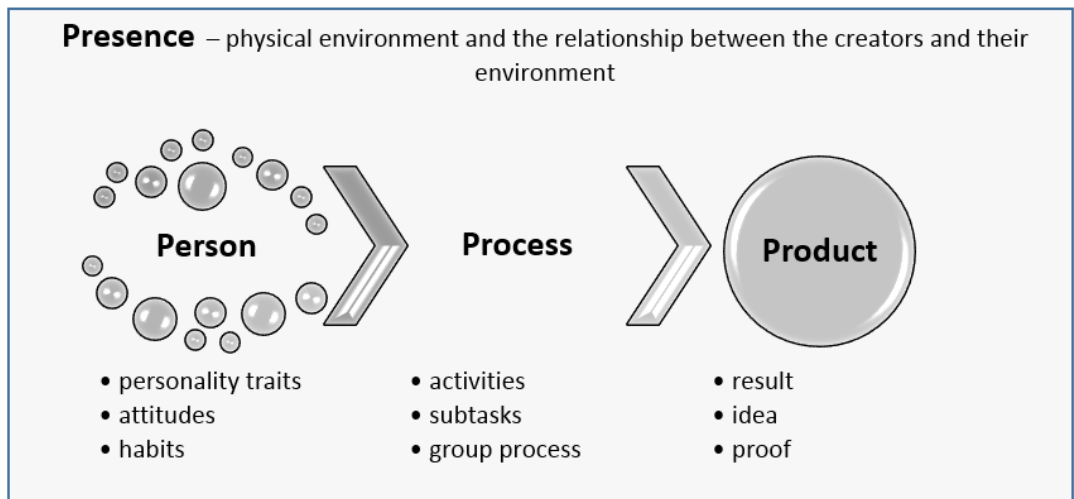


Figure 1. The interaction of the four P components of creativity

One of the methodologies, particularly useful for idea generation sessions in groups and the one that focuses on the four P components of creativity, is the Creative Platform methodology that was upheld theoretically and practically by the thesis of dr. Christian Byrge Malmkjær Sørensen “Conceptualisation of Creativity Practices through Action Research: The case of Creative Platform at Aalborg University” and by scientific and practical activities of his colleagues and himself that were carried out on the international level. The methodology is meant to develop creativity during regular practical tasks and encourages students to contribute fully, helping each other in order to make creativity an involuntary reflex. The Creative Platform is based on the principle emphasizing that regular practical tasks develop creativity regardless of a person’s education, erudition or abilities; this can be achieved by employing four principles: parallel thinking, focusing on the task, no judgment and horizontal thinking (Byrge, S. Hansen, 2009).

The case reviews the outcome – a rich assortment of creative solutions developed under the Creative Platform methodology.

Sample and Method

This study is a part of longitudinal research, started in 2016. The idea is to analyze different factors affecting the idea generation process and results. Since spring 2016 to autumn 2018 there were 8 creative ideation sessions organized, in total 120 participants divided into 35 groups from 2 to 4 members each (see Table 1, every group is coded according to the session year, session number and the number of a group in a session).

Four creative ideation sessions were organized in the 2016 spring and autumn period (46 participants from 8 different countries), three ideation sessions were organized in September 2017 (56 participants, third-year Hospitality Business field students), and one ideation session was organized in October 2018 (18 participants, third-year International Trade students).

Table 1. Sample

<i>Date</i>	<i>Session, participants, (N)</i>	<i>Nationality, (N)</i>	<i>Gender F-females; M-males, (N)</i>	<i>Age, (N)</i>	<i>Socio-economic Status</i>	<i>Groups: year, session, group (N)</i>
26/04/16	Highly structured. Teaching staff, International Week guests (8)	International: Lithuanian (1), Belgian (2), Dutch (2), Latvian (1), Finish (1), Italian (1)	Unisex/mixed: 1.1.1. F; 1.1.2. F=3; M=1	Mixed: 32-49 (8)	Teaching staff	1.1.1. (4) 1.1.2. (4)
26/05/16	Highly structured. Students from Georgia (14)	Georgian (14)	All subgroups mixed	Young: 19-23 (14)	Higher education students from various study fields	1.2.1.(4) 1.2.2. (4) 1.2.3. (3) 1.2.4. (3)
21/09/16	Highly structured. Teaching staff (8)	International: Lithuanian (6), Portuguese (2)	Unisex/mixed: 1.3.1. F; 1.3.2. F=3; M=1	Mixed: 28-55 (8)	Teaching staff	1.3.1. (4) 1.3.2. (4)
30/09/16	Highly structured. Teaching staff (2); Students (12 th formers) (14)	Lithuanian (16)	All subgroups mixed	Mixed: 17-18 (14); 35-40 (2)	Teaching staff (Psychology, History), Secondary education pupils	1.4.1.(4) 1.4.2. (4) 1.4.3. (4) 1.4.4. (4)
20/09/17	Unstructured . Third-year Tourism Management students studying in Lithuanian (17)	Lithuanian (17)	Unisex/mixed: 2.5.1. F; 2.5.2. F; 2.5.3. F=2; M=1; 2.5.4. M; 2.5.5. F	Young: 20-22 (17)	Higher education students, 1 study field	2.5.1. (4) 2.5.2. (4) 2.5.3. (3) 2.5.4. (3) 2.5.5. (3)

26/09/17	Unstructured . Third-year Tourism Management students studying in English (12)	Lithuanian (11); Bangladesh (1)	Unisex/mixed: 2.6.1. M 2.6.2. F 2.6.3. F 2.6.4. F 2.6.5. F=1; M=1 2.6.6. F=1; M=1	Young: 20-23(12)	Higher education students, 1 study field	2.6.1. (2)
						2.6.2. (2)
						2.6.3. (2)
						2.6.4. (2)
						2.6.5. (2)
						2.6.6. (2)
28/09/17	Unstructured . Third-year Hotel and Restaurant Business students studying in Lithuanian (27)	Lithuanian (27)	Mixed: 2.7.1. F=2; M=2 2.7.2. F 2.7.3. F 2.7.4. F=2; M=2 2.7.5. F 2.7.6 F 2.7.7. F=1; M=2	Young: 19-23 (27)	Higher education students, 1 study field	2.7.1. (4)
						2.7.2. (4)
						2.7.3. (4)
						2.7.4. (4)
						2.7.5. (4)
						2.7.6. (4)
						2.7.7. (3)
11/10/18	Highly structured. Third-year International Trade students studying in Lithuanian (18)	Lithuanian (18)	Unisex/mixed: 3.8.1. F=1; M=3 3.8.2. F=2; M=2 3.8.3. F=1; M=3 3.8.4. F=1; M=2 3.8.5. M	Young: 20-22 (18)	Higher education students, 1 study field	3.8.1. (4)
						3.8.2. (4)
						3.8.3. (4)
						3.8.4. (3)
						3.8.5. (3)

All participants first individually, then in groups were working on the same challenge: “Rethink a bench in a park”. In 2016 all the participants had no earlier experience of working together in the same groups, whereas, in 2017 and in 2018 the participants were third-year students knowing each other and having had earlier experience of working together as control groups with reduced group diversity factor. Moreover, in 2016 and in 2018 all the ideation sessions were highly structured according to the methodology of Creative Platform and all the participants were provided with the same 14 stimuli:

1. A question: “If a pianist was hired to solve this problem what ideas would he come up with?”
2. A picture from the Super Mario game.
3. A word: “Aircraft”.
4. A question: “If a golfer was hired to solve this problem what ideas would he come up with?”
5. A picture of a clock.
6. A picture of a foot, hand, and fingerprints.

7. A question: “If a detective was hired to solve this problem what ideas would he come up with?”
8. An instruction: “Apply the principle of *speeding up*”.
9. An instruction: “Apply the principle of *covering*”.
10. An instruction: “Apply the principle of *volume*”.
11. An instruction: “The solution should be implemented into the mobile phone”.
12. An instruction: “The solution must be made of glass”.
13. An instruction: “The solution should grow every day”.
14. An instruction: “The solution must have legs”.

The idea generation process under the Creative Platform methodology was controlled by two lecturers as thinking up new ideas requires focus and a very clear structure. Various exercises were given to train the participants’ fluency, flexibility, originality, elaboration and to open their creativity at the same time. Each idea generation session lasted for 90 min. starting with a few Red Carpet exercises (a ritual in which participants get onto the Creative Platform) and then a challenge presentation and idea generation individually for the first 30 min. and ending up with idea generation in pairs, selection of ideas in groups, idea development in groups, and preparation for presentation (40 min.). Then the last 20 min. were left for the presentations. To follow the methodology, the participants were not allowed to use electronic devices, as mobile phones, computers, and watches are considered to be the biggest barriers to one’s creativity. While in 2017 there were three unstructured ideation sessions processed reducing group diversity for control effect assessment: similar age group students participated in idea generation sessions mostly Lithuanians, studying at the same institution within similar studies field (Tourism Management and Hotel and Restaurant Business). The major focus was on reducing the diversity of group members, proposing unstructured ideation sessions and not supplying with additional stimulation during the idea generation process. One lecturer provided with a flipchart paper and a set of 10 different colors felt tip pens. The participants were asked to form groups from 2 to 4 members each depending on the size of the whole group. The groups were formed according to personal affiliation and friendship, with no random subgroup formation processes undertaken. Therefore, the participants certainly had earlier experience of working together in the same subgroups. The instruction was provided to design an innovative park bench within 40 min. and to present it afterward. The students were left on their own to come up with ideas autonomously (Macerauskiene, Turcinskaite-Balciuniene, 2018).

Aiming to analyze the diversity effect, the groups were constituted according to different level of diversity: 1) international, mixed age and education field groups, structured ideation sessions (1.1.1.; 1.1.2.; 1.3.1.; 1.3.2.); 2) same age but various education field group, structured ideation sessions (1.2.1.; 1.2.2.;

1.2.3.; 1.2.4.); 3) mixed-age but the same education field, structured ideation sessions (1.4.1.; 1.4.2.; 1.4.3.; 1.4.4.); 4) the same age group and studies field, unstructured ideation sessions (2.5.1.; 2.5.2.; 2.5.3.; 2.5.4.; 2.5.5.; 2.6.1.; 2.6.2.; 2.6.3.; 2.6.4.; 2.6.5.; 2.6.6.; 2.7.1.; 2.7.2.; 2.7.3.; 2.7.4.; 2.7.5.; 2.7.6.; 2.7.7.); 5) the same age group and studies field, structured ideation sessions (3.8.1.; 3.8.2.; 3.8.3.; 3.8.4.; 3.8.5.; 3.8.6.; 3.8.7.). Therefore, the results can be analyzed according to the age or socioeconomic status (teaching staff, higher education students and pupils), cultural or educational background (international groups and Lithuanian or Georgian groups).

Every group worked out a set of ideas for improving a bench in a park and proposed a flipchart presentation as well as provided all the selected ideas written on sticky notes. Then the content of the graphical presentation and textual description of ideas were analyzed and compared according to the emic perspective (Buckley et al., 2014; Eckensberger, 2014; Zhu, Bargiela-Chiappini, 2013). Original ideas were considered to be the ones that were rare and diverse from the majority proposed by the participants. Moreover, every idea was analyzed linking it to the stimuli material.

Results

All the groups presented future park benches. The improvements integrated from 2 to 6 distinct ideas depending on a group. The least applied stimuli out of 14 presented were: “if a golfer was hired to solve this challenge what ideas would he come up with” and “if a detective was hired to solve this challenge what ideas would he come up with”. The most popular stimuli were:

1. In total 17 cases linking to “apply the principle of covering” (6 cases in 2016; 2 cases in 2018, but 9 cases in 2017, when this stimulus was not introduced);
2. In total 16 cases linking to “the solution should be implemented into the mobile phone” (5 cases in 2016; 2 cases in 2018, but also 9 cases in 2017, when this stimulus was not introduced);
3. In total 7 cases linking to “the solution must have legs” (3 cases in 2016; 4 cases in 2018 and no cases in 2017).

Based on the emic approach, the analysis of the results was oriented only to the participants-specific solutions without analyzing any creative solution of a bench improvement available online or in any other source.

Four major types of original ideas were detected: a) additional original functions, b) networking solutions, c) technological improvements, d) wild and artistic solutions.

Seven additional original functions were presented, one of these ideas was a result obtained in the unstructured ideation session:

1) International Week guests group, constituted of 4 females from different countries proposed a park bench with an integrated mechanism producing translations and facilitating intercultural communication (group 1.1.1.; no direct stimulus provided – group diversity impact); the same group proposed a park bench floating with helium (group 1.1.1.; stimulus operating “apply the principle of volume”).

2) Secondary school pupils from Lithuania and Lithuanian International trade students proposed a bench with the possibility to change its temperature (group 1.4.1. and group 3.8.1.; no direct stimulus provided – group impact); and the possibility to make various records of the surrounding sounds to listen to them later (group 1.4.4.; stimulus operating: “if a detective was hired to solve this challenge what ideas would he come up with”).

3) Lithuanian International Trade students proposed a bench that is convertible into small easily portable size (group 3.8.3.; stimulus operating “apply the principle of volume”).

4) Lithuanian Hotel and Restaurant business students proposed a sink with running water integrated into the bench to wash hands (group 2.7.6.; no stimulus provided – group impact).

Networking solutions were presented by three groups within highly structured sessions:

1) International Week guests group, constituted of 3 females and 1 male from different countries thought of a mobile phone application with the option of matching people with similar interests on a particular bench (group 1.1.2.; partly related to the stimulus “the solution should be implemented into the mobile phone”, partly it is a group diversity impact).

2) Higher education students from Georgia proposed a mobile phone application indicating all the free benches in the area (group 1.2.2.; no direct stimulus provided – group diversity impact).

3) Lithuanian International Trade students proposed a mobile application indicating free benches in the area and friends sitting on benches (group 3.8.1.; partly related to the stimulus “the solution should be implemented into the mobile phone”, partly it is a group age impact).

Two original technological improvements were proposed by Georgian students from various study fields:

- 1) The group of higher education students from Georgia (group 1.2.2.) came up with two original ideas: a) some innovative material while heated by the sun or moisturized by the rain-producing a growing mushroom type cover (stimuli operating – “the solution should grow every day”, “apply the principle of volume”, and “apply the principle of covering”); b) some basic medical equipment integrated for measuring heart rate, blood pressure and etc. (no direct stimulus provided – group impact).
- 2) Another Georgian group (group 1.2.3.) proposed a bench with wheels and a control stick to make it moves in the park (stimuli operating – “the solution must have legs”, “apply the principle of speeding up”, and “if a golfer was hired to solve this challenge what ideas would he come up with”).

Wild and artistic solutions were proposed by 4 groups (two Lithuanian pupils’ groups and two groups of Georgian students’ from various study fields):

- 1) Lithuanian pupils’ group proposed swinging tree-house type benches accessed by climbing a rope (group 1.4.2.; stimulus operating: a picture with Super Mario).
- 2) A bench should be provided with the possibility to design it with graffiti paintings (Georgian group 1.2.3.; stimulus operating: a picture with footprints and handprints).
- 3) A bench should be like a piano it should play when someone sits on it (Georgian group 1.2.3. and Lithuanian pupils’ group 1.4.4.; stimulus operating: “if a pianist was hired to solve this challenge”).

Group impact was considered to be detected when the original solution could not be related to any of the stimuli provided. **Group diversity impact** was considered comparing original ideas presented in 2016 with 2017 and 2018 year results. In total there were proposed 9 original ideas out of 52 proposed in 2016 (an average of 17,3%); 3 original ideas out of 98 proposed in 2017 (an average of 3,1%); and 3 original ideas out of 24 proposed in 2018 (an average of 12,5%). Both International Week guest groups proposed group diversity-related solutions: translation option and matching people solution. Also, three Georgian groups out of four provided with group diversity-related solutions (the students were mixed from different institutions and study fields): the solution integrating some hooks to hang a bag or attach a dog while sitting on a bench (group 1.2.1.); medical equipment and changing color option according to the daytime and luminosity (group 1.2.2.); the solution with massage option (group 1.2.3.). Ecological solutions were proposed by teaching staff group (group 1.3.2.); as well as three Lithuanian pupils’ groups out of four

(group 1.4.1.; group 1.4.2.; and group 1.4.4.). These results indicate that group diversity does matter in the cases where international teaching staff groups or students from various study fields are working together.

Analyzing data, it appeared that younger groups generated more ideas, i.e. they showed higher fluency (the total number of ideas). In the final presentations, Lithuanian students in 2018 scored an average of 4,8 ideas per group; Georgian students in 2016 scored an average of 4,3 ideas per group; Lithuanian pupils in 2016 scored an average of 3,5 ideas per group; Lithuanian students participated in unstructured ideation sessions in 2017 scored 3,2 ideas per group; international teaching staff groups had an average of 3 ideas per group. It was also noticed that younger age groups proposed more developed and visualized presentations than teaching staff groups providing more schematic and less detailed presentations. The mixing age factor in groups working on creative problem solutions is a factor that improves the overall group result. Gender impact on creative group-work results should be further analyzed as well as other diversity parameters such as studies or professional field of participants, age, and group size.

Conclusions

Working alone can be definitely tempting at times but group sessions propose more scope for creativity in comparison to working individually, especially if they bring together people with diverse backgrounds and experiences.

Aiming to analyze how the dimensions of culture, educational background, gender, age, and socio-economic status influence creative problem solution result, qualitative research method based on emic perspective was designed and applied for the analysis of creative ideation sessions' results.

Some training and focus on a number of basic rules can easily enhance the results of idea generation session. The Creative Platform engages participants creatively to create something together.

Cultural diversity and experience, related to the educational background and socioeconomic status appeared to be good facilitators for creative results-oriented group-work.

Age matters a lot for creative group-work as younger individuals due to lack of know-how generate more crazy ideas and develop them more easily than elder ones. Therefore, better results could be obtained in composing groups of different ages.

The study has to be continued and other diversity criteria explored such as gender, group-size, and others. It is foreseen to propose the same challenge to

some control groups aiming to assess the impact of stimulation.

Guidelines for Applying Research to Practice

Creativity is an important feature increasing individual and organizational competitiveness. Knowing and taking in consideration the most important factors affecting ideation session results can help in various situations:

- Facilitating ideation sessions.
- Helping mediators and coaches to improve their efficiency.
- Fostering individual and organizational creativity as a result of creativity trainings.

References:

- Barron, F. (1988). Putting creativity to work. In R.J. Sternberg (Ed.) *The nature of creativity* (pp. 76-98). New York, NY: Cambridge University Press.
- Brown, R.T. (1989). Creativity: What are we to measure? In J.A. Glover, R.R. Ronning, and C. R. Reynolds (Eds.), *Handbook of Creativity*. New York, Plenum.
- Buckley, P. J., Chapman, M., Clegg, J. and Gajewska-De Mattos, H. (2014). A Linguistic and Philosophical Analysis of Emic and Etic and their Use in International Business Research. *Management International Review*, 54(3), 307–324.
- Davis, G. (2004). *Creativity is forever* (5th edition). Dubuque, Ia: Kendall-Hunt.
- Demetrikopoulos, M. K., Pecore, J. L. (2016) *Interplay of Creativity and Giftedness in Science*. Sense Publishers.
- Diehl, M., Stroebe, W. (1987). Productivity loss in brainstorming groups: Toward the solution of a riddle. *Journal of Personality and Social Psychology*, 53. pp. 497-509.
- Eckensberger, L. H. (2014). Integrating the Emic (Indigenous) with the Etic (Universal) – A Case of Squaring the Circle or for Adopting a Culture Inclusive Action Theory Perspective. *Journal for the Theory of Social Behaviour*, Jonh Wiley & Sons Ltd: 1–33.
- Gautam, S. (2012). Creativity Components. *The Creativity Posts. Quality content on creativity, innovation, and imagination*.
http://www.creativitypost.com/psychology/creativity_components
- Herrmann, N. (1989) Graham Wallas' model. *The Creative Brain*. Brain Books
- Guilford, J. P. (1967). Some theoretical views of creativity. In H. Helson & W. Bevan (Eds.), *Contemporary approaches to psychology*. Princeton, NJ: Van Nostrand. pp. 419-459.
- Guilford, J. P. (1950). Creativity. *American Psychologist*, 5, 444–454
- Jarboe, S. (1999). Group communication and creativity processes. In L. Frey, D. Gouran, & M. Poole (Eds.), *The handbook of group communication & research* (pp. 335-368). Thousand Oaks, CA: Sage.
- Jonathan A. Plucker, Ronald A., Beghetto, and Gayle, T. Dow, (2004). *Why isn't creativity more important to educational psychologists? Potentials, pitfalls, and future directions in creativity research*. *Educational Psychologist*, 39 (2), pp. 83–96.
- Kao, J.J. (1989), *Entrepreneurship, Creativity and Organization: Texts, Cases and Readings*. Englewood Cliffs, NJ: Prentice-Hall.
- Kozbelt, A., Beghetto, R. A., Runco, M. A. (2010). Theories of creativity. In J.C. Kaufman and R.J. Sternberg (Eds.), *The Cambridge Handbook of Creativity* (pp. 467-482). New York, NY: Cambridge University Press.
- Lewis, M., Moultrie, (2005). The organizational innovation laboratory. *Creativity and Innovation Management*, 14 (1), pp.73- 83.
- Macerauskiene, N., Turcinskaite-Balciuniene, A. (2018). Is creativity easier when it is structured? The Influence of Scientific Applied Research on the Quality of Modern Studies, 11, pp.29–42.

- MacKinnon, D. W. (1962). The nature and nurture of creative talent. *American Psychologist*, 17, 484 – 495.
- Meador, K. S. (1997). Creative thinking and problem solving for young learners. Teacher Ideas Press. A division of Libraries Unlimited, Inc. Englewood, Colorado. pp. 21-22
- Mullen, B, Johnson, C., Salas, E. (1991). Productivity loss in brainstorming groups: A meta-analytic integration. *Basic and Applied Social Psychology*, 12. pp. 3-23.
- Paulus, P. B., Nijstad, B. A. (2003). *Group Creativity: Innovation Through Collaboration*. Oxford University Press.
- Paulus, P. B. (2000). Groups, Teams, and Creativity: The Creative Potential of Idea-generating Groups. *Applied Psychology: An International Review*, 49(29), 237–262.
- Rhodes, J. M. (1961). An Analysis of Creativity. in Phi Delta Kappan, Vol. 42, No. 7, p. 307–309
- Rhodes, M. (1961). *An analysis of creativity*. Phi Delta Kappan, 42, pp. 305–310.
- Runco, M. A., (2014). *Creativity: Theories and Themes: Research, Development, and Practice*. Academic Press, pp. 393 – 411.
- Soliman, S. (2005). Systems and creative thinking. Cairo, Egypt: Center for Advancement of Postgraduate Studies and Research in Engineering Sciences.
- Sternberg, R.J., Kaufman, J. C. (2010). Constrains of creativity: Obvious and not so obvious. In J.C. Kaufman and R.J. Sternberg (Eds.), *The Cambridge Handbook of Creativity* (pp. 467-482). New York, NY: Cambridge University Press.
- Tian, M. (2014). How the Environment Impacts Creative Thinking
<http://knowledge.ckgsb.edu.cn/2014/01/13/management/how-the-environment-impacts-creative-thinking/>
- Torrance, E. P. (1974). *Norms and Technical Manual for the Torrance Tests of Creative Thinking*. Bensenville, IL: Scholastic Testing Service.
- Twila Z. Tardif and Robert J. Sternberg, (1988) ‘What do we know about creativity?’, in *The Nature of Creativity*, ed., Robert J. Sternberg, chapter 17, 429–440, Cambridge University Press, Cambridge, UK.
- Woodman, R. W., Sawyer, J. E., and Griffin, R.W. (1993). Toward the theory of organizational creativity. *Academy of Management Review*, 18 (2), 293-321.
- Zhu, Y. and Bargiela-Chiappini, F. (2013). Balancing Emic and Etic: Situated Learning and Ethnography of Communication in Cross-Cultural Management Education. *Academy of Management Learning & Education*, 12(3), 380–395.

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