The Transition of Creativity in Education

The Age of Creativity: Crisis or Golden Age?

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Abstract

This article analyzes the main trends and processes on the creativity research, especially has examined the psychometric and the social-cultural approaches. Based on the growing interests on creativity from the public society and scientific sector as well, given some evidences and significant data on this dominance, the purpose of this article to highlight some mainly psychology-based creativity research phenomena in order to analyze the creative personality, process and outcome from the educational point of view. Indicating some research directions and pointing out the necessity on the BIG-C and the feasible consistency among the creative planning, development and assessment, we emphasize the role of the creative knowledge transfer in the transition of creativity in education.

Keywords:
Creative Knowledge Transfer
Creative Personality
Creative Process
Creative Creativity
Psychometric Approach
Social-Cultural Approach

„*It is quite strange how little effect school – even high school – seems to have had on the lives of creative people.*"

(Mihály Csíkszentmihályi: *Creativity*. 1996. 173.)

1   Introduction

My general, but important statement in order to analyze the transition of creativity in education is that creativity is a natural and important part of human being. Creativity is on the one hand the individual potential as an important life skill, on the other hand the hot topic on the social and economic productivity. From the public, naive point of view, this is an everyday life activity connecting a lot of professions. Creating on the base of an unique idea has possession of the artists, the components, the novelists and the poets. But creativity as an ability on the producing work, this is not a privilege of arts, think about gastronomy, sports, economics, architecture and many more. From the scientific point of view the 1950s gave the attention to the importance of creativity, namely *Jay Paul Guilford* emphasizing the importance of research on creativity in his dominant and world-wide known presidential speech at the American Psychological Association (APA).

   Since 1950, the psychology-based research on creativity has resulted huge amount of publications, books, handbooks, conferences (European Creative Problem Solving Conference), seminars, workshops, journals (Creativity Research Journal, Journal of Creativity in Mental Health, The Journal of Creative Behavior, The International Journal & Problem Solving, Thinking Skills and Creativity) and associations (American Creativity Association, Association for Creativity in Counseling, Creativity Coaching Association, European Association for Creativity and Innovation) mainly paying attention to the creative personality, later the creative process and product. In 1956, the first research conference on creativity was organized by *C. W. Taylor* at the University of Utah, the topic came into prominence. „In 1965, the comprehensive bibliography of the Creative Education Foundation (Razik, 1965), which includes articles and books outside the professional field of psychology,

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contained 4176 references, nearly 3000 of them dated later than 1950. This almost exponential increase has leveled off to a stream of approximately 250 new dissertations, articles, or books every year since 1970." (Barron and Harrington, 1981) On the contrary of this „Creativity Boom", at the end of the 20th Century, *Sternberg and Lubart* resignedly pointed out: „creativity as a neglected research topic" on the base of the results of their analysis, „that approximately 0.5% of the articles indexed in Psychological Abstracts from 1975 to 1994 concerned creativity." (Sternberg and Lubart, 1999) For that reason, raising the question on my sub-title: The Age of Creativity: Crisis or Golden Age? It has been indicated well by the worldwide-known article in the Newsweek, published by *Po Bronson* and *Ashley Merryman* in 2010, called *The Creativity Crisis*. In this article one of the most remarkable statements towards the optimistic and progressive future on the creativity research cited by *Jonathan Plucker* of Indiana University recently reanalyzed Torrance's data. *„The correlation to lifetime creative accomplishment was more than three times stronger for childhood creativity than childhood IQ."* (Bronson and Merryman, 2010) The controversial dilemma (Crisis or Golden Age?) is based on *Kyung Hee Kim*'s research at the College of William & Mary, who founded after analyzing almost 300,000 Torrance scores of children and adults that the creativity scores had been steadily rising, just like IQ scores, until 1990., since then, creativity scores from kindergarten through sixth grade significantly has decreased. (Bronson and Merrymen, 2010) Nevertheless putting the concept creativity on the Google, I got approximately 219 000 000 (!) hits and on the Google Scholar the result is 1 710 000. This is a significant, exponential growth indicating the high interests on creativity from the general public and scientific sector as well.

2   The psychometric and the social-cultural approaches on creativity

Robert J. Sternberg edited the *Handbook of Creativity* (1999) summarizing the „Fifty Years of Creativity Research". In the Introduction Part, *Robert J. Sternberg* and *Todd I. Lubart* analyzed the concepts, the prospects and the paradigms, emphasizing some approaches to the study of creativity: mystical, pragmatic, psychodynamic, psychometric, cognitive, social-personality and confluence. (Sternberg and Lubart, 1999) *Anna Craft* in 2001 analyzed the research and literature on creativity from the educational point of view summarizing four major traditions on the history of the creativity research: psychoanalytic, cognitive, behaviorist, humanistic, in order to analyzing some lines of development, namely personality, cognition (psychometrics, psychodynamics), ways to stimulate creativity, creativity and social system. (Craft, 2001) In my presentation I would like to focus on the psychometric and the social-cultural approaches on the base of the above-mentioned creativity research traditions.

In the Conclusion Part on the Handbook of Creativity, *Richard E. Mayer* noted: *„An important challenge for the next 50 years of creativity research is to develop a clearer definition of creativity and to use of a combination of research methodologies that will move the field from speculation to specification."*[1] It is a positive fact, that clarification of the meaning of creativity is a challenging task, but in my presentation I would like to avoid this „theoretical trap" and in spite of concentrating „WHAT?", via „HOW?", I will firstly focus on „WHY?". One of the most influential educational associations, namely Association for Supervision and Curriculum Development (ASCD) published the thematic issue on Educational Leadership, *Creativity Now!*, indicating some challenging research questions and trends on creative learning and teaching process. As *Ronald A. Beghetto* and *James C. Kaufman* noticed: *„Creativity has become a hot topic in education."*[2] It is also a fact, that the education science and mainly practice are lagging behind the psychology-based creativity research, but from the educational point of view, the key question on my presentation is: How can we maintain creativity for lifelong learning? Answering this question (without being exhaustive) I would like to turn back to the psychology-based „Fifty Years Creativity Research", namely emphasizing some approaches, stressing by *Robert J. Sternberg and Todd J. Lubart*. On the base of the above-mentioned influential Guilford's presidential speech, it was a starting point flourishing the *psychometric approach* to the study of creativity. The „psychometric revolution of measuring creativity" has obviously resulted in a lot of data clarifying the different components of the creative personality. For instance the Unusual Uses Test (Guilford), and more a decade later, the Torrance Tests of Creative Thinking (Torrance) has based on two fundamental pillars. Firstly, Guilford from the 1950s, criticizing the traditional measurement of IQ, from the creative personality point of view, underlined the importance of divergent thinking on creativity. (Guilford, 1950; 1956; 1959; 1967; 1968; 1971)

On the base of the research on the relationship between intelligence and creativity via criticism of the traditional IQ tests by Guilford (1950; 1967), which is the fundamental point of the psychometric approach, some decades later, *Paul J. Silva* raised the relevant question of the basic problem: „How strongly is creativity related to intelligence?" (Silva, 2008) The pioneering researches answering this question focused on the

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dominant and privileged role of divergent thinking. (Guilford, 1950, 1967) Divergent thinking is an unusual way to solve the problems via several possible solutions using creative ideas. Regarding the above-indicated relationship (intelligence and creativity), the researchers has divided two parts. Behind the answers on the one hand there is the underestimation, on the other hand the overestimation of this connection. Similarly this controversial issue, the dominancy of divergent thinking is disputed as well. Nevertheless, *Robert J. Sternberg* pointed out that „it tends to be rather but not totally distinct from psychometrically measured intelligence". (Sternberg, 2003; Sternberg, J. and O'Har. L. A, 1999)

Secondly, *Guilford* modelled the creative personality on the base of the factor-analytic study, determined the 150 potential abilities on the Structure of Intellect (SI). This controversial but high-adaptive, practice-oriented model highlighted the creative personality, the productivity as the creative outcome and the potential for creating via some basic phenomena on the Structure of Intellect, namely originality, problem-sensitivity, adaptive and spontaneous flexibility, fluency, elaboration, evaluation. For instance fluency (the ability to produce great number of ideas or problem solutions in a short period of time); flexibility (the ability to simultaneously propose a variety of approaches to a specific problem); originality (the ability to produce new, original ideas); elaboration (the ability to systematize and organize the details of an idea in a head and carry it out). Basically in Guilford's Structure of Intellect (SI) theory, intelligence is viewed as comprising operations, contents, and products. There are 5 kinds of operations (cognition, memory, divergent production, convergent production, evaluation), 6 kinds of products (units, classes, relations, systems, transformations, and implications), and 5 kinds of contents (visual, auditory, symbolic, semantic, behavioral) on the SI model. Since each of these dimensions is independent, there are theoretically 150 different components of intelligence, which is based on the factor analysis measuring different creative abilities proving that creativity is not equal intelligence starting the never-ending scientific debate on the connection between these two fields. The basic statement on the SI model was the IQ-tests could not measure the creativity itself and focusing on the convergent thinking. (Guilford, 1950) Generally the SI model has the scientific basis on the measurement of creativity in the next decades. In 1967, Guilford developed the Alternative Uses Test, pencil and paper test, measuring divergent thinking ability, „spontaneous flexibility", looking for a lot of ideas focusing on the above-mentioned 4 phenomena: fluency, originality, flexibility, elaboration. (Guilford, 1967) On the base of Guilford's pioneering work, *E. Paul Torrance,* „the father of creativity research", developed the Torrance Test of Creative Thinking (TTCT) measuring on divergent thinking and other problem-solving abilities. (Torrance, 1966; 1974) After six decades of the emphasizing and measuring divergent thinking, the controversial question has been raised by the scholars: To what extend divergent thinking is dominant part of creativity? This is not only the problem of validity and reliability to measure creativity, but the complexity as well, from the personality via process to the result, has indicated the future trends on the creativity research. No doubt, the psychometric approach has enriched the scientific knowledge on creativity focusing on the creative personality, giving reliable and valid evidences via the measurements. By the impact of the pioneering work by Guilford and Torrance, nowadays this approach is flourishing. As the creativity research has become more and more transdisciplinary area, the psychometric approach has been enriched by the cognitive psychology and the neuroscience. (Runco, 2006; Yoruk-Runco, 2014) Cognitive psychology added the research data on the mental representation and cognitive mind, especially focusing on association, transformation, knowledge transfer and synthesis. The latest research data on neuroscience clarifying the operation of the two hemispheres of the brain; the complex, multidimensional connections between the left- and right-side, are emphasizing the dominant role of creative learning. The social-cultural approach is based on the context and environment of creativity. As *Mihály Csíkszentmihályi* pointed out in his highly reputed book, *Creativity: „Therefore creativity does not happen inside people's heads, but in the interaction between person's thoughts and a social context. It is a systematic rather than the individual phenomenon."*[3] On the base of this famous, world-wide known statement, it is not so huge surprise that *Csíkszentmihályi* focused on Where? in spite of What? *„So the first question I ask of creativity is not what is it but where is it?"*[4] From this point of view, he described a system, which is based on the interrelations on three parts: domain, field and individual person. In this interpretation of creativity, this is a domain-specific ability, based on cultural factors, see for instance symbolic knowledge in the society. The field is the domain-specific, feedback-oriented people, who would accept the creative products. The individual person can change symbols and the domain creating new ideas and patterns. (Csíkszentmihályi, 1996) In this context, the important factors have changed from the personality to the creative process inspiring and motivating the creativity research from the educational point of view. At the approximately same time when *Csíkszentmihályi* established his famous system, *Amabile* from the economic and the management dimension focused on the importance of creativity in the context. In the *Amabile*'s stucture there are five stages (task representation, preparation, response generation, response validation and outcome evaluation

with strong relationships with the task motivation, domain – and creativity-relevant skills. Obviously, there are some similarities and differences between the *Csíkszentmihályi*'s system and the *Amabile*'s structure. The main similarity is stressing the domain-relevant skills connected to the preparation and response validation. From the educational dimension it is really important that the creative-relevant skills are strongly fit to the creative process across all domains. Behind these systems and structures there are some relevant research data on the Social Psychology, namely *Jerome Bruner*'s work, highlighting the culturalism, formulating some messages towards the education as well. In fact, the *Bruner*'s culturalism is on the one hand strongly related to the *Csíkszentmihályi*'s field, on the other hand emphasizing the role of thinking and learning in the creative process. As *Bruner* stated: *„Learning and thinking are always* situated *in a cultural setting and always dependent upon the utilization of cultural resources."*[5] *Csíkszentmihályi* declared some stages of the creative process: preparation, which is based on curiosity, incubation emphasizing the unusual connections, the „Aha" moment, which is connected to understanding, evaluation has put the internalized criteria of the domain, and finally the elaboration. (Csíkszentmihályi, 1996) In my point of view, elaboration has built into the high-level synthesis, analysis and creative knowledge transfer. More than a decade, it is not astonishing, that *Ronald A. Beghetto* and *James C. Kaufman* summarized the fundamentals of creativity: (1) Creativity takes more than originality. (2) There are different levels of creativity. (3) Context matters. (4) Creativity comes at a cost. (5) There is a time and a place for creativity. (Beghetto and Kaufman, 2013)

3   Conclusion

To sum up, I would like to draw some conclusion from the educational dimension in order to indicate some potential future trends and processes on the transition of creativity, especially giving further consideration to the psychometric and the social-cultural approach on creativity research. From the vertical point of view of the creative process, the different levels of creativity, namely from the everyday life, little-c creativity, which is based on mainly the originality and fluency has moved on the creativity research towards the analyzing the BIG-C creativity. (Beghetto and Kaufman, 2013) In my view, the BIG-C creativity is based on the higher-order thinking, high-level synthesis and analysis, the deep learning and the creative knowledge transfer. It means that the creative personality has two main pillars: originality and task appropriateness, which will give attention to the extrinsic and mainly the intrinsic motivation. From the horizontal point of view, creative process is connected to the consistency of the planning, developing and assessing in education. Creative curriculum will come to the front, creativity as the transversal competence has changed the curriculum planning, especially focusing on the cross-curricular approach. On the base of the social-cultural approach of creativity, especially stressing the role of the interactions, the development will build into the mapping the prior knowledge, raising the student's questions, focusing on the creative knowledge transfer, metacognition and analysis. From the assessment point of view, the diagnostic and formative function will be dominant in the creative process, basically stressing the longitudinal studies and following the progression. Last but not least, concluding my presentation, I would like to quote *Ken Robinson*: *„My definition of creativity is the process of having original ideas that have value."*[6] With the other words, creativity is based on „applied imagination". In my view, the creative personality, the process and the outcome have connected parallel with it to the creative knowledge transfer as well as promoting the transition of creativity in education.

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