

Diagnostic Capabilities for Creative Leadership Potential Using Dynamic Fractals

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Abstract: In the process of transition of university education to a “transfessional” channel, an urgent problem in the formation of a “transfessional” personality arises. “Transfession” is the ability to change the main profession for new tasks, acting on top of the profession, changing yourself in a situation of uncertainty. One of the main features of this personality is the potential for creative leadership. The contemporary literature describes the phenomenon of creative leadership potential; however, a reliable method for diagnosing creative leadership potential is not presented. This study focuses on the possibility of using the author’s dynamic fractal method to diagnose students’ creative leadership potential. According to the results of the pilot study, a feedback analysis after the sessional exposure using the fractal dynamic method was carried out. As a result of this analysis, twelve main categories were identified. Using mathematical statistics, the specific relationship of these categories is identified, which forms the core of the creative leadership potential. The data obtained allow us to argue about the possibility of using dynamic fractals to diagnose the potential of creative leadership of students.

1. Introduction

In the face of modern challenges, with the constant complexity and expanding field of relevant projects in the university and scientific environment, the cooperation of specialists from various fields is required. In such conditions, the ability to creative communication, the alleged sensitivity to other professional areas is required, i.e., the specialist must be a transfessional. A transfessional is understood as a person who independently constructs the trajectory of their education; forms education, as well as strives for self-education, development, and achievement of new goals [1; 2]. For the successful interaction of such specialists, a new type of creative communication, combining the complex transdisciplinary space of the corresponding complex of scientific and educational disciplines, is required. This kind of creative communication entails the formation of a new type of consciousness and a new type of worldview. This type of consciousness consists in the transition from traditional and already inert rationalistic foundations to noodynamic accents associated with the development of an intuitive mind and creative intuition [3; 4; 5].

Thus, the relevance and purpose of the work are due to the transition of the education system into a transfessional channel, which leads to the formation of a new type of creative personality that can participate in the initial development of complex transfessional problems, namely, a creative leader. This raises the problem of finding students with high creative leadership potential who could meet contemporary global challenges.

To solve this problem, we propose using the fractal dynamics method developed by us. This method has shown its effectiveness for the induction of altered states of consciousness (ASC), including the creative states of consciousness (CSC); it can increase personal and group creativity and leads to changes in the degree of manifestation of new value-semantic concepts (before and after exposure) [6]. In addition, we have shown that the developed method leads to a relaxing effect [7]. Theoretical studies also clearly demonstrate that all of the above parameters are important for the development and realization of the potential of a creative leader. We assume that fractal dynamics is capable of enhancing the “meeting” effect and the

transformative potential of the communicative worlds of a person and, thus, it can act as a tool for diagnosing the potential of creative leadership.

2. Materials and Methods

To test the hypothesis, we selected a special configuration of the dynamic fractals method. The main colors of the fractal palette are blue and beige, as the colors had a positive effect on the well-being and relaxation of the subjects in the last experiment [7]. The composition of John Baker – Rocket Rap was chosen as the musical accompaniment (rendering a fractal for this composition leads to the correct visual row).

To record the result of the impact of the dynamic fractal method, the subjects were asked to describe in free form everything that they felt and what happened to them at the time of viewing the fractal dynamics. The resulting texts were subjected to content analysis, as a result of which, using the expert markup, the following 12 categories were identified:

- Emotions - namely, the description of emotions caused by a fractal;
- Mobilizing state - namely, the descriptions of the current state associated with the sensation of a lift of forces;
- Suppressive states - namely, the descriptions of the current state associated with a breakdown;
- Thoughts - namely, the reflection of one's thought process;
- A simple description - namely, the description of the fractal through simple shapes, forms, and colors;
- Metaphors - namely, the description of a fractal using various metaphors (images of people, animals, fairy-tale creatures, plots related to them, etc.);
- Music - namely, a description of the sensation of music and musical instruments;
- Science and technology - namely, the description of the images of scientific instruments, physical processes, and phenomena;
- Sensations of ASC - namely, a description of the experiences associated with the sensation of a changing state of consciousness (changes in the sensation of space, time, perception);
- Drawing, namely graphic images of images (drawings of animals, people, fairy-tale creatures);
- Art - namely, the description of famous artistic or literary images, mass media images;
- Irony and sarcasm - namely, ironic and sarcastic utterances, humor.

For each category, a frequency analysis was carried out. And then, using the correlation analysis, the relationships between the obtained categories and the indicators of the scales of the following methods were checked (these methods are necessary to identify the core of the structure of creative leadership):

- The method of modeling communicative worlds (MMCW);
- Psychosemantic Graph Method (IPSG) (PSGM);
- Myers–Briggs Type Indicator (MBTI);
- Communication Proficiency Scale Profile;
- SNA technique (sociogram).

Seventy-eight students of one of the Siberian universities in different areas of training took part in the study, 38 of them were girls, and 40 were boys (average age is 18.91 ± 1.29). Statistical analysis of the data was carried out using Statistica 13. To analyze the data obtained, we used the Spearman nonparametric test (for the study of correlation relationships).

3. Results

According to the results of the correlation analysis, a number of relationships between the categories of manifestations of fractal dynamics and the scales of the questionnaires were obtained, namely: thoughts and

centrality in proximity ($r = 0.411$; $p < 0.05$); thoughts and centrality in its own vector ($r = 0.325$; $p < 0.05$); music and discussion (scale chart) ($r = 0.296$; $p < 0.05$), music and the potential psychosemantic flexibility of describing oneself ($r = 0.390$; $p < 0.05$) and the potential psychosemantic flexibility of describing a partner ($r = 0.26$; $p < 0.05$), and the negative relationship between the mention of music and the E scale (Extraversion - the orientation of consciousness outward, towards objects) of the Maers-Brigs method ($r = -0.325$; $p < 0.05$); a simple description and contacts (scale chart) ($r = -0.251$; $p < 0.05$); a simple description and a destructive moment in the description of partners ($r = 0.277$; $p < 0.05$); emotions and a destructive moment in the description of partners ($r = 0.321$; $p < 0.05$); drawings and constructive backgrounds on topics ($r = -0.332$; $p < 0.05$); drawings and own psychosemantic conceptualism ($r = 0.316$; $p < 0.05$); science and technology and constructive background on topics ($r = 0.324$; $p < 0.05$); art and N scale (intuition) - orientation to intuitive information; Maers-Brigs method ($r = 0.295$; $p < 0.05$).

4. Discussion

In diagnosing the potential of creative leadership, the positive connections of mentioning thoughts in the description of the experience experienced after a fractal session and centrality in proximity, as well as centrality in one's vector, are the most informative ones. We can assume that the reflection of our thought process allows the creative leader to subtly feel the situation in which, while being flexible, s/he is in the center of the team and has close contacts with the most respected participants in the environment. The combination of these characteristics and their interconnections allows one to build a "leadership" network.

It is worth noting the following diagnostic moment of mentioning music: respondents who are inclined to mention it have sufficient resources in their own communicative world and remain sensitive to the communicative world of another person (positive connections with psychosemantic flexibility both in describing oneself and in describing partners). This provides an opportunity for developing transcommunication. This resource is partially supported by a reduced tendency to extraversion, which allows you to save one's communicative resource. Directly in communication, these respondents can actively and unobtrusively make contact, feel for a common topic, probe the interlocutor. Finding common points of contact, they are able to encourage constructive communication on the issue of interest, actively persuade, focusing on the field of contradictions. They can be effective in the spontaneous establishment of contacts, the preliminary collection of general operational information, and the establishment of defining points of the developed actual information field.

Let's move on to the analysis of relationships found around emotions and a simple description of the experience experienced after a fractal session. The diagnostic moment of these relations can be expressed in the following: a simple description of the experience experienced negatively correlates with the simplest type of communication, without any in-depth contact. We can assume that excessive superficiality "kills" the primary level of interaction. In other words, a person does not take steps towards rapprochement, s/he is not involved in initiative emotional contact. The destructive moment in the description of partners reflects the respondents' tendency to trans-stress-formation, that is, the tendency to translate even positive experience into negative. Perhaps this can be explained by general cultural automatism. Without real inclusion in communication, it's easier to do "like everyone else" and, possibly, devalue the Meeting (if it took place). Hence, it is logical to explain the presence of emotions in the description of the experience after a fractal session, namely: these respondents cannot deeply get in touch, since they strongly follow emotional outbursts, which, among other things, become the culprits of the trans-stress-formation. It is worth noting that trans-stress formation is also a creative quality, i.e., these respondents have creative potential.

Interesting connections were formed among respondents who gave feedback in the form of drawings after a fractal session. We can distinguish two main branches: negative connection and positive connection. The positive branch concentrates around its own psychosemantic conceptuality, that is, the ability to exhibit qualities that definitely interfere with each other, or that can both help each other and hinder under different conditions (ambivalent attributes). The first interesting fact is the presence in this branch of general conformity, which positively correlates with one's psychosemantic conceptuality. We believe that the indirect positive relationship with the drawings speaks not so much about conformity but about the difficulty of verbalizing one's own experiences. It is worth noting that the battery of techniques we use required the participants to verbalize their own world, which can be difficult for people of "art" who tend to work with images. The presence of the Maers-Brigs method supports this explanation on the "N" scale branch (a

tendency to search for information intuitively, rather than materially). Perhaps such participants have difficulty verbalizing intuitively obtained images, which in our study led to a positive correlation with overall conformity. The last fact confirming our theory is the presence in the description of experiences experienced under the influence of fractal dynamics of the experience of statements about art, which is also usually more figurative. This explains the severity of psychosemantic conceptualism; namely, being in a stressful situation caused by the need to verbalize their experiences, a conflict of personal characteristics occurs. This conflict is characterized by the expression of "interfering" personal qualities that could help resolve the situation. At the same time, conformity in statements can arise. Thus, the branch of positive connections speaks of a tendency to nonverbal thinking, possibly expressed transnationalization with oneself, the product of which creative images will actually be.

Now, we will describe the negative link branch. If we take into account the above-described stress situation in which the respondent is located, the negative relationship between the constructive background of the topics and the desire to draw pictures instead of a verbal description of the experiences becomes logical. The stressful situation caused by the need for verbalization of experiences multiplies the manifestation of stressful predicates in the description of topics. A negative connection with a constructive background on issues is the central link of the "negative branch," while in the "positive branch," we observe our psychosemantic conceptualism. Thus, a negative branch shows a focus not on one's personality (or the identity of the partner, but broadly, but directly on the subject or tendency to solve the problem directly (as opposed to a positive branch, indicating concentration on oneself). A positive connection with the mention of science and technology in the description of experiences under the influence of fractal dynamics of experience may indicate a "problem" orientation. As a rule, the solution of technical or natural science issues involves focusing on the problem and partial neglect of the directly communicative component of the process.

Thus, the presence of drawings (or limited only by drawings) in feedback after a fractal-music session may indicate a tendency to figurative thinking and transcommunication with oneself. The product of such transcommunication can be works of art or other creative outputs, on the one hand. On the other hand, one could consider a reduced ability to concentrate only on the problem and a reduced tendency toward a "problematic" (that is, focused only on the problem) communication style.

5. Conclusion

To summarize all of the above, the dynamic fractal method can be used as an interactive tool for diagnosing creative leadership potential. The article showed that the most striking diagnostic manifestations of creative leadership potential are the following: the focus on the reflection of one's own thought process, the musical accompaniment and musical images, emotions, images of art, science and technology; the presence of drawings and a spatial description of the shape and color of fractal dynamics. The totality of these manifestations and their interrelations confirm the specificity and complexity of the phenomenon of creative leadership potential and prove the need for further study of this phenomenon.

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