Comparative analyses of three different creative models to optimize the developmental processes of pre-school children

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Abstract

Aiming at identifying practical and efficient methods for the development of pre-school children our research compares the results after five months of working with developmental groups where we applied three different creative models with different working paradigm referred to as follows: Development through creative interaction (D.C.I) model, Passive creative (P.C) model and Dynamic creative (D.C) model. The results review indicates that each model applied had different results on the witness group.

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1. Introduction

This research is part of a large PhD project which is under development, named “Optimisation of developmental processes for pre-school children”, which aims at identifying some practical and efficient methods to improve the methods used in the developmental process of pre-school children. Some of the reasons behind this project are inspired from the reality of our contemporary world. One of these reasons and perhaps the most important one, emerges from the actual situation of the State run kindergartens in Romania, where there is a gap between the requirements of educational objectives approved by the Ministry of Education and Research and children's actual possibilities to attain these, considering the overpopulated class, the presence of a single teacher and the existent educational methods. One of the reasons closer to the scientific reality is that there are many theories and researches connected to human development, such as there are theories and researches connected to creativity and creative therapies,

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however, there are less researches on the relationship between creativity and human development. Given these premises, our project aims on the one hand to bring a small scientific contribution regarding the influence of different creative models on the development of pre-school children and on the other hand to take a first step in identifying a working model which may be implemented and efficiently used in kindergarten activity.

2. Purpose of study

The scope of the research is to create a working paradigm based on creative methodology and implement it for the purpose of improving the development processes of pre-school children. For this purpose, we have analyzed the effects obtained after the application over 5 months of three creative models which have different working paradigms.

3. Method

The first model proposed for review, named D.C.I (development through creative interaction) is based on the experiential theory – of social learning (social cognitive) - the concept of reciprocal determinism defined by Albert Bandura and by the methodological concept of unification experiential psychotherapy (P.E.U) – created by Iolanda Mitrofan. While comportamentalists consider that the environment, acting on the person, is the main impulse towards development, Bandura (1977, 1989) Bandura and Walters, 1963) launches the idea that the impulse towards development is bidirectional. Bandura named this concept reciprocal determinism–the person acts on the world just as the world acts on the person. (Papalia, Wendkos Olds & Feldman, 2010).

The Unification Therapy is an exploring therapy, dynamic and meditative-creative (Mitrofan & Stoica, 2005). Techniques of change of perspective over the lived experience aim at facilitating change and creative re-signification of cognitive experience (perceptions, representations, cognition, attitudes), as basis of subsequent behavior changes. What is specific to the Unification Therapy is transformation – of some techniques from which this starts – from predominantly verbal techniques into non-verbal creative support techniques including expressive modes such as movement, dance, clay or plasticine modeling, drawings, confection of masks, using fractals, using stones as projection support, as well as shells, crystals, leaves, flowers, tree bark, seeds and other natural materials. All these become means of externalizing and concretizing the subjective experience – the technique is called “creative improvisation” (Mitrofan, 2004).

The other two methods proposed for comparison have been construed starting from the analysis of the existent models in the educational method and in the interventional modes of applied psychology.

Inspiration sources for selection of the model which we named forcedly P.C. (passive creative) have been the multiple possibilities of using art-therapy in educational domain which David Henley reviewed in the chapter which he suggestively named “Lessons in images: artherapy in creative education in Rubin, J.A., 2001.

In structuring the model C.D., we considered the results of a previous survey we made, which measured the influence of metaphorical tales in the development of pre-school children published by Olteanu, 2010). Human development, as a research domain, is the scientific study of the change and stability patterns. Development is systematic: it is coherent and organized. It is adaptive: its purpose is the confrontation with the internal and external existence conditions. Development may follow different routes or may have or not have a clear objective, however there is a connection between the often imperceptible changes which compose it. (Papalia, Wendkos Olds & Feldman, 2010). Development specialists study three main sectors: physical, cognitive and psychosocial. Growth of the organism and
brain, senses development, moving abilities and health are part of the physical development. Learning, attention, memory, language, thinking, rationality and creativity form the cognitive development. Emotional conditions, personality and social relations are aspects of the psychosocial development. (Papalia, Wendkos Olds & Feldman, 2010). Development processes include all features of the movement, cognitive and psychosocial development. This present survey refers to those aspects of the development which could not be quantified through assessment instruments used.

The work hypotheses we formulated are: Ip(1): Using (D.I.C), (P.C), (D.C) models will determine a significant increase of developmental processes index, compared to the witness group; Ip(2): Using (D.I.C) model will determine an increase of developmental processes indices for the pre-school child development, measured through tests applied significantly different from those of the other two models proposed.

3.1. Participants

The methodology of research which pursued the verification of the work hypothesis was run in several stages:

The first stage included the selection of the subject lots, which includes a number of 120 children (30 – of the same kindergarden group – for each of the four groups- three experimental and a witness one), aged between three and four, all attending the classes of the same State run kindergarden in Bucharest, attending the same extracurricular optional activities and pertaining to families with a small to average income level. The working groups selection criterion has been at random.

3.2. Instruments

The second stage–initial assessment of the subjects of the research, both experiential lots and the control lot. The tests used were: Draw a Person and five subscale of the Nepsy test which measures: visual-movement integration; psychological processing; visual attention; imitation of positions; kinestesic ability and tactile information processing; narrative memory. Collecting some subjective data regarding the degree of cognitive development and socialization at the moment the experiment started based on questionnaires applied to teachers and parents.

3.3. Procedure

The third stage-running in parallel, over five months, the experimental working groups corresponding to models (D.C.I;P.C; D.C) : DCI model – used all the expressive creative techniques range – both verbal and nonverbal – Using Paradigm: A) experiencing a given situation through group's creative interaction; B) integration of the lived experience through individual projections plastically expressed; C) integrative repositioning - group dynamics. P.C model- predominantly nonverbal – used the body and plastic expression mode – without stimulating the creative interaction between subjects of the group but only the free personal creative expression. C.D model– predominately verbal- used: listening to metaphorical tales during the first part of the session and dramatizing the tale through dynamic interaction between subjects pint he second part. Groups frequency was weekly; the classes were held in the children classroom; the class duration was 40-45 minutes. Four therapists have been involved: a coordinator therapist, two co-therapists and an observer, the same team worked with all groups.

The fourth stage–final assessment of the subjects in the experimental lots and the witness lot (applying the same tests and questionnaires, with the difference that the questionnaires evaluated the teachers' and parents' assessments towards the applied experimental model).
4. Data analysis

4.1. Results

The analysis of the evolutions in the D.A.P. test obtained through the 3 forms of therapy was done with through the paired two-sample t-test. We were able to apply this parametric test following testing of normality of score distributions. Based on this test, we verify if the distribution of the score difference averages between the two testing moments, before and after applying the therapy form, is different from the null distribution. The significance threshold is established at $\alpha=0.05$. From the point of view of differences obtained between the two testing moments, before and after therapy, we note that these are statistically quite significant ($\text{sig.}=0.0001<<0.05$ for lots: witness, DCI and PC; $\text{sig.}=0.013$ in case of lot DC). The difference for the witness lot is on average of 4.39 score units better than the score differences corresponding to lots PC and DC which are by average of 3.62, respectively 3.18 score units. The greatest progress (greatest average difference) being in the case of DCI therapy the average of differences being 6.3 score units. The negative value of the t coefficient indicates the fact that the score obtained following therapy is better than the initial one. For the lot where DCI therapy was applied, we noticed a shorter trust interval (5.32 – 7.28) for the average of differences which indicates a progress of approximately the same intensity for all subjects, aspect which may be interpreted as a stronger effect of therapy over performance. This interpretation is sustained by the correlation coefficient Pearson calculated for the two score distributions, $r=0.435$, positive correlation of an average reduced intensity and statistically significant ($\text{sig.}=0.013<0.05$).

In case of N.E.P.S.Y test, for analysis of evolution of scores measured in the two testing moments within the 4 research groups the paired two-sample t-test will be applied. Significant changes were obtained for the witness group and for the one where DCI therapy was applied. For the other two groups the differences obtained are not significant. An important aspect may be noticed in case of DC Lot, where, both as a whole and for the dimensions: phonological processing (B) and narrative memory (E), we have positive averages of score differences, which indicate an involution of performances, however statistically insignificant. In case of group DCI a significant evolution was obtained, the average of differences being 13.39 score units. Coefficient $t=-6.497$, for $df=29$, allows the decision to reject the null hypothesis and to consider the difference observed as being statistically very significant, $p=0.0001$.

In order to verify if the 3 data series obtained from parents with reference to the appreciation they have with respect to the sociability progress, and the children's reaction towards the therapy type, for children in the three research groups which received different therapy types the one-way ANOVA test will be used. The analyzed factor is the type of therapy applied. This test actually verifies the significance of the differences between the averages of the three groups and a null distribution. The results indicate significant differences, the level of difference significance of differences for both dimensions being approximately 0.001. For appreciation of the programme by children, we may consider that there is a significant difference between the average levels of scores corresponding to the three groups ($F=7.95; df\text{ inter-group}=3; df\text{ intra-group}=87; p=0.001$). Following the post-hoc test of multiple comparisons we identified the fact that significant differences are found between the DCI group and the other groups. PC and Dc groups being statistically insignificant from this point of view. With respect to the assessment of sociability, we identified a statistically significant difference ($F=11.21; df\text{ inter-group}=2; df\text{ intra-group}=87; p=0.0001$). Following the post-hoc test of multiple comparisons we identified the fact that significant differences are found between the DCI group and the other groups. PC and Dc groups being statistically insignificant from the point of view of sociability. The average sociability level of children in the DCI group being larger than the other two.
For parents' assessment of the behavior changes, assessment quantified through: yes and no; Chi-square test will be applied for the frequency distributions. Following the construction of crosstabs and application of the chi-square test, we can draw the conclusion that the three distributions corresponding to the three therapies applied, are significantly different (chi-square=27.42; df=2; sig.=0.0001<<0.05). Frequency of positive appreciations within the DCI group is significantly greater than the ones corresponding to the other two groups DC and PC.

With respect to the degree the teachers consider that therapeutic methods are useful in the teaching process, following the application of ANOVA test for comparison of distribution of answers for the three therapy types, we notice that there is a significant difference between the average levels of responses depending on the type of therapy applied (F=88.58; df inter-group=2; df intra-group=87; p=0.0001). The average level obtained for the DCI group (5.00) being significantly greater than the ones corresponding to the other two therapy types (4.00 and 4.60).

5. Discussion:

Following the statistical analysis of data, the working hypothesis have been confirmed. The three creative working models registered significantly different scores compared to the ones registered by the witness lot. And the D.C.I model presented, on some development domains, significantly different scores compared to P.C. and D.C. Models. This proves that the creative working models based on interaction are ways of intervention that stimulate pre-school children's development aged between three and four.

This survey opens the door for other extended surveys on a larger research sample, from the point of view of age and number of subjects under research.

References


