Methods to measure the extent to which teachers’ points of view influence creativity and factors of creative personality: a study with Italian pupils

Maria Elvira De Caroli, Orazio Licciardello, Elisabetta Sagone, Claudia Castiglione
University of Catania – Department of Educational Processes
Via Biblioteca, 4 – 95124 Catania, Sicily (Italy)
Tel.: [+39] 095.2508021  Fax: [+39] 095.2508070  E-mail: m.decaroli@unict.it

Abstract

The aim of the present research was to verify, in a sample of Italian pupils (aged 13-14) and their teachers, whether pupils’ divergent thinking and creative personality were affected by social attitudes expressed by teachers towards thought and creative personality. The Williams’ Test of Creative Thinking and Test of Creative Personality were used to explore creativity and creative personality in pupils; the Williams’ Scale of Assessment of creative performance and rating scales regarding definition and nature of creativity were employed for analyzing teachers’ social attitudes. The results showed that teachers of artistic subjects evaluated pupils as more divergent compared to teachers of foreign languages; teachers of maths and technology, compared to the others, assessed their pupils as less creative in personality. Social attitudes expressed by teachers seemed to affect curiosity and willingness of pupils to take risks. No relationship between social attitudes exhibited by teachers and pupils’ divergent thinking was found. In future research in different school environments and levels of age of pupils will be analyzed to further develop the topics of the present study.

Keywords: Creativity, creative personality, pupils, teachers’ social attitudes

1. Introduction

2009 has been nominated the European Year of Creativity and Innovation in every scientific and cultural field, because of, as reported in official logo, “creativity is a driver for innovation and a key factor for the development of personal, occupational, entrepreneurial, and social competences and the well-being of all individuals in society”.

In psychological research, creativity has been considered an individual capacity to realize novel things [1, 2, 3, 4]; a process of becoming sensitive to problems, gaps in knowledge, missing elements, and disharmonies [5]; a cognitive style appearing in problem solving and decision making processes [6]; an imaginative process with outcomes that are original and of value [7]; the production of “novelty” in everyday life [8]; and, generally, the most mysterious and critical human trait necessary for the advancement of humanity [9].

The improvement of creativity in the current social reality, characterized by continuous change and innovation, was linked to high levels of flexibility, that, referring to individuals, can be developed and educated in personal growth. The idea that the teachers’ points of view on definition and nature of creative processes constitutes an important factor in school context has assumed a great relevance in psychological research [10, 11]. As reported in Runco [12], the teachers’ evaluation of pupils’ creativity was significantly correlated with fluency and originality produced by their pupils. It was very interesting to understand whether divergent thinking and creative personality of pupils was affected by teachers’ social attitudes and their points of view on creativity.

2. Psychological framework: the model of Williams

The factorial model of Williams [13, 14] constituted the framework of the present study regarding the analysis of divergent thinking and creative personality. The author elaborated the Creative Assessment Packet, containing two different tests to examine cognitive and
affective factors of creativity, respectively, *Test of Creative Thinking* and *Test of Creative Personality*.

Five factors have been identified as representative of cognitive aspects of creativity: fluency, flexibility, originality, elaboration, and production of titles or ideas. The factor of *fluency* refers to the capacity to generate a large number of ideas and produce meaningful responses; *flexibility* refers to the ability to change ideas passing from one category to another; *originality* consists in the capacity to produce rare, infrequent, and unfamiliar ideas; *elaboration* is considered the ability to develop, embellish and enrich ideas with details, and, finally, *production of titles or ideas* refers to the verbal ability to generate new and original ideas. Four factors have been identified as typical affective dimensions of creative personality: willingness to take risks (the tendency to act under non-structured conditions and to defend one’s own ideas), imagination (the capacity to visualize and build mental images), curiosity (the tendency to investigate elements and new ideas), and, finally, complexity (the tendency to look for new alternatives and solutions to problems).

3. Hypotheses

The aim of the present research has been focused on verifying whether pupils’ creativity and creative personality were affected by points of view on creativity expressed by teachers. In particular, the objectives of this research, carried out with a sample of Italian pupils and their teachers, were focused on 1) the measurement of creativity and factors of creative personality in Italian pupils and 2) the analysis of social attitudes expressed by teachers in relation to creativity and creative personality of their pupils.

4. Method: sample and materials

The sample was composed of 48 Italian pupils (aged 13-14), balanced in relation to gender (24 boys and 24 girls), randomly chosen and attending the third classes in public junior high schools in Catania and by 36 teachers (grammar, foreign language, maths, technical, music, arts and image) of the same classes of pupils involved in the research.

The materials, presented in a small group setting for pupils and individually for teachers, were described in the following way.

4.1. For pupils

With regard to divergent thinking and creative factors of personality, we used the Italian version of Williams’ *Test of divergent thinking* and *Test of creative personality*.

The *Test of divergent thinking* was a paper-pencil test constituted by two protocols (A or B), each with 12 frames containing incomplete graphic stimuli from which the pupils are invited to draw a design or picture for a time of 20 minutes; this test measured the factors of “fluency”, “flexibility”, “originality”, “elaboration”, and, finally, “production of titles”. The fluency score was obtained by the number of completed frames; the flexibility score was obtained by the number of ideational category changes (for example, from ‘human being’ to ‘mechanical equipment’) passing from one frame to another; the originality score was obtained by the number of pictures produced inside or outside the graphic stimuli, the elaboration score was obtained by the number of asymmetrical or symmetrical pictures; finally, the production of titles score depended on the typology and quality of verbal ability.

The *Test of creative personality* was used to explore factors of personality: it consisted of 50 statements to which each subject answered in order to self-evaluate in a 4-point scale (always true, always false, partially true, partially false, I do not know) for the following factors: “curiosity”, “willingness to take risks”, “imagination”, and “complexity”.

4-260
4.2. For teachers

For the evaluation of creativity and creative personality of pupils expressed by their teachers, the Scale of Assessment of creative performance [14] and two sets of rating scales were used. The first scale was formed by 48 statements evaluated in a rating scale (always, sometimes, rarely). The two rating scales were used to define creativity and its nature (from +3 to -3).

5. Results

A-Creative performance

The results showed that our sample obtained high mean scores in fluency (M=10.96, sd=1.5) and flexibility (M=7.75, sd=1.4), scores below the average in elaboration (M=9.75, sd=4.3) and in production of titles (M=13.79, sd=3.6), scores around the average in originality (M=22.94, sd=4.8). In general, pupils obtained average scores in total creative performance below standard average (M=65.19, sd=11.1).

Significant statistically differences for gender in originality (girls: M=24.71 vs boys: M=21.17; t=-2.70, p=.010), elaboration (girls: M=11.04 vs boys: M=8.46; t=-2.14, p=.038) and total creative performance (girls: M=69.38 vs boys: M=61.00; t=-2.78, p=.008) showed that girls obtained higher mean scores than boys.

There were significant relations among all factors of creativity. Fluency was positively correlated with flexibility (r=.672, p<.001), originality (r=.598, p<.001) and production of titles (r=.384, p=.007). Flexibility was positively correlated with originality (r=.465, p=.001) and production of titles (r=.288, p=.04). Finally, originality was positively correlated with elaboration (r=.461, p=.04).

B-Creative personality

The sample obtained mean scores below the average in imagination (M=13.63, sd=4.4) and above the average in willingness to take risks (M=16.40, sd=3.9); curiosity (M=17.48, sd=4.27) and complexity (M=14.69, sd=4.4) had average scores. No significant difference for gender was found. Significant relations among all the factors of creative personality were shown. Curiosity was positively correlated with complexity (r=.530, p<.001), imagination (r=.507, p<.001), and willingness to take risks (r=.461, p<.001). Complexity was positively correlated with imagination (r=.479, p=.001) and willingness to take risks (r=.531, p<.001). Finally, imagination was positively correlated with willingness to take risks (r=.432, p=.002).

C-Scale of Assessment of creative performance

The results for the assessment of pupils’ divergent thinking and creative personality produced by teachers displayed that, in reference to the first dimension, teachers of artistic subjects (M=19.85), compared to teachers of foreign languages (M=14.81), evaluated pupils as more divergent (F(6,42)=35.59, p<.001). Furthermore, in reference to the second dimension, teachers of maths and technology, compared to the others, assessed their pupils as less creative in personality (F(6,42)=55.00, p<.001). There was no significant relationship between the evaluation expressed by all teachers and creativity in thought and in personality displayed by pupils.

D1-Teachers’ social attitudes and pupils’ divergent thinking

There were no significant differences between teachers’ social attitudes toward creativity and pupils’ divergent thinking.
Different results were observed in relation to creative personality. The analysis carried out using stepwise linear regression showed that the more teachers agreed with the idea that creativity is defined as “relational capacity” (β=-.437, t=-3.29, p=.002), the lower the scores pupils obtained in factors of creative personality. The same finding was obtained for curiosity and imagination. The more teachers agreed with the idea that creativity can be defined as “social deviance” (β=.312, t=2.45, p=.018), the more curious the pupils were. Finally, the more teachers agreed with the idea that creativity is considered “psychological lack of moderation” (β=.436, t=3.28, p=.002), the more willing pupils were to take risks.

The more teachers agreed with the idea that creativity depends on “social climate” (β=-.428, t=-3.21, p=.002), the smaller the scores obtained by pupils in creative personality. Particularly, the same results were obtained for curiosity (β=-.548, t=-4.43, p<.001) and willingness to take risks (β=-.538, t=-3.27, p=.002). Furthermore, the more teachers agreed with the idea that creativity depends on “school atmosphere”, the more pupils were willing to take risks (β=.378, t=2.29, p=.026).

6. Discussion
The present findings highlighted this sample of pupils obtained high levels for producing several ideas and changing mental categories, mean levels for realizing unfamiliar ideas, and low levels for developing elaboration and verbal production. As regards creative personality, in comparison with normative data, our pupils were on average curious and complex, less imaginative and more willing to take risks.

Social attitudes to creativity expressed by teachers seemed to correlate to pupils’ creative personality. The relationship between the evaluation of creativity both in terms of relational capacity and effect of social climate and low levels of pupils’ curiosity and imagination produced very interesting findings. In a complementary manner, the evaluation of creativity as ‘social deviance’ and ‘psychological lack of moderation’ and as effect of ‘school atmosphere’ were correlated with high levels in pupils’ curiosity and willingness to take risks.

On the basis of these results, it is possible to hypothesize that the relevance given to the capacity to handle relationship and the attribution of the roots of creativity to circumstances which don’t directly involve the school, such as social climate, produce in pupils low levels of capacity that go beyond current data and use mental images. On the contrary, the importance attributed to creativity as a process which moves away from established rules and directly involves school atmosphere is related to high levels in curiosity and willingness to approach novelty.

The importance of our results suggests the need to study these processes in depth in different school environments and levels of age of pupils.

References