Creativity and school education: subjects Vs professional identity in a sample of teachers in Italy

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Abstract
The aim of this empirical study was to investigate the relevance of social climate in the classroom for improving creativity in secondary School Students. We hypothesized the existence of a relationship between the Professional Identity of the teachers (or Professional Self), their social representations of pupils, their affective investment in the future (in terms of Possible Selves) and the relevance they attribute to Creativity. The results seem to confirm our hypothesis.

Keywords: Creativity, self, school, education, teachers, pupils

1. Introduction
The institutional aim of school is to prepare new generations to be “active citizens”, as the European Community Council has constantly underlined since the end of the 1990s [1].

The present and ever-changing society seems characterized by complexity and challenges: so, the consolidated certainties even of the recent past are outmoded [2], and this phenomenon contributes increasingly to defining the future of people in terms of Self-creative [3].

In this sense, it is necessary to tackle the new social and working problems [4], [5], [6], [7], which require cognitive flexibility and the ability to look at life and society in different ways [8], from those normally experimented, as has recently been underlined, “Creativity is widely acknowledged as vital to society” [9].

In the last decades, in Italy, in order to face these challenges, school programmes have constantly been revised and new subjects have been activated. Recently (2009) the European Commission of the Year of Creativity and Innovation specified that: “creativity must not be circumscribed to the so-called «creative subjects». The capacity to solve problems in a creative manner and to think in an innovative key must be the integral part of the whole of the formal educational process” [10].

The development of creative abilities, considering the relevant role of the social classroom climate [11], in the educational process, can be considered as an effect of this climate [12], [13], [14], rather than of the curricular contents. In addition, referring to the quality of teacher-student relationships [15] and to the role of social representations (“they reflect social relationships while concurring to build them”: [16]), the professional Identity (or the professional Self) of teachers, as the social representation they have of their pupils [12], can play an important role in the development of Creativity (as well considering its complexity [17]).

The following questions get to the heart of the matter:
1) Can creativity be considered to be the result of curricular contents or, as we hypothesize, as a result of the Teacher’s Professional Identity, in terms of Working and Possible Selves [18], [19], [20]?
2) What is the role of teachers’ social representations towards their pupils’ present and future potentials?
2. Methodology

2.1. Aim of the research and hypothesis

The aim of the present study is to explore what teachers think about creativity and its definitions and nature, what is their social representations of their pupils and the possible link between these dimensions and their professional identity.

Regarding expected results, we hypothesize that the meaning and conceptualization of creativity depend on Teachers’ Professional Identity and their social representations of their pupils rather than their specific subjects.

2.2. Sample

The sample is constituted by n.36 Teachers, in three Public Secondary Schools of Catania, which form the boards of six classes (six teachers for every one: grammar, foreign language, mathematics, technology, art and image, music). In the data analysis we assembled teachers in three groups: 1) humanities area; 2) scientific and technical area; 3) artistic area.

2.3. Materials and procedure

We used: 1) a questionnaire for background questions; 2) a set of 7-points Likert scales to measure the definitions and the nature of creativity; 3) five Semantic Differentials [21] to assess: a) the Professional Self in the present (“I as teacher, in the present”) and in the future (“I as teacher in the future”); b) My pupils “in the present” and the “in the future”; c) the meaning of creativity (“The creativity”); 4) six “thermometers of feelings” (scoring range 1 – 100, in data analysis reduced to: 1= totally unsatisfactory; 7= totally satisfactory, with 4= “indifference point”) to assess (in the “past”, “present” and “future”) the relevance of their specific subjects in improving their pupils’ level of creativity and the relevance of creativity to learn their specific subjects. The materials were administered to the teachers in a “face to face setting”, to assure data quality.

2.4. Data analysis

The data analysis, realized with SPSS, was carried out using Manova and Correlation for average scores of the Likert scale and Semantic Differentials. With regard to the data obtained with Semantic Differentials, we also calculated Euclidean Distances1.

3. Results

3.1. General data

The data provide a frame of reference about the general aspects of our work. In particular, the negative judgement of our sample towards their pupils seems relevant: the score assigned to “My pupils, in the present”2 (\(\bar{X}=4.147\)) is close to the “indifference point”3 (one sample test, \(t=2.26, p=\ n.s.)\), significantly less (Manova: 4.140, \(F=40.94, p<.001\)) than the others: “My pupils in the future”, \(\bar{X}=5.082\); “I, as teacher, now”, \(\bar{X}=5.549\); “I, as a teacher, in the future”, \(\bar{X}=5.794\); “Creativity”, \(\bar{X}=5.461\). No statistical difference related to the specific subject areas (Manova, n.s.).

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1 to calculate the Euclidean distances we used the following formula: e.g. for Actual professional Self and Future professional Self

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\sqrt{\sum (AS_i - FS_i)^2}
\]

\(AS=\) Actual professional Self; \(FS=\) Future professional Self; \(i=\) each couple of opposite adjectives in both S.D.

2 Reliability of S. D. (Cronbach’s alpha): “My pupils, in the present” (\(\alpha=.9065\)); “My pupils in the future” (\(\alpha=.9645\)); “I, as teacher, now” (\(\alpha=.8529\)); “I, as a teacher, in the future” (\(\alpha=.9162\)); “Creativity” (\(\alpha=.8165\)).

3 The polar couples of S. D. were evaluated with scores range from 1 (absolutely negative) to 7 (absolutely positive), with indifference point = 4. In data analysis the total score for each S. D. was reduced to 1-7.
Creativity is predominantly (Manova: 5.175, F=45.23, p<.001) conceptualized as “Artistic quality” (X=6.33) and then as “Cognitive competence” (X=5.06) or “Relational ability” (X=4.75). “Psychological lack of moderation” (X=2.64), “Social deviance” (X=1.94) and “to have one’s head in the clouds” (X=2.64) were rejected. The teachers attributed medium-low/medium scores to the various options proposed regarding the origin of creativity, without statistical differences related to the specific subject areas (Manova, n.s.): “People born creative”(X=5.03); “Creativity depends on the family atmosphere” (X=5.42); “Creativity depends on the climate in classroom” (X=5.31); “Creativity depends on the social climate” (X=4.86).

The idea that creativity was (X=4.82), is (X=5.30) and, especially (Manova: 2.70, F=14.42, p<.001), will be (X=5.52) relevant to learn the specific subject was significantly evaluated by teachers.

In the same way, the teachers consider that their own subjects was (X=4.66), is (X=4.33), and, most of all (Manova, 2.70, F=10.72, p<.001), will be (X=5.82) important for improving creativity.

There are no statistical differences related to the specific subject in both of the conditions.

3.2. Correlations
In general, the correlation analysis shows some interesting data:
1) "I as a teacher, in the present": positive correlations with “I as a teacher in the future” (r= .559, p<.001), “Creativity” (r= .374, p=.025) and “Creativity as artistic quality”(r= .416, p=0.12);
2) “I as a teacher in the future”: positive correlations with ”My pupils in the future” (r=.510, p=.001), “Creativity” (r=.390, p=.019), “Creativity as cognitive competence”(r= .459, p=.005) and “Creativity as artistic quality” (r=.492, p=.002);
3) ”My pupils, in the present": positive correlation with “Creativity” (r=.413, p=.012);
4) ”My pupils in the future": a)positive correlation with “Creativity as relational ability (r=.365, p=.029); b)negative correlation with “Creativity depends on the family atmosphere” (r= -.365, p=.029);
5) ”Creativity”: positive correlation with “Creativity depends on the social climate” (r=.413, p=.012).

With reference to the specific subjects area of teaching, the following results are relevant.
1) Scientific and technical area shows the following correlations:
   a) positive between “Creativity” and “I as teacher, in the present” (r=.653, p=.021) and “I as a teacher in the future” (r=.576, p=.05);
   b) positive between ”My pupils in the future” and “Creativity as cognitive competence“(r=.809, p=.001) and “Creativity as artistic quality” (r=.867, p<.0001);
   c) positive between “I as a teacher in the future and “Creativity as cognitive competence“ (r=.584, p=.046) and “Creativity as artistic quality” (r=.753, p=01);
   d) negative between “I as teacher, in the present” and “Creativity depends on the social climate” (r= -.681, p=.015);

Referring to scientific area, teachers’ Professional Self and social representation of their show positive correlations with creativity, predominantly conceptualized as artistic quality and cognitive competence.

2) The artistic area shows the following correlations:
   a) positive between “Creativity” and “My pupils, in the present” (r=.695, p=.012), “I as a teacher in the future” (r=.699, p=.011) and “Creativity as social deviance” “(r=.587, p=.045);
b) positive between “I as a teacher in the future” and “My pupils, in the present” \((r = .708, \ p=.01)\) and “I as a teacher, in the present” \((r = .743, \ p=.006)\);

c) positive between “I as a teacher, in the present”, “My pupils, in the present” \((r = .654, \ p=.021)\) and “Creativity as social deviance” \((r = .609, \ p=.036)\);

d) positive between “My pupils, in the present” \((r = .695, \ p=.012)\) and “Creativity as social deviance” \((r = .587, \ p=.045)\);

e) negative between “Creativity” and “Creativity depends on the family atmosphere” \((r = .706, \ p=.01)\);

f) negative between “My pupils in the future” and “Creativity as «to have one’s head in the clouds»” \((r = -.576, \ p=.05)\).

The teachers of the artistic area show positive correlations between Professional Self and their social representations about their pupils and creativity, predominantly conceptualized, in this case, as social divergence.

3) The humanities area shows positive correlations between “I as a teacher in the future” and the relevance of “Creativity” to learn the specific subjects “on the past” \((r = .665, \ p=.018)\) and “in the present” \((r = .578, \ p=.049)\).

The teachers of humanities consider creativity as a quality useful to learn their subject.

3.3. Euclidean distances

The Euclidean distance analysis confirms the previous results. In general, the Euclidean distance between “My pupils, in the present” and ”I, as a teacher in the future” shows positive correlation with:

a) “I as a teacher, in the present”/”Creativity” \((r = .536, \ p=.001)\); 

b) “I, as a teacher in the future” / ”Creativity” \((r = .448, \ p=.006)\); 

c) “I as a teacher, in the present”/”My pupils, in the present” \((r = .343, \ p=.040)\); 

d) “I as a teacher, in the present”/”I, as a teacher in the future” \((r = .326, \ p=.052)\); 

e) “I, as a teacher in the future”/”My pupils in the future” \((r = .818, \ p<.0001)\)

In brief, if the level of the investment toward the future of the teacher’s professionality and the future of their pupils is low, the relevance assigned to the creativity is low too.

4. Discussion

The data shows an appreciable evaluation, by the teachers of our sample, of Professional Self, Creativity and their Pupils in the future; the evaluation of their pupils in the present is low (if not negative). Creativity is predominantly conceptualized as artistic quality and a little less as cognitive competence.

The relationship between the Professional Self, the Creativity and the Social Representation of the their own Pupils appears to be interesting, even if this connection seems to concern, in particular, the scientific and technical teachers.

The Euclidean distance analysis seems to confirm the link between the investment, by the teacher, on the professional future and on the pupils’ future, and the relevance attached to the creativity.

On the whole, although the small size of the sample, the data seem to confirm our hypothesis and the necessity to continue our research.

References
