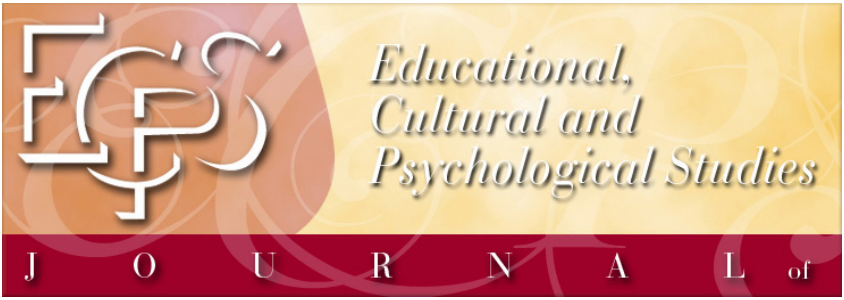

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Supporting School Resilience: A Study on a Sample of Teachers after the 2016/2017 Seismic Events in Central Italy*

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SOSTENERE LA RESILIENZA A SCUOLA: UNA RICERCA SU UN CAMPIONE DI INSEGNANTI DOPO GLI EVENTI SISMICI 2016/2017 IN CENTRO ITALIA

Abstract

Between 2016 and 2017, a series of high-intensity earthquakes devastated Central Italy, with great repercussions on the lives of people and local communities. The article reports the results of a research concerning the impact of the catastrophe on the school world, on the teaching profession and on the behavior of the students. Special attention was paid to teachers' resilient skills and their professional responses in catastrophic situations. For the survey, we used a questionnaire and a test for the study of resilience, administered to a sample of 477 teachers from Lazio and Abruzzo. The results showed that the experience of the catastrophe has a significant influence on teaching professionalism, professional motivation, levels of resilience and behaviors observed in the students. In the light of the results, it is possible to state that in emergency situations teacher training on help

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relationship and resilience becomes a crucial factor in supporting their professionalism, with important repercussions on students and on school organization.

Keywords: Catastrophe; Emergency; Resilience; Teachers; Teacher training.

1. Central Italy and 2016/2017 seismic events: consequences on the educational system and the Velino for Children Project

Starting from 24th August 2016, Central Italy was hit by a series of earthquakes that affected large areas of 4 regions: Lazio, Marche, Umbria and Abruzzo. The seismic sequence was characterized by the reiteration of the shocks that occurred in four main moments:

- On 24th August 2016, at 3:36, a seismic event of magnitude 6 with epicenter between the municipalities of Accumoli, Amatrice and Arquata del Tronto (Lazio-Marche); the earthquake caused 299 victims, numerous injuries and serious damage in the area.
- On 26th October 2016, with two main events of magnitude 5.4 and 5.9, which affected the municipalities between Norcia and Visso (Umbria - Marche);
- On 30th October 2017, a quake with a magnitude of 6.5 marked the most intense event, with an epicenter between Norcia and Preci (Umbria).
- On 18th January 2017, with 4 events of magnitude from 5.0 to 5.5, with epicenter in Montereale (Abruzzo). At the same time, the Civil Protection System was facing an exceptional wave of bad weather, which heavily affected Abruzzo, Lazio, Marche and Umbria.

The post-earthquake situation was configured as hypercomplexed and problematic even with regard to the educational system. Following the seismic events there were numerous school-age victims, important structural damage of many school buildings. The checks carried out in the schools of Lazio at 31 March 2017, revealed practicability in 72% of cases, unavailability in 5% and partial and / or temporary inability in 23% of cases. A similar situation occured in the other affected regions (Abruzzo, Marche, Umbria). Immediately after the earthquake of Amatrice, a task force from the University of L'Aquila and the Comunità Montana del Velino [1],

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with the contribution of other institutions, implemented the Velino for Children Project, aimed at supporting and strengthening the educational system through direct and indirect actions on students, teachers, parents and on institutional and non-institutional networks (Mariantoni & Vaccarelli, 2018; Vaccarelli, 2018a). Among the various project actions, teacher training was considered as a central moment for developing strategies useful in promoting their own resilience, that of the students and that of the educational institutions. After the other seismic events of 2016/2017, the training started in Amatrice was extended to 904 teachers in the large areas affected by Lazio and Abruzzo. The Task Force for Emergency of the Ministry of Education acknowledged the training program as its own pilot project for the damaged areas of Lazio and Abruzzo. Regarding the choices related to the training purposes, the content of the course the methodological choices, the evaluation by the participants, refer to Vaccarelli (2018a; 2018b). At the end of the training program, a study was carried out to investigate the effects of earthquakes on teachers resilience, their professional life and changes in student behaviors (*Fig. 1*).

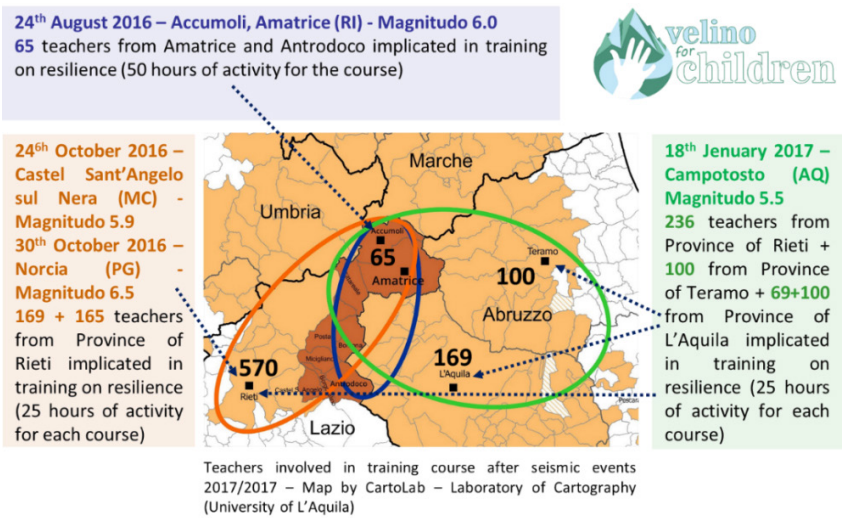

Figure 1. – Teacher training in Central Italy seismic zones (2016/2017).

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2. Theorethical framework

2.1. *The concept of resilience and its application in catastrophic situations*

Earthquakes like other natural disasters, from the point of view of human sciences, are a traumatic events for the human psyche and at the same time have a power to cause strong destabilization towards the affected communities. On an individual level, an earthquake has a particularly intense emotional impact, such as to interfere with the ability to adapt our defense strategies during the shock and afterwards. It damages the intimacy of the psyche, the most vulnerable part of the human being, but also the structure of social relations, with a sense of loss that can involve the world of private affections, the material dimensions of individual and community life (with consequent problems concerning housing, economic issues, urban organization), the world of social and educational relationships (Vaccarelli, 2016). We use the concept of resilience to describe the strength of individuals to react to critical events that can cause severe stress or traumatic conditions, as the eartqueakes or other natural disasters do. Cyrulnik considers resilience as a process of elaborating trauma, through which the repair produces change and frustration can be transformed into opportunities for the individual (see Cyrulnik, 2005).

The development of resilience, much studied in psychological sciences, can affect the educable nature of the human subject and should be promoted intentionally within educational contexts. In defining the frameworks for pedagogical intervention it is necessary to identify the factors responsible for the capacity for resilience. Garmezy (1985) proposed a classification (individual, family and support factors) that we will enrich (*Fig. 2*) with further elements that the research has meanwhile brought out.

For educational purposes, resilience is presented by Richardson (2002, p. 310) «as a simple linear model that depicts a person (or group) passing through thestages of biopsychospiritual homeostasis, interactions with life prompts, disruption, readiness for reintegration and the choice to reintegrate resiliently, back to homeostasis, or with loss». In Richardson view, we can therefore identify four types of reintegration processes:

1. *Resilient reintegration*: refers to the reintegrative or coping process that results in growth, knowledge, self-understanding, and increased strength. This form of reintegration is the most desired one.
2. *Reintegration back to the homeostasis*: refers to the reintegrative or coping process that has the aim to reconstruct or rebuild the old circumstances.

3. *Reintegration with loss*: typical of a person that recovers from a traumatic situation but instead of having experienced personal growth and strength lost some of his/her motivation, drive or hope.
4. *Dysfunctional reintegration*: the individual does not see another solution than e.g. drug abuse and/or destructive behaviors.

Individual and personality resources

- *Character*: biopsychological factor that explains the different abilities to overcome stress, to adapt to changes and express feelings.
- *Good coping strategies*: cognitive and behavioral efforts useful to face adverse situations (Lazarus & Folkman, 1984).
- *Good appraisal strategies*: analysis and evaluation of the critic situation.
- *Self-esteem and confidence* in one's abilities.
- *An internal locus of control*, typical of individuals who believe in their ability to control events (on the contrary, we speak of *external locus of control*).
- *Sense of ethics and solidarity*.
- *Sense of humor and irony*.

Family resources

Feeling of the *secure base*: good bonds of attachment allow to build the *secure base* from which the child can positively face any experience of knowledge or exploration of the world (Bolwby, 1989). When the family is an emotionally congruent context, internal security is built and it can be effectively spent in the most critical and difficult situations.

Support resources

The school, the quality of the educational services, the presence of teachers and educators trained in help relationship are very important support factors, as well as a good quality of informal relationships.

Figure 2. – Protective factors and the dimensions of resilience.

2.2. *A «mirror game»: why teacher resilience is necessary to develop student resilience too*

The ability of a child to react positively depends on internal factors, but also on how the adult world is able to accompany them in the traumatic experience and the extent to which this experience is managed by the adults themselves (Kilmer & Gil-Rivas, 2010).

In emergency situations, a critical factor is given by the difficulties of the primary group and the extra-familary group of reference (for example

at school, with classmates or friends) to functionally guarantee a *secure base*. This is because disasters affect the community in their entirety, widening the stress and traumas on all the subjects that compose it.

Furthermore, the control of impulses, the planning of actions and decision-making are skills linked to peculiar cognitive abilities that emerge in adolescence (Ammanti, 2010).

An adequately resilient individual is so often surrounded by a family and social network that is in turn adequately resilient, which offers support and help. In collective traumas, this might not always happen: the child who has experienced an earthquake, who has experienced grief (in the family or at school), often has to deal with adults of reference who are living the same inner difficulties on an adult scale (see Lei, 2017). This poses the problem of how effective the support that the adult can provide to the child might be. In this case, the world of education beyond the family comes into play, in school or elsewhere, which has the task of supporting children in their resilient processes. At the same time, teachers can be considered victims (of first, second or third level) and also their personal and professional resilience might be efforted to become «tutors of resilience» (Cyrulnik, 2005) for their students but for themselves too.

3. Methodoloy

3.1. *Aims and research questions*

The survey with a questionnaire was guided by several macro-objectives, with descriptive and explanatory aims:

- to study the teachers' personal and professional resilience involved in emergency situations;
- to study the impact of catastrophic situations on teaching professionalism, on the perception of role, on professional motivation, on behaviors acted out in the daily school;
- to study indirectly the behavioral changes of the pupils within the educational relationship and with reference to the learning tasks and the class climate;
- evaluate the training offered, to verify its effectiveness and its applicability in other catastrophic situations (see Vaccarelli, 2017a, 2017b, 2018a; Mariantoni & Vaccarelli, 2018).

3.2. *The instruments*

The questionnaire on professional and personal life after an earthquake

The questionnaire consists of 32 questions. We used multiple choice questions, Likert scales and open choice questions. The application of the technique of scales on specific indicators allowed to construct useful synthetic indexes. The questionnaire was constructed after a first qualitative phase and therefore after collecting 10 focused interviews. The final version was preceded by an adequate try out. Below a summary of the dimensions and the main variables studied:

1. Background (gender, age, place of residence, family composition, etc.).
2. Professional data (school order, place of employment, subject taught, length of service, etc.).
3. Impact of the earthquake on personal life (eventual physical or material damage suffered, presence of victims between family and friends, housing situation, etc.).
4. Impact of the earthquake on professional life (presence of victims among students and school staff, relocation of the school, reorganization of the school and educational programs, ecc.).
5. Attitudes towards emergency management and helpers.
6. Meanings attributed to profession after the earthquake (professional motivation change, feeling toward the role, self-perception, etc.).
7. Observations on the students behaviors within one year of the earthquake (cognitive, affective and social change in students' behaviors).
8. Evaluation of the course.

The Resilience Process Questionnaire (RPQ)

RPQ is an Italian standardized tool for measuring resilience (Laudadio *et al.*, 2011), above all in adolescent people. It was used in other research studies on teachers resilience, that allowed to demonstrate that the instrument is valid also for an adult target (La Marca, 2014). It consists of 15 items and can be used within psycho-pedagogical interventions aimed at supporting the development and maturation of the subject. It is based on a five-step Likert scale (1 = disagree; 5 = totally agree). In defining the scores, the standardization criteria contained in the user manual were strictly applied. It deepens three dimensions of resilience, according to Richardson perspective (2002):

1. *Resilient reintegration*: typical of a subject who is able to overcome traumatic or stressful events: scores above 8 are associated with a strong resilience of the subject. E.g.: «I think that a painful situation can make me better».

2. *Return to homeostasis*: scores above 8 are characteristic of subjects who, in the face of the trauma, try to restore the state of equilibrium before the event. E.g.: «When I am in a difficult situation, I do everything to regain the strength I had».
3. *Reintegration whit loss*: scores above 8 indicate the difficulty in facing, accepting and overcoming traumatic or stressful events. In this dimension, the test authors also included *dysfunctional reintegration* (Richardson, 2002). E.g.: «When something bad happens to me, I cannnot get a reason».

3.3. *The sample*

The sample consists of 477 teachers who participated in the editions of the course «A school of resilience: learning and teaching after a catastrophe» and was extracted from the total population of the participants (904 teachers of each grade and degree). Respondents are 94.4% females and 5.6% males, with an average age of 49.3 (SD 7.9). The territorial distribution sees a prevalence of subjects in the province of Rieti (60.7%, included 5.2% of teachers from Amatrice and Antrodoco schools), followed by the sub-group form the province of L'Aquila (19.8%) and Teramo (14.3%).

Primary school is the most represented (32.7%), followed by upper secondary school (17.6%), nursery school (16.4%) and lower secondary school (11.2%). 19.7% had deaths among relatives and close friends, while, concerning housing situation, 13.3% had to stay in temporary housing and 7.7% had to move and let the place of residence. The subjects experienced the earthquake in a different way and with a different impact, depending on distance from the epicentres of the different events that took place between 2016 and 2017. In this perspective we can consider three subgroups:

- Teachers from Seismic Zone 1 (13.2%) – Epicenters: Amatrice (2016) and L'Aquila (2009).
- Teachers from Seismic Zone 2 (62.0%) – 20-50 kilometers from the epicenters.
- Teachers from Seismic Zone 3 (24.8%) – More than 50 kilometers from the epicenters.

4. Results

4.1. *The earthquake and its impact on professional life*

A first look at the impact of the earthquake on the school world and on the teachers professional life can be obtained by observing the data related to the impact of the earthquake on school organization and professional experience (*Tab. 1*). The interruptions of the lessons and the difficulty of carrying out the teaching program represent the most relevant issues for more than 72% of the sample. This is followed by data on the mobility of students (32.2%) and the relocations of school buildings (22.0%). The impact of the earthquake on the school system is characterized by situations of great criticality also concerning educational and didactic continuity, attributing to school organization the characteristics of precariousness and instability. 19.7% of teachers had victims among students and school staff and this data is significant for the emotional impact as human beings and professionals. Despite this problematic framework, only 12.5% of teachers expressed the desire to move to a less problematic school.

Table 1. – Impact of earthquake on personal and professional life.

What impact did the seismic events and the emergencies of the past months have on your professional life?	% Yes
Presence of victims among students, colleagues, school staff	19.7%
New school relocation	22.0%
Interruption of lessons	73.0%
Difficulty in conducting the educational program	72.8%
Double shifts	8.3%
Transfers of incoming and / or outgoing students	32.2%
Desire to move to a less problematic school	12.5%

On the emotional experience related to emergencies, we built a multiple-choice question (only one answer admitted). We present the data in relation to the seismic area (*Tab. 2*). The first two items refer to the emotional resources that push the subjects to use coping strategies centered on the problem and on active behaviors to spend in critical situations (courage/decision-making ability, motivation to solve problems): 57.2% of the subjects chooses one of these answers, but they are distributed differently if we consider the seismic area: subjects from areas 1 and 2 appear to be signifi-

cantly weaker than those in area 3. In the same way the other two answers, which signal feelings of discouragement, fear, restlessness (which are generally chosen by 39.21% of the subjects) are distributed more among those who are closer to epicenters. The Chi Square calculated on the matrix largely confirms the significance of these differences (p = .003).

Table 2. – Emotional responses to seismic events / seismic zone.

In your opinion. which of the following answers best represents your personal situation concerning the seismic events and the emergencies of the past months?	Seismic Zone 1	Seismic Zone 2	Seismic Zone 3	Total
Courage / Decision-making ability	19 16.10%	52 17.60%	17 27.00%	88 18.45%
Motivation to solve problems	42 35.60%	112 37.80%	30 47.60%	184 38.57%
Discouragement, fear, prolonged sense of insecurity	15 12.70%	29 9.80%	3 4.80%	47 9.85%
Restlessness, anxiety, low mood	34 28.80%	98 33.10%	8 12.70%	140 29.36%
Other	8 6.80%	5 1.70%	5 7.90%	18 3.77%
Total	118 100.00%	296 100.00%	63 100.00%	477 100.00%

Chi Square 23.766; *df* 8; sig. .003*.

4.2. *About teacher resilience: are there differences between teachers concerning resilience skills?*

The sample means referring to the three resilience dimensions studied by the RPQ test, are at scores higher than 6 for *reintegration with loss* (6.8) and *return to homeostasis* (6.8). *Resilient reintegration*, which represents the dimension best associated with other variables and which best expresses the idea of resilience, obtains a mean at 5.5 (*Tab. 3*). These results are particularly interesting if they are compared to other research studies on large samples of teachers. In a study on temporary teachers' resilience, e.g., the mean obtained on the resilient reintegration (measured through the RPQ test) was 6.47 points (La Marca, 2014). Comparing this average score to 5.54 points obtained from our sample (SD 1.9), we can affirm that a particularly strong stressor, such as a natural disaster, creates a situation of vul-

nerability that affects at the same time personal and professional well-being and functioning of the school system. We also observed that there are weak but significant differences (studied by ANOVA) between the teachers of the different school orders considering the average scores of *resilient reintegration* and *return to homeostasis*.

Table 3. – RPQ test dimensions observed in the sample and in sub-groups (school order).

	Nursery School	Primary School	Lower Secondary School	Upper Secondary School	Total	ANOVA
	Mean *SD*	Mean *SD*	Mean *SD*	Mean *SD*	Mean *SD*	F *sig.*
Resilient reintegration	5.7 *1.8*	5.7 *1.8*	5.6 *1.6*	5.0 *2.0*	5.5 *1.9*	2.48 *0.043*
Return to homeostasis	6.7 *1.4*	7.0 *1.7*	7.1 *1.7*	6.4 *1.7*	6.8 *1.6*	2.54 *0.039*
Reintegration with loss	6.7 *1.1*	6.9 *1.0*	6.8 *1.0*	6.8 *1.1*	6.8 *1.1*	0.25 *0.908*

4.2.1. Emergencies and external/internal stressors

In the analysis of the resilient skills of teachers we considered both the external variables to the emergencies, both the internal ones, referred to the traumatic experience, to the precariousness of the personal and professional life conditions.

With regard to the variables external, significant negative relations (Pearson correlation coefficient) were observed between the age of the subjects and two dimensions of the resilience. *Resilient reintegration* is correlated to the age with a coefficient of -.208 (sig. ,000) and *return to the homeostasis* with a coefficient of -0.102 (sig. 0.025). No statistical significance was found in the correlation between *reintegration with loss* and age. These correlations could explain how, in the current trend, younger teachers tend to be more able to find resources to face adverse situations in a resilient way or to return to equilibrium. Significantly, the age of the subjects rises in the low resilience group (51.7 years) and decreases in the medium-level (48.1) and high-level groups (47.5), with a statistical significance applied to the index F(6.687) at .001.

Concerning the relationship between internal factors in the emergency and the degree of resilience, a first consideration must be made with

respect to the distance from the epicenters. As we can see (*Tab. 4*), in all cases the values of the three dimensions vary with respect to the considered variable (Seismic Zone), even if the level of significance associated with the Fisher index is only adequate for the *resilient reintegration* (sig. 0.04). This means that, tendentially, the subjects are affected by the proximity from the seismic epicentres and tend to be significantly weaker in terms of energy expenditure. This probably happens because the behaviors indicated in the items are actually acted at the time of the administration of the test and it is possible to hypothesize a «tiredness» effect which is reduced with the distance from the most critical contexts.

Table 4. – RPQ dimensions and Seismic Zone.

Seismic Zone	Seismic Zone 1	Seismic Zone 2	Seismic Zone 3	Total	ANOVA
RPQ Dimensions	Mean *SD*	Mean *SD*	Mean *SD*	Mean *SD*	F *sig.*
Resilient reintegration	5.3 *1.8*	5.6 *1.9*	6.0 *1.9*	5.5 *1.9*	3.151 *.044*
Return to homeostasis	6.7 *1.5*	6.8 *1.6*	6.9 *1.8*	6.8 *1.6*	.521 *.594*
Reintegration with loss	6.7 *1.1*	6.8 *1.1*	7.0 *1.0*	6.8 *1.1*	.941 *.391*

The data related to the emotional experience turns out to be quite interesting, also because the question asked in this regard can be assumed as a good predictor of the teachers resilience resources. This is explained by the results obtained through the analysis of the means and the variance (ANOVA) applied on the different answers given and on the studied dimensions: we obtain statistically significant results for *resilient reintegration* and *return to homeostasis* (*Tab. 5*). We observe that *courage and increased decision-making skills* and *motivation to solve the problems generated by the situation* obtain significantly higher scores in *resilient reintegration* and *return to homeostasis*, more than those experiencing *disquiet, fear, distrust, anxiety and low mood*.

Table 5. – The emotional experience and RPQ dimensions.

Emotional experience	*Discouragement, fear, prolonged sense of insecurity*	*Restlessnes, anxiety, low mood*	*Courage, decision-making ability*	*Motivation to solve problems*	Total	ANOVA
RPQ dimensions	Mean *DS*	Mean *DS*	Mean *DS*	Mean *DS*	Mean *DS*	F *sig.*
Resilient reintegration	5.0 *1.4*	5.0 *1.7*	6.2 *1.9*	6.7 *1.9*	5.5 *1.8*	8.491 *,000*
Return to homeostasis	6.0 *1.4*	6.3 *1.6*	7.4 *1.6*	7.0 *1.56*	6.8 *1.6*	8.975 *,000*
Reintegration with loss	6.7 *1.1*	6.6 *1.1*	6.8 *1.0*	6.9 *1.0*	6.8 *1.0*	1.648 *161*

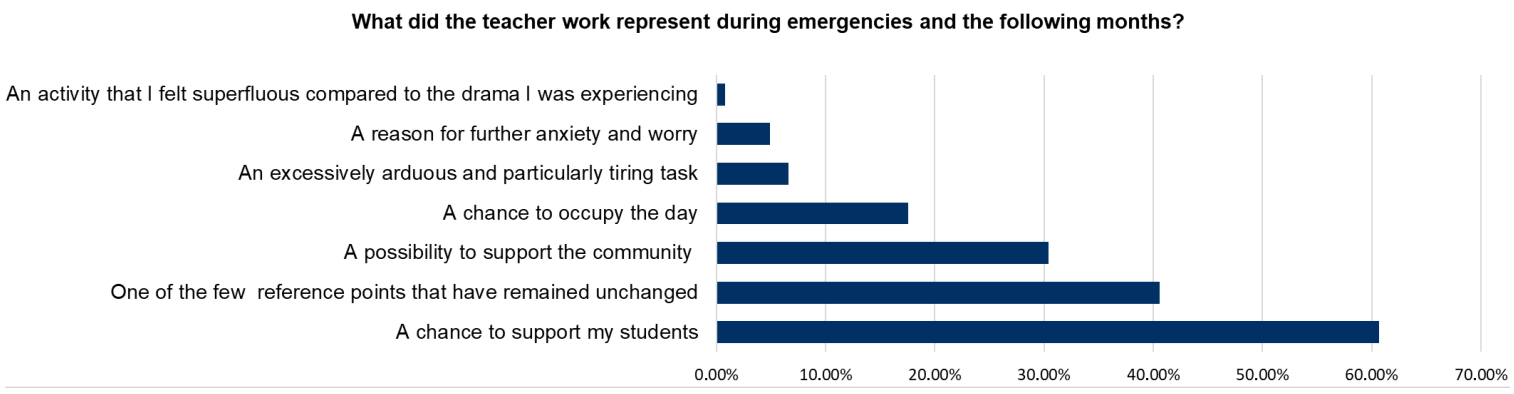

Figure 3. – Perception of the professional role in emergency.

4.3. *How do earthquakes change teachers' professionalism?*

The earthquakes significantly affected the meanings attributed to the profession carried out. 33.7% of respondents think they changed as a teachers (No: 32.6%; I do not know: 32.0%).

The answers shown in the graph (*Fig. 3*) highlight that the teacher's role is redefined much more as a function of a supportive relationship and propensity for students life experience: 60.7% of respondents are in fact oriented towards support for students and 30.4% towards support for local community. Other answers – referred to «internal» dimensions of professionalism and more self-centered – reveal that their own job can be an important point of reference in precarious and emergency situations; it is therefore a «normalization» element within a situation perceived as uncertain and chaotic (*One of the few point of references remaining unchanged compared to the uncertainty caused by the disaster*: 40.7%). At the same time, for 17.7% of those interviewed work represents a means of distraction from the problems that they are going through. 11.6% of respondents do not feel particularly impressed by events and do not attribute new meanings to the profession (teachers belonging to the Seismic Zone 3). Only 5% of respondents attributed a negative meaning to the profession carried out in the emergency period, seeing it as a source of anxiety and further distress.

To verify the impact determined by the emergency situation in professional behavior, 5 indicators were presented. The subjects were asked to respond on scales with values ranging from 1 to 4, referred to the degree of change in behavior towards work (High - Moderate - Low - None). The indicators allowed, through the sum of the scores, to build an index on the impact of emergencies on professional motivation (Motivation Index – minimum theoretical = 5, max theoretical = 20). Generally, the respondents report that they increased and improved significantly, with average scores higher than 3.0% in all the considered items: attention to students experiences, attention to interpersonal relationships, motivation to solve the problems generated by the emergency, etc. (*Tab. 6*). The indicator that gets fewer answers on the item High concerns *courage* and *decision-making skills*, which represent aspects of professional resilience (linked to appraisal skills and coping styles). As we will see later, the *motivation index* correlates significantly with *resilient reintegration*, indicating a close relationship between resilient skills and motivational drive generated by the critical situation.

The analysis of correlations, for which the Spearman Rho coefficient was applied, allows us to identify some important significant relationships between variables (*Tab. 7*).

Table 6. – Impact of emergency on professional behaviors.

What impact did the seismic events and the emergencies of the past months have on your professional life?	% None	% Low	% Moderate	% High	Mean *DS*
Greater attention to the students experience of life	0.2	3.3	46.2	50.2	3.5 *.6*
Greater attention to interpersonal relationships	1.0	4.0	50.8	44.2	3.4 *.6*
Courage and increased decision-making ability	0.6	9.6	55.8	34.0	3.2 *.6*
Motivation to solve the problems generated by the situation	0.2	5.7	52.3	41.8	3.4 *.6*
Desire and drive to plan focused educational interventions	0.4	5.5	51.2	42.9	3.4 *.6*

Table 7. – Professional motivation and RPQ dimensions – Correlations.

	Reintegration with loss	*Resilient reintagration*	*Return to homeostasis*
Professional Motivation Index	-0.03	0.25	0.40
	sig. 0.447	sig. ,000	sig. ,000

Resilient reintegration and *return to homeostasis* correlate very significantly with the *motivation index*. This means that personal resilience is associated with professional resilience, through orientations and behaviors toward the difficulties encountered in work. The stronger correlation between *return to homeostasis* and *professional motivation* (0.403; p = .000) also signals the push towards the search for equilibrium and the restoration of conditions prior to the critical event.

4.4. *About students: after an earthquake what changes do teachers observe in their students?*

We asked the teachers from the different seismic areas to report on the behavioural changes of their students after the emergencies experienced. The test was composed of 18 items which explored the following areas: (1) cognitive (attention, school performance, etc.); (2) emotional and behavioural (anger, anxiety, agitation, etc.); social (conflicts, propensity towords friendship, respect to the rules, etc.).

Table 8. – Changes in student behavior (frequencies and correlations).

	Frequencies %		Correlations	
	% Moderate High	*% None Low*	*Seismic Zone*	*Students Behavioral Change Index*
My students express significant feelings of fear	54.2	45.8	0.028	.334**
My students are less inclined towards friendship	52.4	47.6	-0.067	.156**
Among my students I observe an increased restlessness and hyperactivity	51.3	48.7	-.186**	.589**
I observe a low motivation to study	48.1	51.9	-0.042	.591**
My students have difficulty in recognizing and managing their emotions adequately	52.3	47.7	-0.047	.443**
In many cases, my students have developed problems of attention and concentration	47.2	52.8	-.150**	.636**
In many cases, my students have developed problems of anxiety and agitation	46.1	53.9	-0.08	.577**
In many cases, my students show a lack of interest in social problems	61.5	38.5	-0.091	.229**
In many cases my students show disinterest in the problems of the communit of reference	63.0	37.0	-0.025	.242**
My students perform discontinuously in school assignments (home study, homework)	65.0	35.0	-.111*	.645**
The behavior rules are disregarded more than in the past	65.7	34.3	-.192**	.601**
Overall, I register a lower academic performance	32.5	67.5	-.153**	.649**
Some students show sudden shots of anger	26.8	73.2	-.188**	.625**
I observe a low propensity for solidarity among my students	73.2	26.8	-.111*	.422**
My students are more closed in talking about their personal/family problems	73.5	26.5	0.037	.193**
My students don't tend to recognize the authoritativeness of teachers	74.1	25.9	-0.086	.487**
Among my students, a low mood is recorded significantly	24.2	75.8	-0.064	.479**
Conflict in peer relationships seems to have increased	23.3	76.7	-.199**	.620**
Student Change Index	40.5	–	-.159**	1

Table 8 shows the percentage values of the answers given, ranging from a minimum of 23.3% of Very/Quite responses to the indicator of *conflictuality* to a maximum of 54.2% on the indicator relating to *feelings of fear*. The most critical factors (with values above 50%) concern the emotional state (fear), restlessness and hyperactivity, sociality (propensity to friendship).

To verify if there is a relationship between the distance from the epicenter and the different behaviors observed (and therefore to check how much the intensity of the experience affects the students change in behavior in the classroom), we considered the seismic zone as an ordinal variable and we calculated the Spearman correlation coefficient Rho with the values associated to the different indicators (*Tab. 8*). The intensity of experience correlates significantly with the changes observed in various behaviors. Overall, the distance from the epicentres correlates significantly with the Behavioral Change Index with a value of -.159 (sig. ,000). This is also confirmed by calculating the correlation between the Behavioral Change Index and the *impact on the profession*, with a value of .252 (sig. ,000). The correlations between the various indicators and the overall indexes also suggest which behaviors are most incisively involved in the complex of behavioral change: if we assume as a limit a correlation equal to or greater than .300, we see that above all emotional/behavioral areas (fear, mood, anxiety, etc.) and those related to school learning (academic performance, motivation, etc.) are those most significantly affected (see also Isidori, 2012).

The datum concerning the seismic zone is also confirmed through the ANOVA: the differences between students attending school near the epicenter tend to be more problematic than those from more distant areas (20-50 kilometers away). The graphs (*Figs. 4* and *5*) shows the differences that most significantly concern the groups considered. Also the scores in the complexive index demontrates a difference that reveals a most problematic situation for students from Zone 1 (*Fig. 5*).

Another interesting data also concerns the order of school attended by students and the relative age groups. The graph (*Fig. 6*) shows the average scores of the Behavioral Change Index for the different orders of schools and highlights highly significant differences that show how the more the age of the students increases the more their teachers observe a behavioral change.

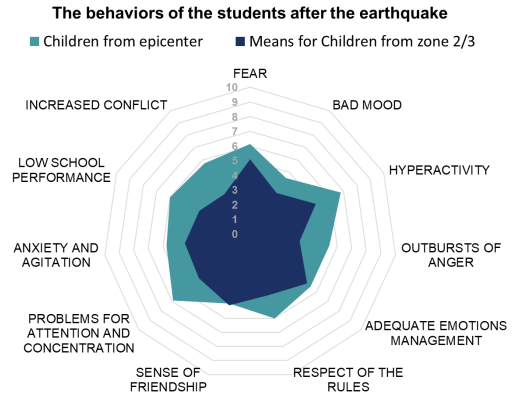

Figure 4. – Behavioral changes in students (comparation among groups).

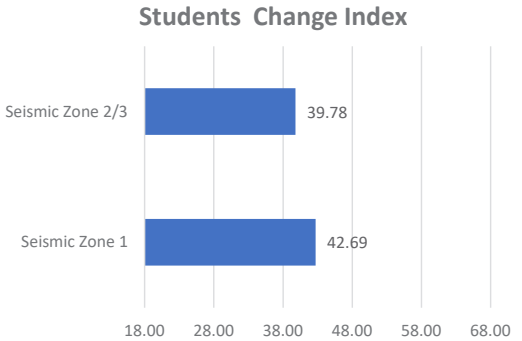

Figure 5. – Behavioral changes in students (complexive Index means in comparation among groups). Fisher Index (ANOVA); F(9.912); sig. ,000.

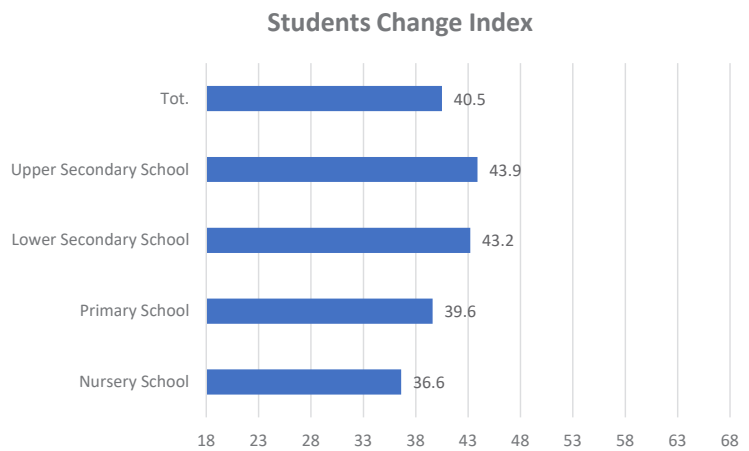

Figure 6. – Students Change Index and order of school attended. F(12.592); sig. ,000.

5. Conclusion

Teachers who live through a catastrophe report lower scores in levels of resilience and this justifies the need for specific resilience training. Even students who live right in an emergency situation differ significantly on many behaviors at school, concerning cognitive, social and emotional areas. In general, the study research showed significant relations between the emergency experience and the redefinition of professional role, motivation, resilience skills of teachers. At the same time, the student behaviors observed at school, changing significantly in relation to the distance from epicentres, can represent a further stressor to manage in professional life. In conclusion we can affirm that during an emergency, teachers' resilience has to be sustained, not only considering them as human beings, but also in the specific functioning of their professional role. A resilient teacher can become an important point of reference for students and can substain their resilience and their academic proficiency. Then, teachers training can become necessary in facing up to classroom management, help relationships with individuals, school learning, in network with other professionals (psychologists, educators, social workers).

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Riassunto

Tra il 2016 e il 2017, una serie di terremoti di forte intensità ha sconvolto il Centro Italia, con grandi ripercussioni sulla vita delle persone e delle comunità locali. L'articolo riporta i risultati di una ricerca riguardante l'impatto della catastrofe sul mondo della

scuola, sulla professione docente e sui comportamenti degli studenti. Un'attenzione particolare è stata rivolta alle capacità resilienti degli insegnanti e alle loro risposte professionali nelle situazioni catastrofiche. Per l'indagine si sono utilizzati un questionario e un test per lo studio della resilienza, somministrati a un campione di 477 docenti del Lazio e dell'Abruzzo. I risultati hanno evidenziato che l'esperienza della catastrofe incide significativamente sulla professionalità docente, sulla motivazione professionale, sui livelli di resilienza e sui comportamenti osservati negli studenti. Alla luce dei risultati è possibile affermare che in situazioni di emergenza la formazione dei docenti sui temi della relazione di aiuto e della resilienza diventa un fattore cruciale per il supporto alla loro professionalità, con ricadute importanti sugli studenti e sull'organizzazione scolastica.

Parole chiave: Catastrofe; Emergenza; Formazione degli insegnanti; Insegnanti; Resilienza.

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