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Stress of teachers: the transition to distance learning during the covid/19¹
Lo stress degli insegnanti: il passaggio alla formazione a distanza durante il covid/19

di

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Abstract

In literature many studies have been investigated burnout on teachers (Johnson et al., 2005; Kyriacou, 2001) as an effect of stress linked to various negative consequences in relation to various factors (Bakker et al., 2004; Leiter et al., 2000; Wright et al., 1998). In the scientific field, research indicates that the burnout of teachers is the result of a damaging work tensions for those who do not

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possess adequate characteristic's resources and the ability to successfully meet the professional demands imposed by the context working (Klusmann et al., 2008; Schwarzer et al., 2008). One trigger is certainly stress, which Lazarus (1966) placed in relation to coping ability. This study analyses the relationship among burnout, coping and resilience in a sample of teachers employed in primary elementary and middle school of a Comprehensive Institute of Lodi, during the transition from Teaching in Presence to Distance Teaching, due to the lockdown of COVID-19. The Institute has about 1000 and 400 members.

Keywords: distance learning, resilience, coping strategies, stress

Abstract

In letteratura molti sono gli studi sul burnout degli insegnanti (Johnson et al., 2005; Kyriacou, 2001) come effetto dello stress collegato a vari aspetti negative (Bakker et al., 2004; Leiter et al., 2000; Wright et al., 1998). Nel campo scientifico, la ricerca indica che il burnout degli insegnanti è il risultato di una tensione di lavoro dannosa per coloro che non possiedono le risorse, le caratteristiche adeguate e la capacità di soddisfare con successo le esigenze professionali imposte dal contesto di lavoro (Klusmann et al., 2008; Schwarzer et al., 2008). Un fattore scatenante è sicuramente lo stress, che Lazarus (1966) ha messo in relazione all'abilità di affrontarlo. Questo studio analizza la relazione tra burnout, coping e resilienza in un campione di insegnanti impiegati in un Istituto Comprensivo di Lodi, durante il passaggio dall'insegnamento in presenza all'insegnamento a distanza a causa del blocco di COVID-19. L'Istituto ha circa 1000 e 400 membri.

Parole chiave: formazione a distanza, resilienza, strategie di coping, stress.

1. Introduction

In response to the 2019 Coronavirus disease pandemic (COVID-19), 107 countries have implemented the national school closures by March 18, 2020. With the closure of schools, it began a race to activate various types of synchronous and asynchronous distance education, through platforms or social networks, all without great coordination from governments of countries.

Jonathan Zimmerman, from the University of Pennsylvania, wrote an article entitled "Coronavirus and the Great Online-Learning Experiment"; actually, we are certainly faced with a global experiment, at least concerning the application of distance learning in primary, middle, and high schools.

There was a tsunami with the online learning. For several years, schools have adopted the (online) electronic register as a method of interaction with their students' families, and teachers have had to start using it, substituting the classical paper register. *“Many schools are offering virtual learning for students (CDC, 2020) as a means of continuing education for the rest of the academic year. Teachers and administrators who were reluctant to teach online had little choice but to embrace this decades-old technology. Some teachers may have experienced fear and trepidation by transferring their classrooms online, but majority have done so at a rapid pace and in a short time; in the long run, they all seem adapting well. The digital divide is more apparent than ever (Guernsey et al. 2020). Children who are proficient with using computers and are ready for it”*

(Goldschmidt 2020). Instructors and teaching methods are somewhat behind schedule; however, there is hope that new models of education will emerge.

The impact on teachers' emotional regulation appears to be strong, and the best reactions witnessed were those supported by emotional intelligence.

“It is essential to consider the important role that emotion regulation plays in coping with stressful situations. Indeed, past studies have shown that high levels of emotional intelligence predict better psychological and emotional adjustment among teachers” (Lischetzke et al., 2003; Mearns et al., 2003; Biglan et al., 2013; Nizielski et al., 2013; Ghanizadeh et al., 2015; Yin, 2015; Cabello et al., 2016; Rey et al., 2016; Fernández-Berrocal et al., 2017; Grandey et al., 2017; Yin et al., 2018; Schoeps et al., 2019). *“Teachers with poor emotional intelligence tend to report higher levels of EE, DE, anxiety, depression, and burnout (Martínez-Monteagudo et al., 2019). In this manner, improving emotion regulation is likely to be accompanied by an increase in the quality and number of social relationships at work, empathy, and job satisfaction”* (Martinez et al., 2020). There is evidence that could support the hypothesis that there exists a relationship between burnout, resilience, and coping referred to a target of teachers.

Puertas Molero et al. (2019), in a scientific review, verified the importance of developing the emotional aspect of those working in the educational field by analysing the specificity of emotional intelligence in stress.

2. Burnout in relation to distance learning

2.1 Burnout and Teachers stress

Many teachers love their job and performing it by achieving their goals and having continuous gratifications. Nevertheless, a part of them that during their career, as stated by Buric et al, (2019), find themselves having "high levels of dissatisfaction and tension that can eventually lead to exhaustion, mental illness, and an exit from the profession". Several authors have described the work of the teacher as one of the most stressful professions (e.g., Johnson et al, 2005). As Chang (2009), points out, the investigation of negative emotions related to burnout were not properly investigated. The protective role of resilience, compared to the relationship among burnout, psychopathological symptoms, and negative emotions, was investigated by Buric (2019).

There are many potential sources of stress for teachers, such as teaching to unmotivated students, maintaining class discipline, coping with educational change and being under unsatisfactory working conditions (Kyriacou, 2001). When this set of factors is prolonged over time, it can lead to severe personal exhaustion and to the perception of a decline in one's working abilities, accompanied by high levels of fatigue and negative attitudes towards one's work.

The Conservation of Resources (COR) theory is believed to be an important model of stress and burnout (Westman, Hobfoll, Chen, Davidson and Laski, 2005). To promote their well-being, people tend to protect their resources (Hobfoll, 1998); consequently, stress could start when all of this is threatened, and an external event be perceived as a threat. In cases like this, there is a possibility that a stressor event leads to a possible burnout situation (Gorgievski & Hobfoll, 2008). In order to cope with stressful situations, it is essential to invest your resources and skills in order to avoid future losses, to renew and acquire new ones, and one of the factors that can surely help is resilience. Resilience, a rather recent area of research, can be defined as the ability to adapt to the stressful situation without transforming negative emotions into an organic disorder, working at an

above-average level despite unexpected events (Smith et al., 2008). In the literature, conflicting evidence emerged on the correlation between burnout and resilience.

Self-effectiveness, coping strategies, specific personality traits such as optimism, altruism, but, also, emotional stability and social and educational skills, are some of the characteristics of the teacher's resilience that can be defined as a process or dynamic result due to the interaction between the person and the environment over time. The support of colleagues, family, and friends becomes a relevant protective factor (Beltman, Mansfield, & Price, 2011; Bobek, 2002). There is evidence in the literature showing that teachers who possess the highest levels of resilience are the ones who are then able to better deal with the arising of situations and therefore have lower levels of burnout. (Buric et al, 2019). Vincente de Vera et al. (2019) analysed the correlation between burnout and resilience perceptions through a study carried out in several high school institutions. The work of the teacher requires mental, physical, emotional, and relational energies that can have repercussions in the personal, social, affective and family sphere. According to the authors, resilience reduces the vulnerability to burnout also thanks to implemented coping strategies, optimism, tolerance to frustration, positive perception of self-effectiveness.

2.2. Technology and teaching

In modern society, using technological aids has also become the norm in the pedagogical field.

The most commonly adopted type of communication in teacher training programs is computer-mediated communication (CMC), as it allows to optimize in a multidimensional way a learning path, acting on time and cost (Teresa and Richard, 2011). The asynchronous computer-mediated communication (ACMC) system, as part of the CMC described, allows training to be delivered asynchronously. Online social networks, such as Facebook, blogs and discussion forums, are examples of ACMC. Teachers' training paths are surrounded by a technological and media system, in which people are so involved with electronic devices that they are often defined as "Digital Natives" (Prensky, 2001), "Net Generation" (Tapscott, 2009) or "Millennials" (Oblinger & Oblinger, 2005). Students of this generation tend to be "social", preferring interactive communication as a way of learning (So, Choi, Lim and Xiong, 2012).

The inclusion of technology in training courses is supported by some theoretical hypotheses. According to Yim and Warschauer (2017), technology has increased everything about collaborative work forms and patterns, increasing their literacy practices. These new forms of communicative practices allow the hypothesis of sociocultural theory to be incorporated (Vygotsky, 1978) into didactic computer contexts. The sociocultural theory postulates that, for example, computers and language, considered respectively as material and psychological tools, can mediate the human mind since cognitive activities are triggered by people's interactions with the social environment.

As a result, there are several scientific evidences that consider the CMC as an effective tool to facilitate reading and comprehension development processes. Additionally, course management system (CMS) programs, such as Moodle, can be a constructive tool to support the learning process – as well as other CMSs with similar functions to those of Moodle.

2.3. Emotions and technology

The identity of individuals is constantly changing, also by virtue of the strong technological acceleration. From this point of view, the age of those who use computer systems is relevant, as it

could have a correlation with their literacy level (D'Errico et al, 2019). This observation opens up the possibility that observation on individuals can be made differentiating them according to the digital generation. The ISTAT (National Institute of Statistics) which is the Italian public research identity, published in a document dated 2018 a subdivision depending on the year of birth (Internet@italia 2018). The layout of the subdivision is shown in the following Fig. 1

Generations		Definition	Age of generations and corresponding calendar years			
Starting Date	Ending Date		20 years old		30 years old	
1926	1945	Generation of Reconstruction	1946	1965	1956	1975
1946	1955	Generation of Involvement (Baby boom 1)	1966	1975	1976	1985
1956	1965	Generation of Identity (Baby boom 2)	1976	1985	1986	1995
1966	1980	Generation of Transition (Generation X)	1986	2000	1996	2010
1981	1995	Generation of Millennial (Millennial)	2001	2015	2011	2025
1996	2015	Generation of Networks	2016	2035	2026	2045

Fig. 1 – ISTAT and Ugo Bordoni Foundation – Division of generations

Even more specific are the already mentioned definitions of "Digital Natives" (Prensky, 2001), "Net Generation" (Tapscott, 2009) or "Millennials" (Oblinger & Oblinger, 2005), in particular, Prensky described Digital Natives as people able to manage parallel and multitasking processes using mainly visual images and mastering graphic awareness, multidimensional visual-spatial skills, careful distribution in multiple positions simultaneously, and quick responses to expected and unexpected stimuli. You could infer that they are people subject to hyper-stimulation that they are able to handle. Prensky, in the same study, defines "digital migrants" people who tend to be sequential, mainly focused on textual elements, and more characterized by a greater propensity to reflection and metacognition (D'Errico et al, 2019). Prensky (2009) also distinguished between digital skills and digital wisdom. Digital Natives tend to have higher abilities but a lower ability to use them in a positive and wise way. Digital immigrants, on the other hand, follow an opposite pattern.

The literature extensively deals with the theme of "natives" and "digital migrants", but it should not be observed only from a dual perspective, as there is increasing evidence that shows many more facets than a simple binary subdivided one, and, rather, questions this desire to characterize young people as attentive digital natives and technologically experienced and more generations as digital immigrants with technological problems. The use of e-learning is increasingly recognized as an important part of learning, and it is, therefore, necessary to understand what is the current orientation of research on educational technologies with a vision that goes beyond the generation technological boundaries (Smith, 2013). Using an expression of Prensky (2001): "Do we see the future through the eyes of a cyber-immigrant or a cyber-native?". An adult in approaching distance training must be able to feel facilitated and part of an inclusive process, and not as if he or she were "digitally challenged". There is an increasing amount of research (and, consequently, increasing research evidence) involving adults in on-site learning environments, from which it is clear that emotional intelligence and personality can be relevant factors that can lead to the success of online education itself (Berenson et al., 2008). In particular, it has been established a correlation between emotional intelligence and age that could suggest that a "digital migrant" could be more effective than a "millennial" in an online training course (Ransdell 2010).

The role of emotions is very important. Moreover, concerning distance learning there are evidences in literature that create a relationship between the emotions and the results obtained (both by teachers and students), which also examines simple elements such as quantitative research on grades and exams (D'Errico et al., 2016). Despite this, scholars have also brought their attention to all the components involved, considering other factors such as commitment, seen as a quantitative indicator and also a predictor of the academic adaptation of students (Pekrun 2006). During online training, emotions can be pervasive (Artino 2012) and can certainly influence choices and results. Those who provide and undergo a learning process, in a distance context, could live negative affective states such as anxiety, boredom, fatigue, and confusion during particularly difficult tasks (D'Errico et al., 2016), and several researches have shown that reporting one's emotions to others or sharing them with the student community can lead to a better end result (Pekrun, 2006), process that during the COVID-19 period has been somewhat limited and impaired. Positive emotions in online situations are supportive and it is for this reason that some authors recommend to take into account different aspects, formal (relationship with the teacher) and informal (relationships with the parties, as, for example, with colleagues) also in a situation of distance teaching (Efklides et al., 2005).

3. Materials and Methods:

For this study, it has been used five tests to observe, for every single individual, the attitude to be resilient in a moment of strong stress, comparing it with burnout and with the predisposition towards a positive thought.

The ability to develop coping strategies was measured by the Brief-COPE questionnaire (Carver, 1997), a reduced version of COPE (Carver et al. 1989). It is a test widely used in the analysis of coping strategies. Perceived Stress Scale (PSS), by Cohen et al. (1983) was used to analyse stress. Resilience was investigated with Adult Resilience Measure (ARM-R) developed (Ungar & Liebenberg, 2011) as a reduction, made by the same authors, of the Child and Youth Resilience Measure (CYRM-R). The last revision is from 2018 (Jefferies et al. 2018). Adult Dispositional Hope Scale (Snyder et al., 1991 and Snyder 2000) was used to detect the propensity to positive thinking. Finally, the Maslach Burnout Inventory (Maslach et al. 1981 - Maslach et al. 1986) was chosen for burnout.

4. The research project

4.1. Description of the sample

This statistic is the result of a scientific-observational research survey carried out through the administration of validated tests to the teaching staff of primary and middle schools of a comprehensive institute in Lodi. The aim of the research is to be able to describe how teachers are experiencing the period of transition from lessons in presence to digital ones, and what is the perception they have of themselves. The ability to implement coping strategies was also evaluated, and it was also observed how individuals adapted to the change in the management of classroom teaching. Specifically, to do this, a battery of tests has been set up to verify the resilience of people, their body perception, the understanding of what is the perceived identity of themselves, the learning styles and the origin of the acquired information, the perceived self-effectiveness, the propensity to solve complex problems and the ability to find adaptation strategies, understanding

what the specific type of person is on a scale of perceived stress; and, finally, to assess the predisposition to hope for things to resolve. 86.36% (95 out of 110) of the teachers interviewed participated in the completion of the proposed questionnaire. The statistical profiling based on the data collected shows that 90.53% of participants are women (86 out of 95) while 9.47% are men (9 out of 95).

Regarding civil status, 26.32% declared that they are single/unmarried (25 out of 95), 61.05% are married (58 out of 95), 6.32% are cohabitating (6 out of 95), 2.11% are widowed (2 out of 95) and 4.21% are separated or divorced (4 out of 95). For what concerns schooling, it emerged that 45.26% have a Master degree (43 out of 95), 8.42% have a Bachelor degree (8 out of 95) and 46.32% have a high school Diploma (44 out of 95). A repeating value in the analysis of the level of education among the data collected is represented by the secondary school Diploma (46.32% of total).

The average age of participants is 47.68, while mode is 57. Specifically, 3.16% are under 29 years (3 out of 95), 22.11% are under 39 years (21 out of 95), 26.32% are under 49 years (25 out of 95), 40% are under 59 years (38 out of 95) and 10.53% are under 69 years (10 out of 95).

Comparing the interviewed teachers' age and schooling, it results that under 29 years 100% graduated (3 out of 3), under 39, 80.95% graduated and 19.05% have a high school Diploma (17 graduates and 4 with Diploma, out of 21), under 49 years, 48% have a high school Diploma and 52% graduated (13 graduates and 12 with Diploma, out of 25), under 59 years 65.79% have a high school Diploma and 34.21% are graduates (13 graduates and 25 with Diploma, out of 38), and under 69 years, 30% have a high school Diploma, and 70% are graduates (7 graduates and 3 with Diploma, out of 10).

4.2. Research hypotheses

This study aims to verify if, in a situation of particular stress such as that generated by the Covid-19 pandemic – to which the stress that would tend to increase when synchronous distance teaching is delivered (D'Errico et al. 2016) is added –, resilience and coping strategies can be mitigating factors with respect with burnout, comparing it with the Portzky (2014) study on medical personnel subjected to long and continuous stress in situations that are not always predictable. Although these are different domains with respect to the specific activity, there may be similarities with the studies already cited, which argue that resilience and coping strategies can lead to greater resistance to burnout in teachers (Buric et al., 2019). There are several evidences in literature, after having verified the significant effects on burnout, which relate stress to resilience (Mann 2005 - Morris et al. 1996). The emergency situation, caused by the pandemic, managed to change some of our habits. In particular, it forced teachers to use distance learning to interact with students and colleagues.

The aim was to investigate how this event could affect the teachers of the selected sample in order to observe their correlations with the dimensions analysed and that resulted from the administered tests. Particularly, we wanted to investigate the relationship between resilience, burnout, the perception of stress, and the relationship with the ability to develop coping strategies in relation to burnout.

Moreover, it was investigated, between resilience and coping strategies, which of the two dimensions could be a factor with different importance compared to a situation of emergency or stress.

4.3 Analysis of statistical data

The correlation amid the various factors was verified to observe the relationship among resilience, burnout and stress, in order to detect if there was a correlation among the variables. The table in Figure 2 shows the result of the analysis carried out, calculating the Pearson coefficient.

Variable	Total Resilience	Personal Resilience (MAX 35)	Relational Resilience (MAX 50)	SSP	Emotional Exhaustion	Depersonalization	Personal Gratification
1. Total Resilience	–						
2. Personal Resilience	0.902	–					
3. Relational Resilience	0.834	0.737	–				
4. SSP	-0.323	-0.253	-0.307	–			
5. Emotional Exhaustion	-0.316	-0.235	-0.294	0.465	–		
6. Depersonalization	-0.227	-0.184	-0.245	0.335	0.538	–	
7. Personal Gratification	0.364	0.414	0.374	-0.271	-0.143	-0.335	–

Figure 2 – Pearson's Correlation: Resilience-Burnout-Stress

As is clear from above, the results with all the variables taken into consideration are significant even if the values are lower. It is, however, interesting to notice that the correlation with resilience performs the highest value, which could demonstrate, as reported in most of the literature, that this factor can be one of the important components that can mitigate stressogenic factors.

Using again the Pearson index, the same verification was carried out, comparing coping strategies with stress and burnout. The coping test dimensions are numerous, and some significant correlations can be noticed, although with a low value. Worthy of note is the value regarding "dealing operationally with the situation" (active coping or approach coping). There is evidence in the literature that this factor can prevent burnout (Arias-Gundin et al., 2018).

Performing a linear regression analysis with the dependent variable "stress", only the relation with the positive thought (Adult Dispositional Hope Scale) is meaningful, which is interesting, as it may indicate that attitude can influence the result (Figure 3).

Model Summary - SSP

Model	R	R ²	Adjusted R ²	RMSE
H ₀	0.000	0.000	0.000	6.912
H ₁	0.559	0.313	0.282	5.855

ANOVA

Model		Sum of Squares	df	Mean Square	F	p
H ₁	Regression	1405.793	4	351.448	10.252	< .001
	Residual	3085.196	90	34.280		
	Total	4490.989	94			

Coefficients

Model		Unstandardized	Standard Error	Standardized	t	p
H ₀	(Intercept)	19.411	0.709		27.371	< .001
H ₁	(Intercept)	44.291	6.460		6.856	< .001
	EtC	-0.033	0.059	-0.049	-0.563	0.575
	ADHS	-1.014	0.192	-0.534	-5.282	< .001
	Personal Resilience (MAX 35)	0.228	0.302	0.100	0.756	0.452
	Relational Resilience (MAX 50)	-0.115	0.113	-0.135	-1.021	0.310

Figure 3 – Regressione – Anova

The other independent variables taken into account have not yielded significant results.

5. Conclusions

The COVID-19 pandemic forced teachers to simultaneously activate mechanisms of adaptation. Being catapulted from the role of teacher to that of student was in some cases complex. Technology became essential during the COVID-19 pandemic. During a time of isolation and social distancing, the world relied on technology to learn, live, and keep in touch. Technology is best used to leverage and maintain social, physical, emotional, intellectual, and spiritual wellbeing for children, in an environment where they are co-engaged with an adult. The impact of the COVID-19 pandemic will be long-lasting. Hopefully, this time of disruption and loss of lives is not wasted, and rather propels us toward a new way a life improved with technology that enhances wellbeing for all.

It is also essential to proactively identify and gratify student needs so that the emergence or worsening of problem situations can be prevented. Problem situations can cause stress (Nizielski et al., 2013; Kaya et al., 2018), exhaustion, loss of enthusiasm (Aldrup et al., 2018; Aparisi et al., 2019), or even the abandonment of the teaching profession (Skaalvik et al., 2018; Chambers Mack et al., 2019) among teachers. Most importantly, it is essential for policy makers to reconceptualize the roles of teachers by realistically restructuring their workload and clarifying their responsibilities (Carlotto et al., 2019; De Carlo et al., 2019; Molero et al., 2019).

Teachers had to respond to a sort of "tech-engagement". This concept is one of the constructs of burnout (Maslach et al., 2001). Work engagement is defined as "a state of mind related to positive work, characterized by vigour, dedication and absorption" (Schaufeli et al., 2002), which is closely related to the personal resources of workers (Bakker et al., 2007). Academic commitment requires vitality, involvement with concentration (Salanova et al., 2010). Expanding this perspective, it has been established that commitment is linked to different personal resources, such as self-effectiveness (Bresó et al., 2011).

Furthermore, academic commitment is linked to academic satisfaction, passion for studies, and academic success. Since both burnout and commitment are related to perceived levels of stress in their environment, it is possible to claim that coping strategies are personal, cognitive, behavioural, and emotional resources, all useful to respond to situations considered stressful (Folkman et al., 1980). The effectiveness or ineffectiveness of coping strategies used by an individual facing a stressful situation modulates the possible impact it would have on their health (Arias-Gutin et al., 2018). This study found out that, in the sample analysed, the presence of resilience factors and the ability to adopt coping strategies, with a positive thinking, significantly reduced stress and the risk of burnout by demonstrating the formulated hypothesis that the propensity to adapt even in unexpected situations, such as a pandemic, allows individuals to deal with what happens with less stress and therefore with less chance of burnout. A new factor included is that relating to mental disposition (Adult Dispositional Hope), whose values have proven statistically significant. Although it has long been known in the literature that mindfulness can be soothing to stress factors (Hatton-Bowers et al. 2020), the connection with teaching is not so much observed, except in the medical and nursing field.

It is left to future studies what may be the preventive strategies that can be put in place in order to support the development of skills that seem to be useful for a better life quality regarding professional life, as well as to deepen the relationship between a positive mental attitude in relation to resilience in teachers.

The weakness of this study is the absence of data collection prior to the COVID-19 situation, which, for obvious reasons, was not performed. It is proposed, at the end of the health emergency, to carry out, on the same sample of people, a subsequent survey, to compare the future results with the current ones.

It is hoped the COVID-19 threat will soon be a memory. When it will be, we simply should not go back to our teaching and learning practices before the virus, forgetting ERT.

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