Growing Stronger Together: Are Students' Positive Resources Correlated to Teachers' Features? How Could They Be Incremented?

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Abstract

According to scientific literature, teachers' positive characteristics foster students' well-being. Plus, numerous studies show that specific educational trainings increase students' positive resources. The present research aims at exploring: (i) the association between teachers' and adolescent students' resources; (ii) the impact of a neuropsychopedagogical training on adolescents (i.e., Envisioning the Future, EF). The sample includes N=113 adolescents (mean age=13.94 years) whose responses were combined with their teachers' data (N=12, mean age=48.5 years). Participants completed self-report measures (e.g., on self-compassion, selfefficacy in the management of positive and negative emotions, resilience, and selfdetermination) and ad-hoc items about bullying frequency. To respond to aim (i), correlational analyses were conducted. Analyses of variance (ANOVA) were conducted to respond to aim (ii). The results show that teachers' positive attitude and perceived social support correlate positively with students' self-efficacy in managing positive emotions (p<.05). Furthermore, teachers' common humanity correlates positively with the frequency with which adolescents report bullying among peers (p<.05). A negative correlation emerged between teachers' self-efficacy in managing positive emotions and students' self-judgment (p<.05). ANOVAs highlight that EF increases adolescents' self-efficacy in managing negative emotions [F(1,112)=4.56 (p<.05)], common humanity [F(1,112)=11.28, p<.01], selfdetermination [F(1,112)=45.05, p<.001], frequency of reporting bullying [F(1,112)=14.85, p<.001]. The research lays the ground for future studies on trainings that enhance students' positive resources, conceptualizing well-being as a socio-contextual and not only personal variable.

Keywords: Students, Teacher, Neuropsychopedagogy

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Introduction

Adolescence is a critical period for the formation of personal and social identity, as stated by Erikson (1958), Marcia (1966), and Sadowski (2021). During this phase, young individuals prepare for adulthood, which entails actively participating in their community of reference. The development of adaptive cognitive, social, and emotional resources balances the investment in social relationships (Tarrant et al., 2001; Tanti et al., 2011). While the family is no longer the sole source of support and socio-emotional nourishment, the peer group, and other adult figures (e.g., teachers, and educators) gain importance in constructing personal identity in educational, playful, and relational contexts. As adolescents' social horizons expand, growth challenges increase, enriching internal and interpersonal connections (Armsdeen & Greenberg, 1987; Tarrant, 2002; Nickerson & Nagle, 2005; Albarello et al., 2017). According to this premise, the school is the primary context for socialization during adolescence: here students spend most of their time learning concepts, interacting with peers, developing interests in extracurricular activities, and preparing for the future (Eccles & Roeser, 2011). School, therefore, significantly influences every aspect of adolescent development and well-being (e.g., cognitive, psychological, social) (Wigfield et al., 2006; Sadowski, 2021). The school context contributes substantially to the development of a resilient individual, which could be furtherly supported through specific educational training (Koni et al., 2019).

Do Teachers' Characteristics Influence Students?

Beyond the literature that has investigated how the relationship between teachers and students (positively or negatively connoted) can influence the well-being of younger students and be a resource for them (Wang et al., 2013; Hagenauer et al., 2015; Summers et al, 2017; Uslu & Gizir, 2017; Harding et al., 2019; García-Moya et al., 2020; Ansari et al., 2020; Ye et al., 2022), it is also useful to ask how much and in what ways precise teacher characteristics can influence precise characteristics of the adolescent student.

According to various theoretical frameworks such as Social Learning Theory (Bandura, 1969), life-skills education (WHO, 1994) (Lumpkin, 2008), and Pedagogy for the Third Millennium (Paoletti et al., 2008), teachers act as role models for behaviour and moral reasoning and their well-being is closely linked to that of the younger generation. These aspects are in line with what neuroscience has shown: mirror neurons in fact (Rizzolatti et al., 2004), activated by observing the other in the performance of an action, describe how individuals can influence each other through their characteristics (Paoletti, 2008; Paoletti & Selvaggio, 2013). The discovery has influenced educational practices, as there is an influence between the educating figure and the students, which can shape the latter's well-being (Godwin, & Trubridge, 2021).

Indeed, research shows that teachers' emotions can influence adolescent students (Becker et al., 2014; Frenzel et al., 2021) in terms of socio-emotional competence and motivation (Rodrigo-Ruiz, 2016). Keller and Becker (2021) suggest that three main emotional experiences, namely anger, pleasure, and anxiety, are directly related between students and teachers, and it is crucial for students' well-being that they perceive emotional authenticity in their interactions with teachers.

Teachers with positive characteristics, therefore, could provide positive examples to their students, including the ability to emerge strengthened from adversity (resilience, Luthar et al.,

2000), the ability to identify and achieve goals (self-efficacy, Bandura et al., 1995) and the ability to maximize joy and appreciation in daily life (self-efficacy in managing positive emotions, Caprara et al., 2008). Similarly, negative characteristics of teachers may have a negative impact on adolescent students. For example, exposure to the example of an adult figure who tends to run away from stressors by using avoidance as a coping strategy (Carver et al., 1989), could generate confusion in young students in dealing with adversity. At the same time, self-critical adult figures could lead adolescents to greater self-judgement, potentially associated with depression and rumination (Rimes & Watkins, 2005).

As argued by White & Kern (2018), within educational contexts, positive education is an increasingly relevant theoretical and empirical strand for pedagogical practice, as it allows for in-depth exploration and evaluation of the best teaching and learning techniques in a relational context. In line with this assumption, the present study aims to detect correlations between teachers and students concerning psychological variables related to well-being and the impact of the neuro-psycho-pedagogical intervention "Envisioning the Future" (EF) on the psychological, social, emotional, and behavioural dimensions of adolescents' lives.

Envisioning the Future: A Neuropsychopedagogical Training

Envisioning the Future is a neuropsycho-pedagogical training developed by the Patrizio Paoletti Foundation and implemented in Italy with educators in the juvenile penal circuit (Paoletti et al., 2022a; , Paoletti et al., 2023a), inmates (Di Giuseppe et al., 2022), earthquake survivor communities (Di Giuseppe et al., in press) and Ukranian refugee parents (Paoletti et al., 2023b). The 2022 edition of the EF project, which was conducted from March to May 2022, for a total duration of 8 weeks, offered adolescents and their teachers a training course aimed at fostering individual and school community well-being, especially after the discontinuity caused by the Covid-19 pandemic. Born on the theoretical basis of the Sphere Model of Consciousness (Paoletti & Ben-Soussan, 2019; Pintimalli et al., 2020) and the Pedagogy for the Third Millennium (Paoletti, 2008), Envisioning the Future offers a pathway that integrates theoretical notions on the functioning of the resilient brain and techniques to manage stress, face adversity, cultivate self-determination, by promoting individual well-being and a sense of belonging to humanity in the broadest sense. The project included participation in live webinars with Patrizio Paoletti Foundation trainers and access to a free digital platform.

The training course entitled "The Ten Keys for Resilience" provided interdisciplinary theoretical-practical content. Each key included a training session focusing on a specific theme, accompanied by guided exercises to train resilience in teachers and adolescents, including: (1) Start with what you can control and make small decisions; (2) Identify an attainable, exciting, measurable goal; (3) Several times a day become aware of your posture; (4) Be inspired by stories; (5) Ask yourself what is really important; (6) Cultivate gratitude; (7) Experience the other as a resource, cultivate and expand your social network; (8) Cultivate curiosity; (9) Practice a few minutes of silence; (10) Embrace and transform: before going to sleep generate your own tomorrow today (Paoletti et al., 2022b). The training sessions were accompanied by guided exercises and techniques: relaxation and meditation techniques, mind-training, guided visualisations. All these techniques were presented to foster self-programming, training in proactive and non-self-judging storytelling, and the enhancement of pro-social behaviour, to experience a common, positive, and generative resilience matrix.

Study Aim

The present study has two aims: (i) to explore the correlations between students and teachers in terms of positive resources and negative characteristics; (ii) to investigate the impact of a neuro-phychopedagogical training training on multiple areas of adolescents' emotional, social and psychological functioning (e.g., emotion regulation, self-compassion dimensions, self-determination dimensions and the frequency with which bullying incidents are reported by the peer group).

Method

Participants

A sample of N=113 adolescents experienced EF and took part in the research. They had an average age of 13.94 years (aged between 12 and 18 years, 52% female) and came from different Italian cities (Assisi N=10; Acerra N=22; San Benedetto del Tronto N=3; Oristano N=2; Rome N=76); N=12 teachers with an average age of 48.5 years (100% female) who taught in the classes attended by the adolescents also participated in the research.

Measures

In this study, multiple psychological variables related to well-being were assessed in adolescents and their teachers. The Self-Compassion Scale (Neff, 2003; Veneziani et al., 2017) was used to evaluate six dimensions of self-compassion, which include self-kindness versus self-judgment, common humanity versus isolation, and mindfulness versus overidentification. This scale consisted of 26 items, and participants responded on a Likert scale ranging from 1 (almost never) to 5 (almost always).

Adolescents completed the APEN/A - APEP/A scales (Scales of Personal Self-Efficacy in Managing Negative and Positive Emotions) (Caprara, ed., 2001) to assess their personal self-efficacy in managing negative and positive emotions. This scale consisted of 15 items, and participants responded on a 5-point Likert scale ranging from "Not at all capable = 1" to "Completely capable = 5."

Students were also given an ad-hoc scale on bullying that assessed the frequency of bullying incidents in their school. Participants could respond using a time-frequency scale ranging from 0 (never) to 4 (every day).

Additionally, some dimensions of Soresi et al.'s (2004) Self-Determination Questionnaire were administered to assess how secure the adolescents felt about their choices. Specifically, items relating to the young person's sense of security regarding future decisions and their own abilities were examined. Participants responded on a 7-step Likert scale.

Finally, the teachers' coping strategies were assessed through the administration of the COPE-NVI questionnaire (Coping Orientation to the Problems Experienced-New Italian Version) (Sica et al., 2008), which consisted of 60 items. Participants responded on a 4-step Likert scale ranging from "I usually don't do it = 1" to "I almost always do it = 4." This questionnaire measures five basic dimensions related to coping, including social support, avoidance strategies, positive attitude, and transcendent orientation.

Procedure

The research project was developed by the Research Institute for Neuroscience Education and Didactics (RINED) of the Patrizio Paoletti Foundation, in collaboration with the University of Padua, whose ethics committee approved the study (protocol: 2020-III/13.41.10). A convenience sampling was carried out, involving in the project schools whose teachers and school principals had participated in online events of the Patrizio Paoletti Foundation, accredited by MIUR, between April 2021 and February 2022. The students took part in the Envisioning the Future (2022 edition) training between March and May 2022, with informed consent from their families. The research required the compilation of the battery of tests in two stages (e.g., t1, March 2022; t2, May 2022): in order to associate the data of the subjects from t1 to t2, an identification pseudonym was requested (e.g., first two letters of the municipality of birth and last four digits of the mobile phone number).

Analytic Plan

To answer the first research objective (i), correlation analyses (Pearson's r) were carried out to understand statistically significant associations between students' and teachers' scores on the mentioned scales. To investigate the second (ii) research aim, analyses of variance (ANOVA) were carried out to compare negative emotion regulation, self-determination, perception of a sense of common humanity, and perception of bullying in a group of adolescents before and after EF neuropsycho-educational training.

Results

Correlations

The Pearson correlation analyses show that two teachers' coping modalities, namely positive attitude (r=.190, p<.05) and perceived social support (r=.193, p<.05), correlate positively with students' self-efficacy in managing positive emotions. Furthermore, teachers' common humanity correlates positively with the frequency with which adolescents report bullying among peers (r=.304, p<.05). A negative correlation emerged between teachers' self-efficacy in managing positive emotions and students' self-judgment (r=-.127, p<.05).

ANOVA

The pre-post analyses of variance (ANOVA) show the effects of the neuropsychopedagogic training on the students (Table 1). From pre- to post-training (e.g., T1 to T2), the regulation of negative emotions in the students F(1,112)=4.56, p=.03, the sense of common humanity F(1,112)=11.28, p=.001, self-determination for future decisions F(1,112)=45.05, p=.000, the frequency with which bullying is reported F(1,112)=14.85, p=.000, increase in a statistically significant way.

	Mean (T1)	Mean (T2)	F	p
Self-efficacy in managing negative emotions	23,58	24,81	4.56	.035
Common Humanity	2,63	2,97	11.28	.001
Self-determination for future decisions	24,38	28,12	45.05	.000
Frequency of reporting bullying	0,85	1,315227	14.85	.000

Table 1. ANOVAs pre-training EF (T1) and post-training EF (T2)

Discussion

Correlations Between Students' and Teachers' Characteristics

The study found that positive teachers' attitudes and perceived social support correlate with higher student self-efficacy in managing positive emotions. Teachers' common humanity was positively correlated with the frequency of reported bullying among peers, while teachers' self-efficacy in managing positive emotions was negatively correlated with student self-judgment. The results emphasize the importance for adolescents of the relationship with adults who are external to the family (Nickerson & Nagle, 2005; Sadowski, 2021) in the context of socialization and cognitive, psychological, and social development of school (Eccles & Roeser, 2011; Wigfield et al., 2006; Uslu & Gizir, 2017). During adolescence teachers can influence adolescents' psychological functioning and well-being because they constitute behavioural models to imitate (Bandura, 1969; WHO, 1994) and their emotional, social, and cognitive resources impact their students as attested by previous studies (Ansari, 2020; Becker et al., 2014; Frenzel et al., 2021; Rodrigo-Ruiz, 2016).

The results of the present research allow to focus on the correlation between teachers' coping styles and adolescents' self-efficacy in managing positive emotions. The construct of coping (Cramer, 1998) encompasses the specific strategies individuals use to face stressors: the exposure to a teacher who can face problems with a positive attitude (Richards, 2012) and cultivating relationships able to offer social support (Zimet et al., 1988) vehicles to adolescents the importance of optimism and belonging to a social network of human bonds. The higher these teachers' characteristics are, the more the students are prone to be self-efficacious in maximizing joy and appreciation in everyday life (Caprara et al., 2008; Perasso & Velotti, 2020), positive emotions that can trigger emotional well-being (Fredrickson & Joiner, 2002).

Moreover, the correlation that emerged between teachers' common humanity and adolescents' frequency for reporting bullying furtherly highlights the importance of imitative

learning during socioemotional and moral development (Bandura, 1696; WHO, 1994). According to Neff (2003) common humanity is the perception of belonging to the human species, as a group, as a wide family. This aspect in teachers could foster prosocial behaviours (Gini et al., 2007; Jenkins & Fredrick, 2017; García-Vázquez et al, 2020; Zăbavă, 2020; Gonçalves et al., 2021) in their students, who result more prone to see and report with higher frequency incidents of bullying between peers.

Finally, in this study, the capacity to amplify positive emotion (Caprara et al., 2008) by the teacher negatively correlates with student's self-judgement. It is possible to speculate that the exposure to an adult role-model who can appreciate the positive aspects of daily life, beyond difficulties and personal limits, encourages the adolescent to embrace self-compassion (Neff, 2003), counteracting negative ouctomes (e.g., depression, rumination) that may relate to self-judgement (Rimes & Watkins, 2005).

The Impact of Envisioning the Future on Adolescents

The EF program emerged to positively impact adolescents. After the training, students had an increase in self-efficacy in managing negative emotions, in the sense of common humanity, in self-determination regarding future decisions, and in the frequency with which they reported bullying.

Perceiving self-efficacious in managing emotions refers to two constructs: self-efficacy, as the perception of being able to achieve specific goals (Bandura, 1995), and emotional regulation, such as the ability to regulate the intensity and frequency of emotional states (Caprara et al. 2008; Perasso & Velotti, 2020). Becoming more capable of managing negative emotions implies, for adolescents who have participated in EF, a greater ability to avoid being overwhelmed by anger, irritation, discomfort, and discouragement. This capacity is crucial in adolescence, a phase linked to the development of identity, as theorized by Erikson (1958). Since adolescence is permeated by the polarization between the definition of personal identity and role confusion, not being overwhelmed by negative emotions is fundamental for facing complex crises and life transitions, not only in the strictly academic field but also in the socio-relational one (Tarrant et al., 2001; Koni et al., 2019).

EF also seems to encourage adolescents' sense of self-determination regarding future choices, defined by Soresi et al. (2004) as the process through which people actively engage and control the direction of their own lives. It is an active and continuous process that involves making decisions and taking actions that reflect one's values, beliefs, and goals, taking responsibility for one's own actions. This variable is a key factor in promoting overall well-being and quality of life (Soresi et al., 2004). By stimulating self-determination through neuropsychopedagogical training, boys and girls can positively channel their commitment, resources, and motivations toward future choices that promote healthy identity development (Marcia, 1966). The two constructs (i.e., self-efficacy in managing negative emotions and self-determination regarding future choices), increased by EF, refer to an individual emotional and cognitive dimension; however, the program also positively affects adolescent boys and girls in the socio-relational capacities.

There is an increase in the perception of common humanity and in the frequency with which bullying is reported to the frequency questionnaire by adolescents after participation in EF. Common humanity, as a dimension of self-compassion (Neff, 2003), implies the perception of belonging to one's community and, in a broader sense, to the human species. Bullying, on

the other hand, includes in its definition a broad constellation of verbal, physical and psychological, recursive, and deliberate behaviours towards subjects perceived as more fragile, enacted by an individual or group (Guarino et al., 2011; Armitage, 2021). The spread of the phenomenon among adolescents is increasingly widespread (Armitage, 2021; Forsberg & Thorvaldsen, 2022) and represents a psychological emergency for new generations, also thanks to social networks (Perasso et al., 2021). Additionally, the phenomenon has not been halted by the COVID-19 pandemic (Zwicker et al., 2021; Wachs & Hébert, 2021. Since it promotes common humanity and the frequency with which bullying among peers is reported, EF indirectly incentivizes prosociality, investigated by a wide body of studies (Gini et al., 2007; Jenkins & Fredrick, 2017; García-Vázquez et al, 2020; Zăbavă, 2020; Gonçalves et al., 2021), that positively influences decision-making, moral choice, compassion and understanding of the other, improving the sociorelational climate in the school context.

Limits and Future Directions

The research presents some limitations, such as the possibility of bias in self-report questionnaires (Dicken, 1963). Future studies should integrate qualitative and quantitative measures to overcome the issue. Plus, the study lacks of longitudinal data on teachers: this prevented the use of regression models to investigate interactions between variables (Hayes, 2013). Future studies could collect teacher data and implement follow-up data collection (e.g., at least 3 months after the second data collection) to investigate the long-term effects of the neuropsychopedagogical program (EF) on adolescents' well-being (Kazdin, 2008). However, despite these limitations, the study provides valuable insights into the teacher-student relationship and the positive impact of the EF program on students' multidimensional well-being, including emotional regulation, self-determination, and social relationships.

Conclusion

This study provides insight into the relationship between teachers and students during adolescence, showing that teachers' positive characteristics (e.g., coping styles, common humanity, self-efficacy in managing positive emotion) correlate with specific aspects of adolescents' psychological wellbeing and functioning (e.g., emotion regulation, sensitivity towards bullying, self-judgement). The study also measured the impact of a neuropsychopedagogical program (EF) on adolescents, finding positive effects of the training in terms of increased self-efficacy in managing negative emotions, perception of common humanity, self-determination regarding future choices, and frequency of reported bullying among peers. These results draw attention to the importance of pedagogical practices, knowledge, and techniques that promote and enhance the well-being of adolescents, emphasizing how a positive educational relationship with support and exchange with the teacher can improve the quality of life during adolescence.

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