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Believing in Yourself Matters! The Impact of Classroom Gratitude Week Intervention on Self-Regulation: The Role of Self-Esteem and Self-Effectiveness

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Abstract

Background: Gratitude-based interventions have been examined by numerous past studies and were confirmed to significantly reduce adverse mental health outcomes, e.g., distress, negative emotions, depressive mood, and anxiety and to increase positive aspects, e.g., life satisfaction, positive emotions, and quality of relationships. Yet, minimal research has examined classroom-specific gratitude expression interventions, and to our knowledge, none of them have tested their effectiveness on adolescents' self-regulation processes. Objective: Thus, in the current study, we assessed the impact of Classroom

Gratitude Intervention on changes in self-regulation. Methods: Surveyed Polish adolescents participated in classroom-specific gratitude expression intervention at school ($N = 149$, 54 girls), and divided into three subgroups regarding the level of two indicators of self-constructs. Results: There was a significant decrease in cognitive self-regulation from pre- to post-intervention. However, we observed an increase in self-regulation among low self-esteem students, a decrease in self-regulation among those with medium self-esteem, and no significant changes among youths with high self-esteem. We also documented an increase in behavioral self-regulation among low self-efficiency students, and a decrease in emotional regulation among high self-efficiency students. Gratitude positively predicted changes in emotional and behavioral regulation, and negatively in cognitive regulation. Conclusions: Our findings suggest that the effectiveness of a classroom-specific gratitude intervention in enhancing self-regulation directly depends on self-constructs, and is more beneficial for adolescents with low self-esteem.

Keywords: gratitude intervention, self-regulation, self-esteem, self-efficiency, early adolescents.

Introduction

To date, numerous scholars have established the fruitfulness of fostering gratitude at every stage of human life. The unquestionable benefits of experiencing and more significantly expressing gratitude encompass improvements in physical health, well-being, happiness, satisfaction with life and relationships, positive emotionality, pro-social behaviors, and quality of social relationships (Komase et al., 2021; Bernard et al., 2023; Tomaszek, 2023; Walsh et al., 2023). Nevertheless, the impact of gratitude-based interventions on adolescents' self-regulation in the context of self-constructs remains understudied. Specifically, most gratitude-based interventions are intended to strengthen the attitude of openness to expressing emotions, so by definition, they seem to reduce emotional self-control. In contrast, such interventions may be beneficial for self-regulation, defined as the ability to effectively manage energy states, emotions, behaviors, and attention, in ways that are socially acceptable and help achieve positive goals, such as maintaining good relationships, learning, and maintaining wellbeing (Shenker, 2012). Past studies have confirmed that *self-constructs* (i.e., self-esteem) play a *regulatory* role between individual positive psychological characteristics (positive traits and

emotion, i.e., gratitude), and socially acceptable behaviors, i.e., prosocial acts (Zhang, 2022). Moreover, some evidence suggests that interventions based on practicing gratitude by adults are more beneficial for individuals with low and average levels of self-esteem regarding their satisfaction with life (Gilek, 2010). Yet, across the literature, we have found no answer to the question: Is gratitude intervention conducted among youth more impactful for high or low self-esteem individuals regarding self-regulation? What is more, little is known about the relationship between gratitude and self-regulation among youth themselves as studies in this area are scarce. Therefore, our research aims to fill this gap and advance knowledge about how gratitude interventions impact self-regulation among young people differ in self-esteem and self-efficiency.

Gratitude and self-regulation

Unquestionably, emotions, especially positive ones, are strongly related to one's thoughts, reactions, expressions, arousal, and students' day-to-day functioning (Pekrun et al., 2017). Some of them motivate higher efforts, and some suppress learning activities. Gratitude was recognized as an adaptive emotional pattern, which has the power to maximize students' school performance and achievements. This complex emotion is a multifaceted emotion, generally defined as the feeling of thankfulness and appreciation towards someone or something for the positive experiences or benefits received (Guilliford et al., 2019; Zhang, 2022). Furthermore, reinforcing gratitude through interventions such as expressing it verbally or writing letters to benefactors, cultivating a sense of gratefulness, or gratitude reflection journals is linked to reduced distress and depression (Komase et al., 2021). These findings emphasize the importance of gratitude as a simple yet powerful tool for promoting mental health. Gratitude can play a vital role in enhancing self-regulation, which is essential for achieving personal success. Most scholars define self-regulation as an internal capacity, a multifaceted construct, and as "the act of managing thoughts and feelings to enable goal-directed actions such as organizing behavior, controlling impulses, and solving problems constructively" (Mur-

ray & Rosanbalm, 2017, p. 1). Factors that contribute to the development of self-regulation capacity are mostly connected to predictable, reciprocal, and supportive social environments. Importantly, gratitude plays a pivotal role in promoting creating such environments by building, and maintaining positive social relationships, enhancing social affiliation, and facilitate socially inclusive actions (Bartlett et al., 2011). Moreover, several studies have shown that individuals who cultivate gratitude tend to exhibit better self-regulation skills (Fatima et al., 2022; Zhang, 2022; Li et al., 2023). When one practices gratitude, they often experience greater emotional control, improved decision-making, and a heightened ability to resist impulsive behaviors (Gulliford et al., 2019; Maumus, 2022). Using Fredrickson's broaden and build theory the above-mentioned benefits may be explained by the tenet that expressing positive emotions has a special power to strengthen personal resources and the self's capacity for all types of self-regulation (Frederickson, 2004a; 2004b; Pekrun et al., 2011). Importantly, the benefits of positive affect for students manifest in a higher urge to play, savor, and integrate new information (key elements of the learning process), a stronger tendency to explore, which is crucial for cognitive curiosity, and in building save and close classmates relationships (positive school climate) (Frederickson, 2004a). In regards, based on the control-value theory (CVT) of achievement emotions in educational settings emotions experienced by students stem from two appraisals:

1. Perceived control over educational situation, namely one's agency beliefs over actions and their outcomes such as attributions, self-concept, self-efficacy, and result expectations. Gratitude increases personal attribution and activate both, self-improvement and friendly other perspective and by doing so promotes positive self-esteem, positivity towards others, and personal control over the situation as solvable.
2. Subjective value of the educational effects, defined as the importance of knowledge, learning activities or achievements. Gratitude appraisals may activate intrinsic positive learning motivation when the person recognized knowledge as valuable and enjoyment, and feel the power for positive change (Pekrun, et al., 2011; Armeta et al., 2017; Simonton & Garn, 2020).

In summary, theoretical frameworks and empirical evidence pinpoints on various positive functions of feeling and expressing gratitude, of which self-control over situation and positive self-evaluations are those benefits that are frequently listed by scholars. Considering the rationale presented above, we hypothesize the significant impact of gratitude intervention on adolescents' self-regulation changes, and the significance of students' self-constructs in the effectiveness of practicing gratitude.

Self-constructs as factors associated to self-regulation and gratitude

Self-regulation as a set of components (self-monitoring, self-evaluation, self-reinforcement, and self-control) constituting a dynamic process in which self-understanding and valuating are essential (Collins, 1984). Existing classical understanding of self-esteem is focused on attitudes towards oneself, that results in the sense of personal high achievements and aspirations (Lachowicz-Tabaczek & Śniecińska, 2011). Psychological definition of this construct is centered on one's general sense of worth and confidence in one's own capacities (Rosenberg, 1965). In accordance, people with higher self-esteem tend to have a more positive self-concept, believing in their abilities and having confidence in their decisions (Tus, 2020; Lubis et al., 2022). This self-assuredness can positively impact self-regulation because individuals with higher self-esteem are more likely to engage in proactive and goal-directed behaviors (Mruk, 2018). They are less prone to succumbing to external pressures or negative influences, as they have a strong sense of self-worth that motivates them to make choices aligned with their values and aspirations. In contrast, individuals with low self-esteem may struggle with self-regulation, often seeking external validation or engaging in self-destructive behaviors as a way to cope with their negative self-perceptions (Babazadeh et al., 2021). Importantly, prior studies recognized self-esteem as a mechanism underlying the association between gratitude and various positive psychological outcomes. For example, according to Yildirim et al. (2019, p. 154): "*Individuals who engage in activities that trigger the feeling of gratitude may experience higher subjective well-being if they perceive themselves as worthwhile*". Interestingly, recently conducted studies revealed that gratitude

and self-esteem interventions are moderators of the relationship between momentary positive affect and day satisfaction evaluations, however, greater gratitude had a positive impact on this association, while greater self-esteem was negative (Nawa & Yamagishi, 2024). The authors concluded that both these psychological characteristics play complementary roles as enablers of positive mental health outcomes. In addition, a large body of literature suggests that all benefits of gratefulness, are related to its power to build social and cognitive resources (social connectedness, and personal meaning of life), which subsequently contribute to mental health (Liao & Weng, 2018), but also self-concepts indices i.e. academic self-efficacy (Yudiani et al., 2023; Buenconsejo et al., 2024). In regards, self-efficacy is a construct introduced by psychologist Albert Bandura, referring to an individual's belief in the ability to accomplish specific tasks or achieve particular goals. Considering educational context scholars proposed the term academic self-efficacy, which epitomizes self-believes in the presence of ability to confidently manage learning process, the high expectation of individual's school competence and the capability to effectively handle the educational duties (Artino, 2012). Notably, this concept is closely associated with all self-concept indices i.e. general self-efficacy, self-confidence or social self-efficacy (Fan & Cui, 2024). Importantly, high self-efficacy is related to the perception of difficulties as opportunities for growth rather than threats. When it comes to self-regulation, individuals with high self-efficacy are more likely to set and pursue challenging goals, persist in the face of setbacks, and employ effective self-regulatory strategies (Lee & Kwon, 2023; Shoa, 2023). They are confident in their capacity to control their behaviors and emotions, which empowers them to regulate themselves successfully. Based on the findings presented above we hypothesized that self-constructs will play a significant role in the effectiveness of gratitude intervention focused on enhancing self-regulation capacity of youth.

Methodology

Research objective and hypotheses

The current research main purpose is to test the effectiveness of Classroom Gratitude Intervention in increasing self-regulation among early adolescent samples (CGI). The additional study aim was to examine the role of self-constructs, e.g., self-esteem and self-efficiency in changes in self-regulation indicators after gratitude-based intervention. We also aimed to test whether self-esteem and self-efficiency are significant for the relationship between self-regulation and gratitude.

Hypothesis 1: The classroom gratitude intervention (discussing the importance of gratitude, expressing gratitude within 1 week, and sharing publicly gratitude with classmates) will significantly enhance students' self-regulation.

Hypothesis 2: The effect of classroom gratitude intervention will vary depending on students' self-esteem and self-efficiency. Relative to participants with the highest self-esteem and self-efficiency, those in the gratitude conditions with the lowest self-esteem will experience greater increases in self-regulation.

Hypothesis 3: Self-esteem, self-efficiency, and gratitude will predict changes in self-regulation of students after CGI intervention.

Participants and procedure

This quasi-experimental study utilized a convenience sample. Ethical approval was obtained from the university Research Ethics Committee (Nb. DNa.0046.13.2023). The survey was conducted at randomly chosen primary schools located in different regions in Poland during the 2023 year. Students participated in the survey voluntarily and received no compensation. The preregistered criteria included: consent from schools, parents, and subjects; early adolescence period. The data was collected via paper-and-pencil method. We aimed to recruit at least 150 participants. The sample included 149 students from 7–8th grades ($M = 13.68$; $SD = 0.55$), who self-reported their genders as

53.7% female, 46.3% male. The gratitude conditions study procedure included several phases. In the first stage, we recruited teachers from schools, who were asked to carry out the gratitude-based intervention. Then teachers who agreed on CGI took part in an online training meeting with the researcher. The data collection took place over two-time points that were completed within three weeks. At the first time point (T1), participants were approached during their classes by teachers, and they consented and completed outcome measures: Adolescent Self-Regulation Scale (ASR), 1-item Self-Esteem Scale (SEs), General Self-Efficacy Scale (SEf). In the next stage (1-week later), teachers proposed gratitude-based activities that includes: (1) a knowledge quiz about gratitude with a discussion on the importance of this emotion; (2) watching a film about gratitude; (3) an expression of gratitude – a hand of gratitude; (4) class gratitude journal completed jointly by the classmates for one week; and (5) gratitude challenge completed individually within the next week. Last phase, at the second time point (T2), consisted of fulfilling similar scales (i.e., ASR, SEs, SEf), and the Gratitude scale (GQ) 0.142 students participated in both data collections (4.7% dropout across conditions from T1 to T2).

Instruments

Adolescents Self-Regulation Scale (ASR) by Novak and Clayton in Polish adaptation of Gajda et al. (2022). The instrument uses a 4-point Likert scale to estimate three aspects of self-regulation: emotional regulation (EMO), cognitive regulation (COG), and behavioral regulation (BEH) (i.e., *I have difficulty keeping attention on tasks*).

The General Self-Efficacy Scale (SEf) by Schwarzer & Jerusalem (1995) was used to measure the self-efficiency of participants (i.e., *How often do you manage to do the things that you decide to do?*). It consisted of two items developed. Participants answered on a 5-point Likert scale.

The Single-Item Self-Esteem Scale (SEs) by Robins et al. (2001) was used to assess the self-esteem of respondents on the 5-point Likert Scale (i.e., *I have high self-esteem*).

The Gratitude Questionnaire (GQ) by McCullough et al. in Polish adaptation of Kossakowska & Kwiatek (2014) was used for assessing gratitude levels in the experimental group (i.e., “*I have so much in life to be thankful for*”).

Data analysis

The normality of the data was observed as skewness and kurtosis ranged between -1 and +1 for all variables, and the application of z-test value for medium-sized samples ($50 \leq n < 300$, and scored ranged ± 3.29), also confirmed that the distribution of the sample was approximately normal (Mishra et al., 2019). The Student t-test for repeated measures was carried out to compare the data obtained from pre- and post-intervention conditions (G*Power sample size requirements: 45 subjects for conditions 95% power, α error 0.05, effect size 0.5). The participants from the gratitude conditions sample were divided into three sub-groups based on the students' level of self-esteem and self-efficiency. Subgroups for the SEs scores (*Descriptive Statistics for Experimental Group: $M = 2.97$, $SD = 1.28$*): (1) Low self-esteem ($n = 54$; $M = 1.54$, $SD = 0.50$); (2) Medium self-esteem ($n = 75$; $M = 3.45$, $SD = 0.50$); and (3) High self-esteem ($n = 20$; $M = 5.00$, $SD = 0.00$). The analysis conducted on *The SEf Scale (Descriptive Statistics for Experimental Group: $M = 7.53$, $SD = 1.24$) revealed the following subgroups*: (1) Low self-efficiency ($n = 66$; $M = 6.42$, $SD = 0.95$); (2) Medium self-efficiency ($n = 52$; $M = 8.00$, $SD = 0.00$); and (3) High self-efficiency ($n = 31$; $M = 9.10$, $SD = 0.30$) (The Kruskal-Wallis test confirmed the significance of differences in both self-esteem and self-efficiency sub-groups: $\chi^2 = 127.76$, $p < 0.0001$, and $\chi^2 = 137.53$, $p < 0.0001$, respectively) (G*Power sample size requirements 117 subjects for conditions: 95% power, α error 0.05, effect size 0.4). The non-parametric Wilcoxon test was used to test the significance of differences in pre- and post-intervention self-regulation characteristics between subgroups (G*Power sample size requirements 47 subjects for conditions 95% power, α error 0.05, effect size 0.5). Linear regression was used to estimate prediction power of independent variables (GQ, SEs, SEf) on changes in self-regulation. The multicollinearity was

small for all tested variables (around value of 1). The Durbin-Watson values ranged between 1.4 to 2.1 (G*Power sample size requirements 74 subjects for conditions: 3 predictors, 95% power, α error 0.05, effect size 0.15).

Results

CGI and self-regulation

A paired t-test was performed to examine the pre- and post-intervention differences in self-regulation. We observed only a significant decrease in COG. The effect size (Cohen's *d*) was low 0.20 95% CI [0.003, 0.33] Hence, there was no support for Hypothesis 1 that Classroom Gratitude Intervention significantly improve self-regulation for early adolescents engaged in it (Table1).

Table1. Comparison of the level of self-regulation indicators before (pretest) and after a 1-week Classroom Gratitude Intervention (posttest) in experimental group

Variables	Before CGI (<i>n</i> = 149)		After CGI (<i>n</i> = 142)		$\alpha_{t1/t2}$	<i>t</i>	<i>p</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
1.EMO	11.31	2.54	11.37	3.08	0.77/0.88	-0.34	0.732
2.COG	10.83	2.26	10.30	3.01	0.70/0.80	2.01	0.046
3.BEH	10.81	3.02	11.23	3.15	0.77/0.77	-1.61	0.111
4. SELFREG	32.95	5.67	32.91	5.61	0.79/0.71	-0.06	0.956

Note: EMO – Emotional Regulation; COG – Cognitive Regulation; BEH – Behavioral Regulation; SELFREG – General Self-Regulation.

Source: Authors' research.

The impact of CGI on self-regulation conditioned by self-constructs

CGI effectiveness conditioned by students' self-esteem: The Kruskal-Wallis test revealed significant differences between subgroups in EMO ($\chi^2 = 7.24, p = 0.027$), COG ($\chi^2 = 6.64, p = 0.036$), and SELREG ($\chi^2 = 9.54, p = 0.008$). The differences were also observed in the level of changes in BEH ($\chi^2 = 8.15, p = 0.017$), and SELFREG ($\chi^2 = 16.87, p < 0.0001$). A significantly higher change was observed in the group with the lowest self-esteem compared to the rest two sub-groups. A series of Wilcoxon tests revealed a significant increase in self-regulation indicators, e.g., EMO ($z = -2.73, p = 0.006$), BEH ($z = -2.70, p = 0.007$), and SELREG ($z = -3.08, p = 0.002$) among students with low self-esteem, and a significant decrease in EMO ($z = -2.10, p = 0.036$), and SELFREG ($z = -2.53, p = 0.011$) among those with medium self-esteem. The differences in the group with high self-esteem were insignificant.

CGI effectiveness conditioned by students' self-efficiency: The findings revealed differences between subgroups in COG ($\chi^2 = 9.67, p = 0.008$), BEH ($\chi^2 = 8.46, p = 0.015$), and SELFREG ($\chi^2 = 6.67, p = 0.036$), and in changes in EMO ($\chi^2 = 6.81, p = 0.033$). The in-depth analysis carried out with Kruskal-Wallis statistics uncovered two significant effects, i.e., the increase in BEH among adolescents with low self-efficiency ($z = -2.61, p = 0.009$), and a decrease in EMO ($z = -2.47, p = 0.014$) among youth with high self-efficiency. All the rest statistics were insignificant. The findings only partially confirm Hypothesis 2.

The role of self-constructs and gratitude in predicting changes in self-regulation

The results confirmed the significant prediction power of gratitude and self-constructs. Interestingly, SEs was significantly associated only to changes in EMO, whereas SEf changes in COG, and SELFREG. Gratitude positively predicted changes in EMO and BEH, and negatively changes in COG. The explained variances in all models ranged from 4 to 12% (Table 2).

Table 2. Predictors of changes in self-regulation

Predictors	Δ COG	Δ EMO	Δ BEH	Δ SELFREG
Gratitude	-0.22*	0.22*	0.18*	0.12
Self-esteem	-0.15	0.25**	0.13	0.15
Self-efficiency	0.23*	0.13	0.08	0.24*
Statistics for model	$F = 3.81^*$ $\text{Adj. } R^2 = 0.06$	$F = 6.96^{***}$ $\text{Adj. } R^2 = 0.12$	$F = 2.62^*$ $\text{Adj. } R^2 = 0.04$	$F = 5.69^{**}$ $\text{Adj. } R^2 = 0.10$

*** $p < 0.0001$; ** $p < 0.001$; * $p < 0.05$

Note: Standardized Beta coefficients are reported; Δ -difference: T1-T2; EMO – Emotional Regulation; COG – Cognitive Regulation; BEH – Behavioral Regulation; SELFREG – General Self-Regulation.

Source: Authors’ research.

Discussion

The current study aimed to test the effectiveness of Classroom Gratitude Intervention on adolescents’ self-regulation. The findings only partially confirmed our hypothesis, however, allowed for the identification of some boundary conditions around the potential benefits of practicing gratitude at school.

The impact of CGI on self-regulation among adolescents

The CGI intervention significantly changed students’ cognitive self-regulation; however, the overall effect was opposite than expected. These results are not supported by the past studies, that point to the positive effect of gratitude interventions on self-regulation (Boggio et al., 2020), however, confirmed the notion that gratitude manipulation may not enhance cognitive flexibility (Hartanto et al., 2020). In accordance, adolescence is a “turning point for self-regulation”, and the trajectory of this process during this period is an effect of both mental, social, and physical immaturity (Gajda et al., 2022). Gratitude-based interventions enhance genuine expression of all positive emotions and thus diminish focusing on suppressing feelings (because it increases positive affect and authenticity), thoughtfulness decision-making

(because it temporarily activates positive working memories and flexibility), or spontaneous reactions (because it uplifts neuronal activity responsible to behavioral inhibition) (Hazlett et al., 2021; Komase et al., 2021; Tomaszek, 2023). Noteworthy, some studies have found no significant changes in positive outcomes among children after gratitude interventions, despite subjective opinions of an increase in self-regulation (Khan, 2019). Hence, youth who frequently experience fluctuation in self-control may underestimate their ability to manage self-processes. Moreover, during adolescence restrictions in sharing publicly emotions are typical (Booker & Dunshmore, 2017), and self-disclosure is conditioned by various social factors e.g. friendship involvement, peer acceptance, gender, and classroom membership (von Salisch, 2018). Therefore, the failure of CGI intervention in improving self-regulation may be also an effect of low engagement in behavioral gratitude activities proposed for all classrooms. It is also possible that the implementation of CGI decreased self-regulation in terms of encouraging the expression of not only positive emotions but a genuine communication of all emotions, which results in lower self-managing of all emotionality, thoughts, and behaviors. Next, we did not control interpersonal vs. non-personal practicing gratitude on gratitude itself, which may be crucial for the effectiveness of such interventions (Berger et al., 2017). In contrast, to some extent, the results are in line with the past literature, that highlights gratitude interventions as a strategy for uplifting positive emotionality, which indicates lower cognitive monitoring of thoughts and reactions (Walker, 2016). Specifically, eliciting feelings of gratitude is recognized as a mindfulness technique, that makes people more focused on the gifts they receive, and appreciation of the moments. As such, by increasing gratitude individuals may temporarily not concentrate on their strategies to achieve desired long-term goals (Rosenzweig, 2013).

Self-constructs and the CGI effectiveness in increasing self-regulation

The effect of CGI varied depending on students' self-concepts. Specifically, we observed an increase in some self-regulation indicators among students with low self-esteem, and a decrease among students with medium self-esteem.

Youth with the lowest self-esteem experience a greater change in self-regulation. The results may be inferred from the broaden and build theory which states that positive emotions (i.e., gratitude) can expand individuals' flexibility by broadening individuals' momentary thought and behavior repertoire (Fredrickson, 2004b). Hence, gratitude indeed promotes positive outcomes and enduring social and psychological resources but primarily allows people to think and behave flexibly when required. As a matter of fact, recollecting and acknowledging all the positivity in human life not only initiates emotional responses to benefactors but also prolongs positive orientation even in the face of difficult circumstances (Rosenzweig, 2013). People with low self-esteem may thus not suppress their positive impulses due to believing that expressing appreciation brings positive consequences or presents more belief in themselves, which allows them to use their resources. It seems that CGI alleviates negative self-attributions, which, in turn, encourages individuals to start focusing on self-formulated goals, boldly expressing positive affect, and reciprocating all the good things they were gifted by positive behaviors. In contrast, the decrease in some aspects of self-regulation among youth with medium self-esteem may indicate that practicing a grateful attitude leads to reacting spontaneously and promotes emotional self-disclosure when it is adaptable or increases their sensitivity to what they perceive as ingratiation to others.

Self-constructs and gratitude as predictors of self-regulation

The findings confirmed a positive prediction power of gratitude on changes in EMO and BEH, whereas changes in COG were negatively related to GQ. These results are partially supported by past literature, e.g., Fatima et al. (2022); Li et al. (2023). Similarly to past gratitude-based interventions, our findings confirmed that practicing this emotion allows for better monitoring of own emotions, which according to Hazlett et al. (2021) is directly connected to decreasing amygdala reactivity, and thus creates space to reflect on one's own reactions. Consequently, it leads to better control and understanding of self and others' motives and needs. Interestingly, in our study self-efficiency

significantly predicted changes in COG, whereas self-esteem changes in EMO. The notion that self-concepts play a critical role in organizing past actions and in directing future behaviors is well documented in the psychological literature. According to some scholars, self- and social- systems co-regulate entire human psychological functioning (Collins, 1984). From this perspective, youth reactions that appear to be under control through self-reinforcement of a gratitude attitude can be caused by near or distant external, but positive contingencies. This is because gratitude activates an optimistic time perspective (Przepiórka & Soból-Kwapińska, 2021), which in turn strengthens a holistic view of self (focusing not only on failures but also on chances), and a formulation of realistic personal goals. According to Crocker et al. (2010), people, who are concerned about being a highly valuable person undermine the pursuit of long-term goals, however, by energizing self-regulation through a “warm” emotional system, which is not ego-involved self-regulation may be improved. In light of our results, the proposed CGI intervention may act as a fruitful way to reinforce self-regulation by activating a “warm” emotional system in safe conditions.

Limitations

Several limitations must be considered that may seed future research in gratitude science. During the gratitude intervention, we did not control some aspects that may biased results, e.g., participants’ momentary gratitude level, the engagements in gratitude activity proposed by teachers, the way of sharing gratitude in challenge task (private vs. public; stranger vs. relatives), the instructions provided by teachers and their engagement in the gratitude intervention). We also did not have control group. Next, the adolescents’ sample was relatively small and related to a specific developmental period, in which self-constructs are susceptible to fluctuation and influenced by external factors. This means that the observed regularities do not necessarily apply to other age groups, including late adolescence. We did not control respondents’ gender, although past studies confirmed that gender may be one of the factors influencing the effectiveness of gratitude-based interventions (Kashdan et al.,

2009). Finally, participants gauged their level of self-esteem and self-efficiency by rating themselves on a very short scale, which is probably less reliable than using longer measurements (i.e., Rosenberg Scale) or including more objective criteria (i.e., judgments from parents, classmates, and teachers). We also did not follow up with subjects to examine the long-term effects of this intervention, which is crucial for reliably monitoring its effectiveness.

Conclusion

Classroom-Gratitude Interventions are unquestionably promising ways of enhancing positive psychological outcomes, however, their effectiveness seems to be limited and dependent on an individual's characteristics, e.g., self-constructs. Taking into account that it may differently impact individuals with low, medium, and high self-concepts the implementation of it among youths must be carefully planned considering short-term and long-term goals. It also seems that simply encouraging people to experience and express gratitude is not beneficial for all groups and personal-centered orientation should be considered as a reasonable way of effectively using gratitude. A subsequent potential practical implication is directed to educational staff. Future interventions should consider developing a long-term program focused only on improving self-evaluations that start at early educational stages and continue to adolescence. This is especially important as prevention self-esteem programs are tailored to the specific needs of different target groups, with adolescence being the most risky developmental period for negative self-evaluations (Bos et al., 2006). Importantly, our main objective was to test the changes in self-regulation caused by gratitude intervention, however, teaching children and adolescents' skills to strengthen self-regulation also seems reasonable. This is particularly important considering a link between problems with self-controlling and various mental health issues (depression, self-harm behaviors, emotional distress). In regards, according to Wood, such prevention programs should be based on "adult modeling, verbal instruction, role-play and 'in-vivo' coaching, and the pace and focus of adult-child interactions" (Wyman et al., 2010, p. 2). Partially, our results bring some evidence

that positive emotional interventions may be more effective and beneficial if teachers and counselors implement prevention programs dedicated to positive self-concept and self-control before focusing on gratitude. Finally, more research is needed in this area to determine whether the desired changes are long-lasting or only temporary.

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