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To cite this article: Karla Lobos, Claudio Bustos, Fabiola Saez-Delgado, Rubia Cobo-Rendon & Carola Bruna (2022): Promoting ASC in the primary education classroom: The role of teacher training, International Journal of School & Educational Psychology, DOI: [10.1080/21683603.2022.2105997](https://doi.org/10.1080/21683603.2022.2105997)

To link to this article: <https://doi.org/10.1080/21683603.2022.2105997>

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 Published online: 10 Aug 2022.


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Promoting ASC in the primary education classroom: The role of teacher training

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ABSTRACT

The purpose of this research was to study the effect of the changes in the strategies to stimulate self-concept used by teachers, that received training, in the academic self-concept of its students. A quasi-experimental design with pre- and post-application measures was used. A total of 36 secondary school teachers and 814 students participated. The program consisted of four months of workshop sessions and accompaniment in the classroom. It was found that changes in the teaching strategies mediated the effect of the intervention on students' self-concept. In addition, the change in the students' type of self-concept depended on the change in the teachers' specific strategies. In conclusion, the training program designed for stimulating academic self-concept was effective in promoting strategies in teachers that increased student's self-concept. Thus, it can be concluded that the intervention is an approachable methodology to support the development of self-concept, potentially impacting students' academic success. The findings contribute to the design of future interventions in school contexts for the improvement of students' self-concept.

KEYWORDS

Self-concept; primary education; strategies; students; educational intervention; teachers

Introduction

Academic self-concept (ASC) refers to students' self-perception of their competence in conducting certain school activities and tasks (Hansen & Henderson, 2019; Marsh & Martin, 2011). Self-concepts are students' mental self-representations regarding their subjective beliefs about their own strengths and weaknesses in face of a given academic challenge (Trautwein & Möller, 2016).

ASC is widely accepted as a critical psychological construct that drives success in educational settings (Marsh et al., 2018). Because of its reciprocal relationship with achievement, ASC is considered one of the most important motivational constructs driving school learning processes, along with acting as a moderator of other desirable educational variables such as school adjustment ability, commitment to academic tasks, achievement motivation, and academic self-efficacy (Huang, 2011; Isiksal, 2010; O'Mara et al., 2006). In addition, ASC is considered crucial for students' educational trajectories, given that it affects educational aspirations and future educational options (Marsh & Nagengest, 2012; Miñano & Castejón, 2011; Von Keyserlingk et al., 2019).

The multidimensional nature of self-concept implies that certain aspects which are deeper and more nuclear, will be stable, while others which are context-dependent will be variable (Guido et al., 2011). It has been established that self-concept is formed from experiences and relationships with the environment, in which significant people play an important role (Marsh & Martin, 2011). In the school environment, the teacher has the greatest impact on the construction of the ASC (Barraza & Gutiérrez, 2011; Salum-Fares-Fares et al., 2011).

One aspect of ASC that has gained importance is classroom interactions (Baltasar et al., 2016; Lobos et al., 2015, 2019). In the classroom, teachers address student performance by making daily assessments and influencing their ASC development (Blegur, 2019; Chohan, 2018; Kumi-Yeboah et al., 2018; Wang & Neihart, 2015). When the teacher interacts in the classroom, he/she usually makes evaluative judgments of his/her students' performance in behaviors that are visible to him/her, such as the ability to develop an academic activity, the work procedures he/she uses, and class participation. These three dimensions of classroom

interaction are susceptible to being deliberately stimulated by the teacher, influencing student motivation and performance (Lobos et al., 2018, 2019).

Regarding how to stimulate ASC in the classroom, the teaching practices that have proven to be most effective are praise and instructional messages (Catalán, 2011; García, 2009; Marsh & Craven, 2006; Salum-Fares-Fares et al., 2011). Expressions of praise include encouraging messages for the development of skills, behaviors, or procedures shown by students (Catalán, 2011). Praise, if used frequently, is more effective in ASC improvement interventions (García, 2009; Marsh & Craven, 2006; Salum-Fares-Fares et al., 2011). On the other hand, instructional messages are indications about student's performance, which require detail and precision as opposed to encouragement, which may be less specific, emphasizing to the student what he/she did well, what he/she did wrong, and how to improve (Catalán, 2011).

The present study aims to determine if the use of praise and instructional messages by teachers, improved students' self-concept (Lobos et al., 2019). To do so, three different contexts in which teachers should address students with messages were established. These contexts consisted of detectable students conducts that were ideal to encourage them or to provide feedback regarding their performance:

Display of ability of performance of a particular academic task, such as dividing with three digits in math, measure lengths while solving a problem, interpreting literary texts or comparing literary work in terms of language.

Adequate work procedures, by paying attention to instructions and following them, or material organization.

Verbal participation, for example, by making remarks or asking questions to classmates and to the teacher (Marsh & Craven, 2006; Marsh & Martin, 2011; O'Mara et al., 2006).

A four-month teacher training program composed of three stages was designed and implemented (supplementary material in annex). The first outside the classroom, consisting of ten workshop sessions of 120 minutes each, with a frequency of two per week. The second, in the classroom, comprising six sessions of 90 minutes each of individual accompaniment focusing on the application of strategies by the teachers. The third consisted of two months of autonomous implementation. In terms of methodologies, for the workshop sessions, role playing, strategies of priming (Ruiz & Cuevas, 1999) and living modeling (Bandura, 1977) were used. On the other hand, feedback and living modeling were the main strategies for

classroom accompaniment. Once concluded, teachers were asked to employ autonomously the learned procedures for a period of two months, subsequently applying the posttest assessment.

Previous reports in primary and secondary education have shown that intervention programs that aims to improve students' ASC are more effective when they are implemented by the teachers themselves than by support professionals (Campbell et al., 2015; Desimone & Hill, 2017; Sutherland et al., 2018). From this point of view, the change in teaching behavior has been reported to be a mediator between teacher training interventions and changes in students' ASC (Bruhn et al., 2014; Hagermoser et al., 2012).

The study of teacher competence as a mediator in pedagogical interventions that aims to improve self-concept is poorly studied and reported, which can limit the effectivity of intervention programs (Bruhn et al., 2015; Hagermoser et al., 2012; Yeaton & Sechrest, 1981). In this context, if the teacher develops a successful learning of the strategies, he/she will conduct them according to planification and instruction, contributing to the fidelity of the treatment. Nevertheless, if learning is insufficient, poor implementation of the strategies or even the inclusion of unplanned procedures can occur, affecting the results of the intervention (MacKinnon, 2008).

In this study the use of strategies to promote academic self-concept included in the training program was expected (praise and instructional messages). In principle, the resulting change in the teachers' behavior should positively impact students' self-concept, as well as their academic performance, specifically assistance and grades. Despite the intervention could be adequately designed based on effective strategies according to literature, it could result in little to no impact if a low level of competence to promote self-concept (ability of task performance, adequate work procedures and/or verbal participation) was achieved.

Several metaanalysis have revealed a lack of measurement of teachers' self-concept promoting practices (Marsh & Martin, 2011; O'Mara et al., 2006). In this context, reports indicate that only the improvement of academic self-concept student is assessed, meanwhile the degree in which teachers stimulate is overlooked. As a result, little is known regarding their level of competence, even less from the perception of students, an important source of information since they are the ones experiencing teachers' behavioral changes (Lobos et al., 2018).

The objective of the present study was to study the influence of using ASC elicitation strategies by elementary school teachers in students' academic self-concept

after participation in a teacher competency training program, to provide evidence of aspects to promote in future training and intervention design.

The hypothesis of the study is that strategies to stimulate self-concept (SSS), used by teachers that received training, improve the academic self-concept (ASC).

This study contributes to the literature by providing new evidence to researchers who face the challenge of improving the ASC of school-level students.

Materials and methods

The present study used a quasi-experimental design, with experimental and control groups, considering pre- and posttest measurements.

Participants

The population consisted of teachers and students of third and fourth grade of primary education from public and vulnerable schools in the Province of Concepción, Chile, with more than 50% of students with high level of socio-economic vulnerability. High vulnerability corresponds to students at high risk of dropping out of school for socioeconomic reasons (Ñanculeo & Merino, 2016), and low academic results in national standardized tests (Agencia de Calidad de la Educación Gobierno de Chile, 2015).

The sample included 36 teachers, and 814 students from 17 schools. In the experimental group, 21 teachers and 443 students participated, while in the control group, 15 teachers and 376 students participated. The average age of the teachers was 45.3 years ($SD = 12.4$). Each course had an average of 22.8 students. The average age of the students was 9.11 years ($SD = 1.08$), 391 (50.38%) were female and 385 (49.61%) were male. Sampling was non-probabilistic, by convenience since access to the schools was through agreements between the municipalities and universities.

Schools were selected and assigned as control and experimental groups by local authorities, considering institutions with authorization to conduct research and no parallel participation in other programs as criteria. Complete courses were included for the study.

Instruments

The Academic Self-Concept Scale in Classroom Interaction (Lobos et al., 2015) was used, which consists of 22 items that measure the level of ASC perceived by the student in three areas: participation, procedure, and ability. Each item is answered using a Likert-type scale of six intervals, in which 1 corresponds to “never” and 6,

“always.” Lobos et al. (2015) studied its psychometric properties reporting high level of internal consistency in all subscales (Cronbach’s $\alpha > 0.8$), domain and convergent validity, and factorial invariance up to the strict level, adequate fit of the data to the theoretical model, and concurrent validity with the Academic School Self-Esteem Subscale (EAEA) of the Coopersmith Self-Esteem Inventory, validated for the Chilean population (Brinkmann et al., 1989). In this study, the internal consistency measured with omega for ability (pre = .87, post = .85), participation (pre = .86, post = .89), and procedure (pre = .87, post = .88) scales were adequate.

The Academic Self-Concept Stimulation Strategies report scale (Lobos et al., 2018) measures the level perceived by the students of the teacher’s application of pedagogical assessment practices, consisting of ASC stimulation strategies in the areas of participation, work procedure, and ability. Students must respond 16 statements regarding the teacher’s behavior in the classroom, using a Likert-type scale of six intervals, in which 1 is equivalent to “never” and 6 to “always.” The psychometric characteristics of the scale show adequate internal consistency and domain and dimensional validity, with an adequate level of model fit to the data, structural and temporal invariance, and evidence of concurrent validity. Specifically, the reliability of the differences between teachers based on the means of students’ judgments corresponding to the ICC (1, k) measure of Shrout and Fleiss (1979) is adequate for both ability (pre = .85, post = .91), participation (pre = .88, post = .92), and procedure (pre = .87, post = .90).

Procedures

The teachers participating in the study and their course groups were recruited through meetings with municipal education departments. An initial informative session was held in which the teachers indicated whether they decided to participate in the study by means of an informed consent form. Workshop sessions were performed at the campus of the University leading the research. Sessions were carried out during teachers’ working hours. On the other hand, classroom sessions were scheduled directly with the teachers.

The training lasted for four months. Once the coaching was finished, the participants were asked to apply the strategies learned in their own classrooms autonomously for a period of two months. During this period, there was no contact with the researchers.

Students’ pretest was applied before the teachers training program, while posttest was applied after two months of autonomous implementation. In both cases,

the application was performed at the schools during classes, in the absence of the teacher. The students and their parents declared their willingness to participate by signing a consent agreement applied at the time of the pretest application of the instruments. If they decide not to participate, they were subjected to the intervention. Nevertheless, no data was collected nor used in the analysis regarding these students. The research was approved by the ethics committee of the Faculty of Social Sciences of the University.

Data analysis

Due to missing data product of the absence of students in pre or posttests, multiple imputations were used with 20 imputed databases, using the mice library of R. Multiple imputations is one of the recommended methods to address missing data, with lower bias and error than other methods like listwise and pairwise deletion. Students' absence was attributed to non-pedagogical reasons, such as personal or external problems. In this context, the principal effect of missing data would be higher estimation error and a decreased power on statistical hypothesis tests.

For the analysis of the effect of the intervention on (1) teachers' ASC promoting skills perceived by the students, (2) students' ASC level, a multilevel model was used, specifically a mixed-effects regression model with a structure analogous to ANCOVA. The effect of the intervention on each of the dependent variables was analyzed, controlling for pretest values. Due to the hierarchical structure of the data, the effect of the teacher was controlled using an intercept-only model, considering the overall effect of the teacher as the intercept, and a differential effect in the experimental group as the slope.

A multiple mediation model was analyzed, corresponding to the existence of multiple variables that mediate the effect between the independent variable X and dependent variable Y. This type of analysis makes it possible to determine whether there is a general mediation effect of a set of variables, as well as to determine the extent to which a specific variable mediates the relationship X and Y, conditional on the presence of other variables. This reduces the risk of bias because of omitted variables in the model and estimates the relative magnitude of the mediation effect of a variable with respect to all the other mediating variables (Preacher & Hayes, 2008). Preacher and Hayes (2008) recommend analyzing multiple mediations in two parts: (a) studying the existence of a total spillover effect, corresponding to the aggregate effect of all variables and (b) testing for specific spillover effects. Both types of analyses were relevant to our study.

The analysis of the total indirect effect, which allows us to answer the hypothesis, tells us to what extent the intervention on teachers generates the expected changes in students; its relationship with the direct effect tells us to what extent students changed due to factors other than the focus of the intervention. On the other hand, the analysis of indirect effects provides us with information on which specific component of the intervention affected which variable.

As a statistical test of the indirect effects, we used the bootstrap confidence interval on the product of the regression coefficients of the model, which has no assumptions about the distribution of these coefficients (MacKinnon et al., 2002). Specifically, the bias-corrected bootstrap interval was used to obtain more accurate confidence intervals, which considered the asymmetric distribution of the product of coefficients (Mackinnon et al., 2004). Due to the presence of missing data, confidence intervals were calculated using the pooled MI method (Schomaker & Heumann, 2018).

Coefficients were calculated using an intercept-slope hierarchical linear model (HLM). The fixed effects model for the calculation of mediation was based on MacKinnon's (2008) two-time regression models: for teachers, the effect of the control vs. experimental group and the pretest value of the respective strategy were considered; for students, the fixed model considered the group effect, the pretest value of the specific self-concept type, as well as the pre- and posttest values of the teachers' fostering strategies of ability, procedure, and participation.

The mediation effect was calculated as the product of the effect of the experiment on teaching practice at posttest, with the effect of teaching practice on self-concept at posttest. For the perceived practices of teacher encouragement, the effect of the teacher was considered as the intercept, and as slopes the differential effect of the experimental group and a differential effect of the pretest value per teacher; similarly, in the self-concept measures, the effect of the teacher was considered as the intercept and the differential effect of the experimental group as the slope.

Results

The objective of the present study was to study the influence of using ASC elicitation strategies by elementary school teachers in students' academic self-concept after participation in a teacher competency training program. Our hypothesis is that strategies to stimulate self-concept (SSS), used by teachers that received training, improve the academic self-concept (ASC) of their students.

Table 1. SSS and ASC levels in the pre- and post-measurement, in the control and experimental groups, together with ANCOVA results in post.

	Experimental		Control		ANCOVA
	Pre	Post	Pre	Post	
Self-Concept Stimulation Strategies (SSS)					
Capacity	4.51 (1.36)	4.98 (1.11)	4.19 (1.54)	4.14 (1.44)	$F(1,4758.06) = 16.48, p < .001$
Participation	4.53 (1.31)	4.90 (1.16)	4.19 (1.47)	4.23 (1.43)	$F(1,2024.99) = 12.30, p < .001$
Procedure	4.85 (1.23)	5.08 (1.11)	4.54 (1.40)	4.54 (1.35)	$F(1,3193.52) = 10.90, p = .001$
Academic Self-Concept (ASC)					
Capacity	4.86 (1.05)	4.83 (0.92)	4.66 (1.08)	4.71 (1.02)	$F(1,640.97) = 0.53, p = .467$
Participation	4.44 (1.19)	4.48 (1.12)	4.20 (1.17)	4.23 (1.23)	$F(1,1746.59) = 2.86, p = .091$
Procedure	4.77 (1.07)	4.72 (1.04)	4.74 (1.06)	4.72 (1.01)	$F(1,3623.53) = 0.06, p = .811$

ANCOVA F-test results for differences between control and experimental groups, controlling for pretest values and differences between teachers, obtained using procedure D, for linear models with multiple imputation.

Table 1 shows the pre-and post-measurements of SSS and ASC in the control and experimental groups, together with the results of the ANCOVA test of differences in the post between the control and experimental groups, controlling for the pre values. There is a clear effect of the intervention on SSS, but no effect on ASC. When analyzing the assumptions of these regression models, the assumption of parallel slopes for the six analyses is met, as well as the linearity of the relationship between predicted and observed values.

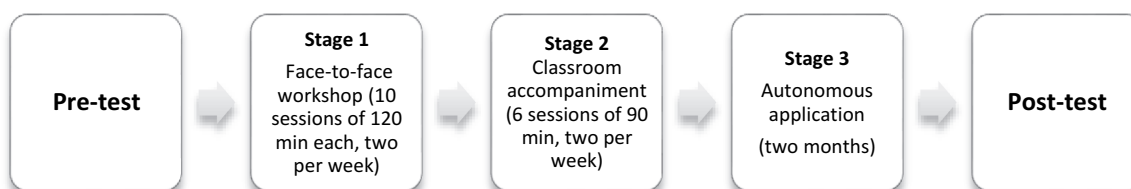
Using Levene's test, differences in the variance of the residuals were observed for the experimental and control groups, except for procedural SSS. The control group tended to always present a higher variance, between 31% for Capability SSS and 76% for Participation SSS. Residuals at the individual level present an approximately normal distribution, although with negative skewness between -0.45 and -0.9 , depending on the variable.

Figures 1–4 (all coefficients correspond to standardized values) show the path model for the mediation of the SSS in the relationship between the independent variable, belonging to the control or experimental group, and the students' ASC in ability, participation, and procedure, respectively. Coefficients $a1$ to $a3$ represent the standardized difference between the control and experimental groups in each teaching strategy in the posttest. Coefficients $b11$ to $b13$ represent the beta coefficients of the multiple regression of the teaching strategies in Ability on self-concept at the posttest, indicating how many standard deviations each type of self-concept

increases or decreases when modifying by one standard deviation, the strategy of fostering ability, controlling for the levels of the respective self-concept and the three types of SSS at the pretest. Coefficients $b21$ to $b23$ represent, analogously, the beta coefficients of the multiple regression of participation promotion, and coefficients $b31$ to $b33$ represent the beta coefficients of the procedure promotion.

When analyzing the total effect of the intervention on SSS capacity, that is, the sum of the indirect effect that considers changes in SSS attributable to the intervention, as well as the direct effect that considers changes that depend on the intervention, but not on changes in SSS, we can see that the respective coefficient is not significant, $c1 = 0.073$, 95% CI = $[-0.185, 0.326]$, $p = .847$. However, the total indirect effect mediated by teaching strategies, which is calculated by adding the three mediation effects of SSS on the relationship between the intervention and ASC of Ability, $a1b11 + a2b21 + a3b31 = .198$, 95% CI = $[0.090, 0.361]$ is significant. If we observe that the direct effect of the intervention is negative, although not significant, $c1' = -0.125$, 95% CI = $[-0.374, 0.118]$, $p = .387$, the absence of total effect can be explained by the increase in variance associated with this direct effect. When analyzing the specific indirect effects, only the mediation effect of the capacity-building strategies is significant, $a1b11 = 0.102$, 95% CI = $[0.020, 0.249]$.

In the mediation analysis of ASC participation, it can be observed that the total effect of the intervention is not significant, $c2 = 0.194$, 95% CI = $[-0.094, 0.461]$,

**Figure 1.** Intervention stages.

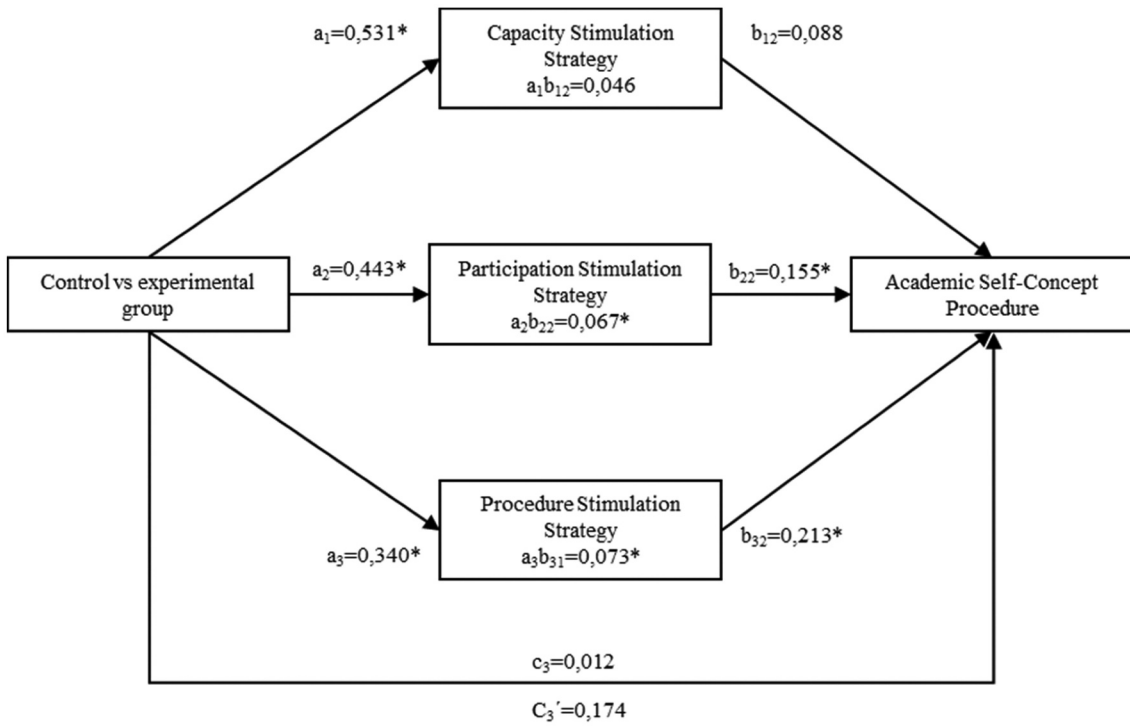


Figure 2. SSS mediation model of the relationship between treatment effect and ASC of capability.

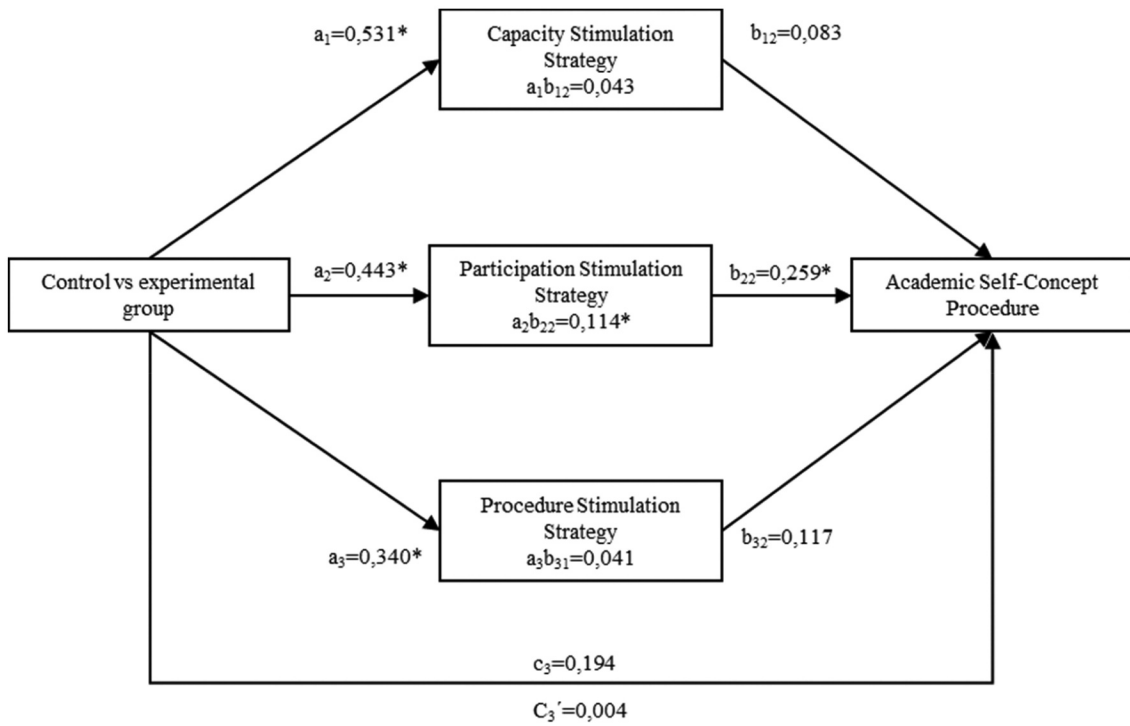


Figure 3. SSS mediation model of the relationship between the treatment effect and the participation ASC.

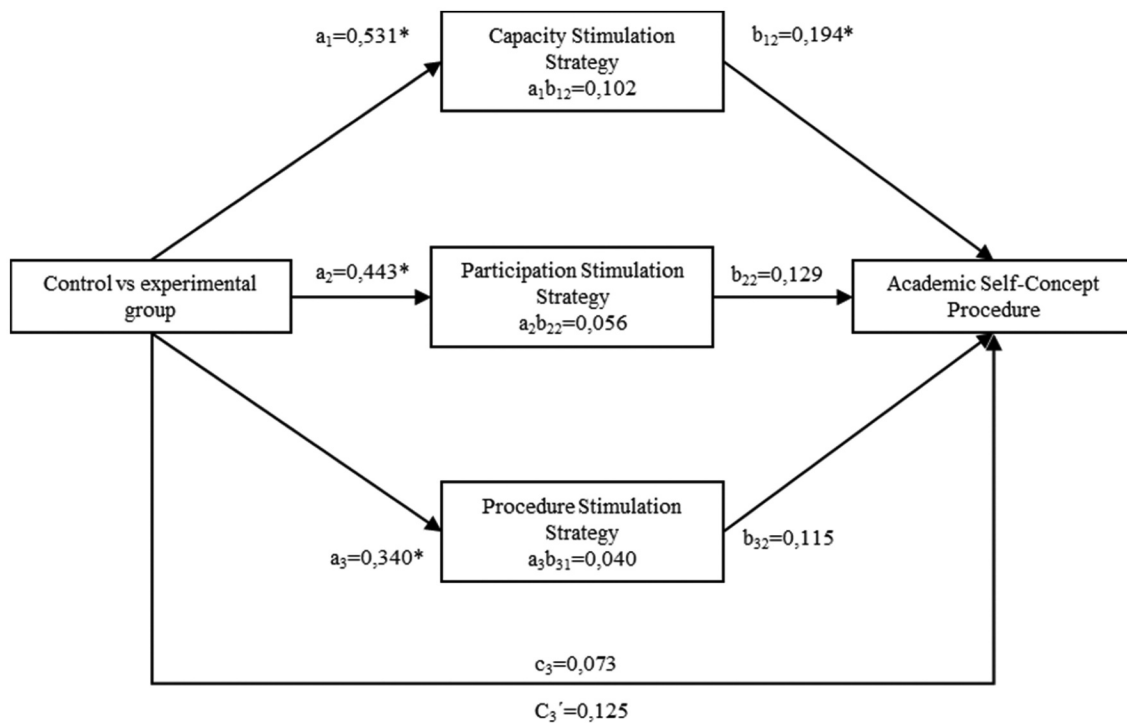


Figure 4. SSS mediation model of the relationship between treatment effect and procedural ASC.

$p = .075$, but the total indirect effect mediated by the teaching strategies was significant, $a_1b_{12} + a_2b_{22} + a_3b_{32} = 0.197$, 95% CI = [0.086, 0.347]. The direct effect turns out to be close to zero and not significant, $c_3' = -0.004$, 95% CI = [-0.252, 0.228], $p = .936$. When analyzing the specific indirect effects, only the mediation effect of the strategies to encourage participation is significant, $a_2b_{21} = 0.114$, 95% CI = [0.038, 0.236].

When analyzing the mediation model for the self-concept in Procedure, we can observe a similar pattern to that of ASC ability. Regarding the total effect of the intervention on self-concept in Procedure, it was not significant, $c_3 = 0.012$, 95% CI = [-0.240, 0.261], $p = .997$. The total indirect effect mediated by teaching strategies, $a_1b_{13} + a_2b_{23} + a_3b_{33} = 0.186$, 95% CI = [0.080, 0.331], was significant. The coefficient of the direct effect has a negative sign and almost the same intensity as the indirect effect, $c_3' = -0.174$, 95% CI = [-0.396, 0.043], $p = .162$, which explains why the total effect is practically zero. When analyzing the specific indirect effects, they are both significant in the mediation effect of the strategies to encourage participation, $a_2b_{23} = 0.067$, 95% CI = [0.010, 0.169], and of the procedure, $a_3b_{33} = 0.073$, 95% CI = [0.017, 0.167].

Discussion and conclusions

The objective of the present study was to study the role of ASC elicitation strategies by elementary school teachers in the relationship between participation in a teacher competency training program and improvement in students' academic self-concept.

The main finding was that changes in teaching strategies for ASC stimulation mediated the effect of the intervention on students' ASC, thus confirming hypothesis of the study based on the literature indicating that a determinant factor in the impact of student change is change in the teacher (Bruhn et al., 2014; Hagermoser et al., 2012). In line with these findings are the conclusions of the studies by Desimone and Hill (2017), Sutherland et al. (2018), and Schütze et al. (2017), in which they report that participating in the experimental group increases the teachers' ability to implement strategies and these changes in the teacher lead to changes in the students. This further explains the results of a study where it was shown that teacher references perceived by students are positively related to their ASC (Lohbeck & Philipp, 2020).

It is important to note that although we did not observe a significant total effect of the intervention on the students' ASC, it is possible to detect a total

mediation effect in the general ASC, as well as in each of the specific ASCs. Although this appears to be contradictory, it is not if we consider that the total effect considers the effect of group membership not dependent on teacher change. If we consider that mediation is significant, it can be hypothesized that the context of those courses that belonged to the control and experimental groups was different. Specifically, the experimental group should have experienced a more negative evolution of ASC than the students of the control group, but since this tendency was compensated by the teaching action, a positive total effect was generated, but smaller than that expected without the previous differences.

When analyzing the partial mediation models, it can be observed that for each type of ASC, all strategies influence its development, but those that are specific have a greater effect. All strategies for fostering ASC consider the use of pedagogical valuing practices, which highlight students' skills and provide feedback using praise and instructional messages (Deci & Ryan, 2013; Doménech & Gómez, 2011; Olson & Wyett, 2000; Santana & Feliciano, 2011). Praise and messages focus on what is positive about the student's performance rather than what he or she is not capable of achieving. These instructional messages have been proven to mediate improvement in student performance (Lobos et al., 2019; Wollenschläger et al., 2016) and to favor motivational processes of increased academic engagement (Lobos et al., 2019). Thus, different strategies are expected to foster, in one way or another, all dimensions of ASC.

However, as each strategy addresses facets specific of student performance in the classroom, its effect on the ASC also differentiated. For example, strategies to promote the ASC of participation have a greater influence on the ASC of participation than on the ASC of work skills and procedures. This is consistent with studies that measure changes in self-concept because of interventions, which indicate that the more specific the facet addressed, the greater the changes in self-concept dimensions than in general measures of this construct (Anuel et al., 2012; Esnaola et al., 2008; Galugu & Palopo, 2019; Marsh & Martin, 2011).

In conclusion, measuring the mediation effect of the change in teaching behaviors resulting from the intervention program allows us to ensure that the program works as expected (Bruhn et al., 2015; Schulte et al., 2009). In addition, this study shows that the development of student ASC in all its dimensions requires various fostering strategies on the part of the teacher. Each of the specific types of student ASC (ability,

participation, and procedural) are more strongly influenced by the fostering strategy of the same type than by the other two types of strategies. Therefore, if the intervention succeeds in making the teacher more skilled in a specific strategy, the development of ASC will be greater in that area.

The main limitation of this study is its quasi-experimental design. Although the statistical control of prior differences allows us to capture the effect of the intervention on the teacher, the total effect of the intervention on the students' self-concept was not significant. Although the training program contemplated sessions to verify the implementation of the strategies by the teachers, this verification process performed by the instructors was not analyzed in the present study.

Since group and experimental groups were not randomly assigned, even though school administrators were instructed to assign groups in a balanced manner, it is possible that their decisions were not devoid of bias. Data indicated previous differences in self-concept promotion, as well as students' self-concept, with lower differences in the control group, which suggest that this group of teachers were in a disadvantage condition. Therefore, further research would require an experimental design with randomization of the groups to ensure equivalence. In addition, the incorporation of a more direct qualitative measure, such as observation of the teacher in the classroom, with a rubric, by a trained third party, would help to better understand teacher performance and practices regarding ASC strategies.

As a future line of research, it is necessary to determine the optimal training procedure required by a teacher to foster students' self-concept adequately. This implies defining both the time of peer training as well as the time and frequency of classroom accompaniment, for teachers to master the strategies. Furthermore, as we do not intend to explain the effectiveness of interventions on student outcomes exclusively from whether teacher training was effective or not, we propose conducting future research on related areas to complement the research with other variables that help understand teacher effectiveness on student outcomes, such as students' skills, differences in their learning strategies, and parental commitment, among others.

Considering the importance of motivational cognitive aspects in the teaching-Lang learning process. The findings of this study are valuable for the design of future interventions in school contexts for promoting improvement of students' ASC (Mato-Vázquez et al., 2017). In addition, a practical implication of this study

is that it encourages teachers to promote the development of ASC in interactions with their students in the dynamics of teaching and learning in the classroom (Lohbeck & Philipp, 2020).

Disclosure statement

No potential conflict of interest was reported by the author(s).

Funding

This work was supported by the FONDECYT 11221355 "Impacto de una aplicación web de Autorregulación del Aprendizaje integrada al aula virtual en el Aprendizaje Autorregulado, el Compromiso y los Resultados Educativos de estudiantes universitarios".

Notes on contributors

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Data availability statement

The data is availability in contact with the mail author.

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