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**Special Issue**: Teaching and learning in education: innovation and transfer

# Application of a program to improve growth mindset, eudaimonic well-being and multidimensional well-being within the framework of teacher professional development

## Aplicación de un programa para la mejora de la mentalidad de crecimiento, bienestar eudaimónico y bienestar multidimensional en el marco del desarrollo profesional docente

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**Abstract**

There is a burgeoning interest in enhancing teachers' professional development, as well as their wellbeing and personal resources. This study aimed to assess the effectiveness of a multicomponent intervention grounded in positive psychology to boost growth mindset, eudaimonic wellbeing, and multidimensional wellbeing and reinforce competencies associated with professional teacher training. The study enrolled 92 participants, separated into an experimental group receiving "FODI" intervention and a control group (62% experimental & 38% control), with a mean age of 44.7 (*SD* = 8.6) comprising 75 women and 17 men. The data was collected using a multiple-choice questionnaire assessing the study variables. The analysis of covariance indicates that the intervention significantly enhanced the scores of general and self-growth mindset, eudaimonic wellbeing, PERMA (including self-perceived health), and teacher training in participants compared to the control group. These improvements were statistically significant at $p < .05$. Interventions based on positive psychology may serve as practical tools for enhancing educational quality through teacher training, personal growth, and professional development.

**Keywords*:*** Eudaimonic wellbeing; perma wellbeing; growth mindset; teacher training and development.

**Resumen**

En la actualidad, existe un creciente interés en promover el desarrollo profesional docente, así como el bienestar y sus recursos personales. El objetivo de esta investigación fue evaluar la efectividad de una intervención multicomponente basada en psicología positiva para mejorar la mentalidad de crecimiento, bienestar eudaimónico y bienestar multidimensional, así como fortalecer competencias relacionadas a la formación docente profesional. La muestra estuvo conformada por 92 participantes con un grupo experimental, el cual recibió la intervención denominada "FODI" y un grupo control (62% grupo experimental y 38% grupo control) con una edad media de 44.7 (*SD* = 8.6) siendo 75 mujeres y 17 hombres. Las variables fueron evaluadas con un cuestionario de respuestas múltiples con las variables objeto de estudio. Los resultados del análisis de covarianza sugieren que la intervención mejoró eficazmente en $p < .05$, las puntuaciones de la mentalidad de crecimiento tanto general como propia, bienestar eudaimónico, PERMA con su medida de salud autopercibida y formación docente en participantes en comparación con el grupo control. Se concluye que intervenciones basadas en elementos de la psicología positiva pueden ser dispositivos para la mejora de la calidad educativa haciendo énfasis en la formación, crecimiento personal y desarrollo profesional docente.

**Palabras clave:** Bienestar eudaimónico; bienestar perma; mentalidad de crecimiento; formación y desarrollo docente

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## Introduction

Educational quality has been a goal pursued by educational systems that is complex and multifactorial. One of the critical aspects of educational quality is initial and professional teacher training (Rodrigo-Moriche et al., 2022), without denying that there are other factors, such as those related to recognition, remuneration, and occupational health policies, that include emotional factors and wellbeing. Therefore, teacher professional development is one of the aspects of the problem, and there needs to be an attempt to simplify the situation (Escudero, 2020). In this sense, teaching professional development includes strengthening conditions, resources, and spaces that promote permanence in the trajectory of the teaching career. The literature indicates that one of these aspects is continuous training, satisfaction with teaching work, an emotional bond with students, and even non-economic recognitions such as those related to quality of life or teacher wellbeing (Vaillant, 2014); the latter is a pretty complex construct to address in the teaching community due to the variety of indicators in which is associated, configuring teacher wellbeing as multidimensional, contextual and interactional with implications of intra- and interpersonal resources (Dávila et al., 2023).

Studies have highlighted the importance of teachers' resources to explain satisfaction, commitment, wellbeing, and even the intention to abandon their professional career (Mérida-López et al., 2022; Wang et al., 2023) in similarity to the theory of job demands and resources used to explain wellbeing and resilience in teachers (Granziera et al., 2021). The National Institute of Educational Evaluation in Uruguay (INEEd, 2020) conducted a national study of teacher occupational health. In this model, teacher wellbeing approximates the experience or satisfaction they report with their work, evaluated with burnout scales and absence of symptoms of psychological distress; the model refers to personal resources with a strong emphasis on cognitive constructs, organizational resources such as a climate of support, trust, and autonomy, among other factors such as contextual factors, lifestyle, organizational demands, health policies, and others.

Similarly, the INEEd (2019; 2023) included the growth mindset within the competencies related to self-regulation and motivation within the framework of socio-emotional skills, understood as a set of cognitive, social, and emotional tools that allow adaptation, personal growth, and construction of wellbeing; Their follow-up studies point out the importance of the teacher-student bond among the school climate factors that have the most significant relationship with performance in the areas of reading and mathematics. They also explain the importance of developing a growth mindset in teachers to improve their students' learning expectations, promoting educational practices that stimulate effort and malleability of achievements. A call congruent with the principles that support teacher professional development are teachers' beliefs regarding knowledge and ways of learning since this would impact the way of planning and executing educational management (Vaillant & Marcelo, 2015).

Multicomponent programs based on positive psychology have been documented and defined as psychological interventions to promote feelings, behaviors, and thoughts associated with wellbeing. They are understood in their design and execution as multicomponent because they include several themes, strategies, and resources with both hedonic and eudaimonic theoretical bases, with empirical evidence that they strengthen wellbeing and, by secondary mechanism, reduce discomfort (Hendriks et al., 2020). With a scientific approach based on character strengths, the PERMA wellbeing model, and different theoretical contributions such as positive emotions, growth mindset, and others.

Reviews of studies have been prepared following different experimental design modalities with randomized quasi-experimental groups to evaluate the effectiveness of these programs in responding to the challenges of accompanying teachers in their related professional development. Also, interventions promoting personal resources, psychological capital, and competencies related to socio-emotional education and wellbeing (Dreer, 2023; Falecki & Mann, 2021; García-Álvarez et al., 2021; Vo & Allen, 2022). Previous research has shown how multicomponent interventions based on some elements of positive psychology have reported effectiveness in improving teacher wellbeing (Datu et al., 2023; García-Álvarez et al., 2020; García-Álvarez & Soler, 2021; Pozo-Rico et al., 2023), as well as different protective factors such as gratitude, positivity, commitment, strengths, purpose, humor, relationships, and resilience (Chan, 2010; Datu et al., 2022; Datu et al., 2023; Izquierdo et al., 2022; Lee et al., 2023),

a decrease in risk factors such as emotional distress and stress has also been reported (Dreer, 2020; Dreer & Gouasé, 2022; Izquierdo et al., 2022; Pozo-Rico et al., 2020).

Likewise, multicomponent psychological interventions developed with elements of positive psychology have reported effectiveness in improving growth mindset in teachers (Seaton, 2018; Shoshani, 2021) also promoting teacher professional development through strengthening strategies and dynamics for educational management (García-Álvarez et al., 2023; Pozo-Rico et al., 2020) or the improvement of some aspects in students related to wellbeing and personal growth in university students (Arteaga-Checa et al., 2022). In the general adult population, has been reported the effectiveness of multicomponent psychological interventions based on positive psychology themes with effects on hedonic, eudaimonic, and social wellbeing (Gorbeña et al., 2021; Kubzansky, 2023), as well as other improvements in a growth mindset, with multicomponent cognitive-behavioral interventions (Parada & Verlhiac, 2022; Yeager et al., 2022). Previous studies demonstrated that a growth mindset has implications for correlates of professional career development (Han & Stieha, 2020) and could lead to wellbeing, engagement, and teaching skills (Nalipay et al., 2022; Zeng et al., 2019).

Yeager et al.'s (2016; 2022) research has verified how teachers' growth mindset beliefs influence student learning results. It is necessary to provide scientific evidence about what works in professional teacher training programs because, as Popova et al. (2022), even in developed countries with high incomes, there is little documentation of the impact of these programs under quasi-experimental methodologies and much less with a control group (Dreer & Gouasé, 2022).

The objective of this research was to evaluate the effectiveness of a multicomponent intervention based on positive psychology to improve growth mindset, eudaimonic wellbeing, and multidimensional wellbeing (PERMA), as well as strengthen competencies related to professional teacher training carried out in a sample of principals and educational leader teachers. The scientific evidence justifies the present study to promote personal resources such as wellbeing and growth mindset as protective mechanisms for teacher retention. The hypothesis was that the multicomponent FODI program (Training in Character Education for Educational Directors and Leaders) would improve growth mindset, eudaimonic wellbeing, multidimensional wellbeing (PERMA), and competencies related to professional teacher training.

## Method

### Study Design

The research was quantitative, with longitudinal methodology and quasi-experimental design with pre- and post-intervention measures. Therefore, participants were not randomly assigned to the experimental and control groups and were treated as non-equivalent (Ato et al., 2013).

### Participants

The sample comprised 92 practicing teachers in management roles at educational centers or educational leaders from 12 Eastern Republic of Uruguay departments, 75 (81.5%) women and 17 (18.5%) men. Age ranged from 27 to 66 years, with a mean of 44.7±8.6 (CV=19.2%). Regarding the final assignment, 57 (62.0%) were in the experimental group, and 35 (38.0%) were in the control group. The sample was from a pre-existing natural teacher group. The experimental group comprised directors interested in training in the area and a representative from their educational center.

In contrast, the control group comprised other teaching directors who voluntarily participated. See Table 1 to appreciate the sociodemographic characteristics of the sample. There were no statistically significant differences in the constructs related to gender, experience, and teaching qualification. The inclusion criteria were being an active teacher at initial, primary, and secondary education levels, with management functions of educational centers either as a principal or belonging to the management team, for example, teaching coordinator, in addition to having university studies in educational management, therefore, the exclusion criterion corresponded to being teaching staff only with classroom functions.

**Table 1**
*Sample characteristics (n = 92)*

| | | Control | Experimental | Total |
|---|---|---|---|---|
| | | **35 (38%)** | **57 (62%)** | **92 (100%)** |
| Gender | Males | 46 (50.0%) | 29 (31.5%) | 75 (81.5%) |
| | Females | 11 (12.0%) | 6 (6.5%) | 17 (18.5%) |
| Qualifications | Master | 19 (20.7%) | 12 (13.0%) | 31 (33.7%) |
| | Specialist | 30 (32.6%) | 14 (15.2%) | 44 (47.8%) |
| | Bachelor | 4 (4.3%) | 2 (2.2%) | 6 (6.5%) |
| | PhD | 1 (1.1%) | 2 (2.2%) | 3 (3.3%) |
| | Technical | 3 (3.3%) | 5 (5.4%) | 8 (8.7%) |
| Experience | Less than 5 years | 2 (2.2%) | 3 (3.3%) | 5 (5.4%) |
| | Between 5 and 10 years | 6 (6.5%) | 7 (7.6%) | 13 (14.1%) |
| | From 10 to 15 years | 10 (10.9%) | 7 (7.6%) | 17 (18.5%) |
| | From 16 to 26 years | 39 (42.4%) | 18 (19.6%) | 57 (62.0%) |

*Nota. n* = sample

## Instruments

The Psychological Wellbeing Scale for Adults (BIEPS-A), developed by Casullo (2002) based on Ryff's (1989) theory of multidimensional wellbeing, evaluates the dimensions of projects, autonomy, bonds, control, and acceptance. It consists of 13 items with three response options, an example is: "I am quite satisfied with the way I am." The instrument's psychometric properties are adequate and evaluated in research conducted by the author, with evidence of adequate validity and reliability (Casullo, 2002). This study measured reliability values using Cronbach's alpha α = .75 and α = .75 in the pre- and post-measurement.

The PERMA-Profiler is a scale developed by Butler and Kern (2016) that evaluates wellbeing based on Seligman's (2011) PERMA theory: Positive Emotions (P), Commitment (E), Relationships (R), Sense of Life (M), and Achievement (A). Additionally, it includes three contrast variables expressed as Negative Emotions (N), Loneliness (L), and Self-Perceived Health (H). The questionnaire consists of 23 self-report items on a Likert-type scale ranging from 0 to 10 points. An example of one of its items is the following: "In general, to what extent do you feel that what you do in your life is valuable and worthwhile?". The psychometric properties are adequate; satisfactory evidence supports its reliability and validity. The present study considered the total wellbeing score and the self-perceived health control measure. The reliability measure was adequate, with α = .83 and α = .84 pre- and post-measurements.

Dweck (2000) originally proposed the eight-item scale for assessing general growth mindset, the Implicit Theories of Intelligence Scale. It consists of four incremental items and four entity theory items, which measure the person's general perception of the inability to change intelligence rather than the possibility of changing it. An example of these items is: "People can always substantially change their level of intelligence." The psychometric properties of this scale were previously verified (De Castella & Byrne, 2015; Dweck, 2000; Dweck et al., 1995a, 1995b). The present study's reliability measure was for pre α = .71 and post α = .71. To assess self-perceptions of intelligence, that is, growth mindset, De Castella and Byrne (2015) adapted the scale as mentioned above, trying to maintain the

central idea of the instrument. To do this, they changed the wording of the items to reflect an individual's stance on the belief that intelligence is fixed or malleable; for example, "I think mistakes help me learn." its authors reported adequate internal consistency. The pre-post reliability measures for this study were α = .73 and α = .73. Both Likert scales had four response options

The teacher training scale, designed specifically for the projects by Jóvenes Fuertes Uruguay Civil Association, was used within the teacher professional development framework. It consists of eight Likert-type items with four response options. The items belong to two categories: teaching attitude towards promoting mental health and wellbeing and teaching coordination and educational resource management in positive psychology applied to education. For example, "I think the educational center should establish campaigns focused on promoting mental health." The scale shows adequate content validity; the experts found it clear, relevant, systematized, and theoretically adequate. Also, the confirmatory factor analysis found convergent and discriminant validity with satisfactory results. In the present study, the reliability in the pre and post-measurements was estimated, respectively, α = .80 and α = .80, being consistent with the original study (García-Álvarez et al., 2023).

## Procedure

In 2022, the *Jóvenes Fuertes Uruguay* Civil Association, together with the financing entity Reaching U, carried out the second edition of a program which had the objective of training educational leaders capable of improving the quality of education and addressing the challenges of the educational system. This new edition was in a blended format from April to October. See Table 2, which describes two sessions as examples for space reasons. In order to generate lasting changes and sustain the project in the future, two instances of monitoring and support for teachers are carried out in the implementation of their projects the following academic year (in 2023) to manage a consolidated teaching-learning community. Annex 1 describes the intervention according to the TIDieR indicators.

**Table 2**

*Description of modules, objectives, contents, and activities*

| Modules | Objectives | Contents | Activities |
|---|---|---|---|
| Assertive communication | Know the characteristics of human communication, improving everyday relationships. | Assertiveness, communication models, significant interpersonal relationships, and attachment. | Identify communication models in the educational center. Develop assertive communication guidelines. |
| Wellbeing | Know the models of wellbeing to enhance it in life and educational centers. | Wellbeing models emphasize multidimensional models, such as eudaimonic and PERMA. | Delve into each element of wellbeing, planning actions to promote it personally and at the educational center. |

The ethical guidelines of the APA and the Declaration of Helsinki guided the procedure in this research. It was approved by the ethics committee of Jóvenes Fuertes Uruguay (220307/Mazo 2022) with the informed consent of the participants. Pre- and post-measurements to evaluate possible changes in the variables after the intervention, both in the experimental and control groups. It is worth mentioning that the latter did not participate in any sessions of the intervention program. The coordinator applied an online form for sociodemographic information data and psychometric scales before the beginning of April and after the end of November (https://forms.gle/EL1sMTK3yAh2s9Ty8). The educational coordinator of the program carried out the data collection task, having previously explained the ethical aspects and obtained informed consent from the participants.

## Statistical Analysis

Comparisons of constructs at baseline based on group assignment, gender, experience, and grade were analyzed with the Student's t-test for independent samples and one-way analysis of variance (one-way ANOVA), verifying the normal distribution of the data with the result in the Kolmogorov Smirnov test with Lilliefors correction, also the equality of variances with verified through Levene, in addition

to the reliability with Cronbach's Alpha. We used analysis of covariance (ANCOVA) to analyze the effectiveness of the intervention. In this case, the dependent variables were the posttest scores, the between-subjects variable was the assignment group, and the covariate was the observed scores at baseline. We verified the parametric assumptions of the procedures without finding relevant inconsistencies. We evaluated the effect size with the partial eta-squared coefficient, interpreted as small, medium, or large for cut-off points of 0.01, 0.06, and 0.14, respectively (Iacobucci et al., 2023). We use the significance of the results at levels less than 0.05.

## Results

### Analysis of the Pre-test of the Participants

The constructs before the intervention are presented in Table 3 to assess whether the groups were initially homogeneous. We found significant differences in all dependent variables except Wellbeing (BIEPS-A). It is essential to mention that the initial scores of the experimental group were significantly higher than those of the control group. However, this fact does not affect the subsequent results since covariance analysis is an appropriate statistical technique to process information. No statistically significant differences were found based on sex, experience, and teaching qualification.

**Table 3**

*Constructs of interest at the beginning of the study*

| Group | Casullo's Wellbeing (BIEPS–A) | | PERMA's Wellbeing (PERMA–P) | | Self–Perceived Health (PERMA–P) | | Implicit Theories of Intelligence (ITIS–G) | | Implicit Theories of Intelligence (ITIS–ST) | | Teaching Training (TTS) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *M* | *SD* | *M* | *SD* | *M* | *SD* | *M* | *SD* | *M* | *SD* | *M* | *SD* |
| Experimental | 35.3a | 3.4 | 8.4a | 1.0 | 7.9a | 1.6 | 21.0a | 2.2 | 22.3a | 2.3 | 28.0a | 2.7 |
| Control | 35.7a | 3.1 | 7.8b | 0.8 | 7.1b | 2.1 | 19.3b | 1.7 | 20.4b | 1.2 | 26.5b | 3.3 |

Note: *M* = mean; *SD* = standard deviation. Means with the same subscript are not statistically different at the Bonferroni-corrected level of .05.

### Analysis of Intervention Results

Table 4 shows the results after the intervention. The analysis of covariance (ANCOVA) suggests that the program effectively improved the evaluations of the scales, an analysis carried out with the evaluations after the intervention. Note that the means reported by teachers assigned to the experimental group were significantly higher than those of the control group, even after considering baseline differences. Note that the effect sizes were moderate in all cases, except for PERMA wellbeing and teacher training, where we found a significant effect.

Table 4

*Differences between groups in construct scores during post-test, after controlling for differences at baseline.*

| **Constructs or independent variables (scales)** | **Experimental** | | **Control** | | | | **Partial $\eta^2$** | **Effect Size** |
|---|---|---|---|---|---|---|---|---|
| | *M* | *SD* | *M* | *SD* | *t* | p | | |
| Casullo's Well–Being (BIEPS–A) | 36.8 | 0.6 | 35.6 | 0.7 | 2.3 | .029* | 0.109 | Medium |
| PERMA's Well–Being (PERMA–P) | 9.0 | 0.2 | 8.1 | 0.3 | 4.9 | .001** | 0.361 | Large |
| Self–Perceived Health (PERMA–P) | 8.7 | 0.3 | 7.9 | 0.4 | 2.4 | .021* | 0.120 | Medium |
| Implicit Theories of Intelligence (ITIS–G) | 22.8 | 0.8 | 20.9 | 1.0 | 2.5 | .018* | 0.125 | Medium |
| Implicit Theories of Intelligence (ITIS–ST) | 22.8 | 0.7 | 21.1 | 0.9 | 2.3 | .029* | 0.109 | Medium |
| Teaching Training (TTS) | 30.1 | 0.8 | 27.5 | 0.9 | 3.7 | .001** | 0.246 | Large |

Note: *M* = mean; *SD* = standard deviation; TE = effect size; t = test statistic. Adjusted means are shown after controlling baseline differences. The p-value and effect size are presented in three decimal places to increase the precision of the results.

## Discussion

The objective of the present study was to verify the effects of a program called FODI on the improvement of growth mindset, eudaimonic wellbeing, and multidimensional wellbeing, along with the improvement of competencies related to professional teacher training.

Firstly, considering the central hypothesis of this research, it is confirmed that the multicomponent FODI program affected the improvement of growth mindset, eudaimonic wellbeing, multidimensional wellbeing (PERMA), and the competencies related to professional teacher training of the sample of the experimental group. It is worth mentioning that the participant's control group were not exposed to any of the program sessions, there were no direct actions on it, it is necessary to consider the internal validity factors in these research designs as a limitation of the present study. However, the results show a statistically significant increase in the dependent variables in the experimental group compared to the control group. We interpreted that the sample of program participants increased the ability to build their eudaimonic wellbeing in control or acceptance, autonomy, bonds, and projects (Ryff, 1989; Casullo, 2002). Similarly, PERMA was strengthened, a multidimensional construct of wellbeing with hedonic elements such as positive emotions and more meaningful elements such as commitment, relationships, meaning in life, and achievements, in addition to the improvement of self-perception of their health (Butler & Kern, 2016; Seligman, 2011). Therefore, we could state that the intervention was effective in improving wellbeing either in dimensions closely associated with satisfaction or frequency of emotions or elements associated with flourishing, a finding consistent with the literature reported in other multicomponent interventions based on positive psychology both in teachers and in the general population (Datu et al., 2023; García-Álvarez et al., 2020; García-Álvarez & Soler, 2021; Gorbeña et al., 2021; Kubzansky, 2023; Pozo-Rico et al., 2023), this is an exciting aspect to continue exploring, due to the relevance of teacher well-being which explains the permanence, quality or abandonment of the profession (Granziera et al., 2021; Mérida-López et al., 2022; Wang et al., 2023).

Likewise, the intervention was effective in improving beliefs about the malleability of intelligence, both one's own and that of others (De Castella & Byrne, 2015; Dweck, 2000; Dweck et al., 1995a, 1995b), findings consistent with other studies of multicomponent psychological intervention in teachers and the general population (Parada & Verlhiac, 2022; Seaton, 2018; Shoshani, 2021; Yeager et al., 2022). These are relevant findings due to the implications of beliefs on the professional development and personal resources of teachers (Han & Stieha, 2020; Nalipay et al., 2022; Vaillant & Marcelo, 2015; Zeng et al., 2019), evidence associated with quality teaching-learning and school climate (INEEd, 2019, 2023; Yeager et al., 2016; Yeager et al., 2022).

Among the practical implications is that multicomponent interventions based on elements of positive psychology can be used in educational systems to promote teacher wellbeing and health, either through intervention focused on these variables or on personal resources considered protective factors, in similar line with other intervention studies (Chan, 2010; Datu et al., 2022; Datu et al., 2023; Izquierdo et al., 2022; Lee et al., 2023), as well as improvements in their professional development and teacher training in competencies associated with socio-emotional education and wellbeing, as evidenced in the findings of this study by other studies, carried out on teachers (Dreer, 2023; Falecki & Mann, 2021; García-Álvarez et al., 2021; García-Álvarez et al., 2023; Pozo-Rico et al., 2020; Vo & Allen, 2022). Although this research did not address risk factors directly, other studies reported their reduction due to psychological interventions (Dreer, 2020; Dreer & Gouasé, 2022; Izquierdo et al., 2022; Pozo-Rico et al. al., 2020), this invites us to reflect on the role of health promotion and prevention of psychosocial risks in teaching work. In addition, we found that the effect sizes of these changes generated after the intervention are of medium to large magnitude, which is consistent with other multicomponent interventions based on positive psychology in both clinical and non-clinical populations and teachers (Carr et al., 2021 Donaldson et al., 2021; Dreer, 2020; Dreer & Gouasé, 2022; Hendriks et al., 2020; Van Agteren et al., 2021). Also among the repercussions of these results on the educational community in Uruguay would be to respond to the needs for teacher professional development identified by Mels et al. (2023) in the group of Uruguayan teachers, which emphasizes opportunities with theoretical characteristics with a marked practical emphasis on the daily work of the educational center, on

teamwork, exchange between professional peers, pedagogical reflection, socio-emotional skills considering the potential of information and communication technologies to achieve this.

However, since the program offers monitoring instances to generate sustainability of these changes in teachers, the limitations of the research design are sampling technique, sample size, and no monitoring measures were carried out on the dependent variables, nor were there any randomly assigned groups, which also implies the impossibility of hidden assignment, nor was a placebo program applied to the control group, a source of validity that affects the generalization of results; it is also necessary to mention the imbalance of women over men, As INEEd (2020) points out, there are female seniors in the educational system.

In future research, methodological issues must deepen the explanations about the influence of psychosocial characteristics in teaching work and the strengthening of teaching professional development that can escalate to public policies that seek to improve the profession and educational quality. At the same time, we recommended continuing the application of this type of program and using these methodologies in teachers so they can transmit them to students, given the high importance of emotional development from early stages, especially in adolescence. (Cabello-Sanz and Muñoz-Parreño, 2023).

## Conclusions

The results presented in the post from both experimental and control groups allow us to conclude that the FODI program based on a multicomponent intervention and based on positive psychology had effects on increasing eudaimonic wellbeing in the dimensions of control or acceptance, autonomy, bonds, and projects; also in improving wellbeing in the elements of positive emotions, commitment, relationships, meaning in life and achievements, including improving self-perception of one's health; in addition to increases in one's growth mentality and that of others, as well as the strengthening of professional development and teacher training in skills associated with socio-emotional education and wellbeing. Among future lines of research, contextual variables linked to professional development, such as perceived autonomy, organizational trust, support from the management team, and structural and organizational conditions, should be considered together with the psychological resources of the teaching staff. Another relevant aspect is to project psychological interventions mediated by technology that have a greater reach in the number of beneficiaries, focusing on their effectiveness.

**Contribution of each Author:** Introduction (D.G-A; M.J.S; R.C-R; D.MS), Methodology (D.G-A; R.C-R), Supervision (D.G-A; M.J.S; R.C-R), Initial writing (D.G -A; M.J.S; R.C-R), Final writing (D.G-A; M.J.S; R.C-R; D.MS), Statistical analysis (D.G-A; R.C-R; D.MS).

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## References

Arteaga-Checa, M., Palop-Montoro, M. V., & Manzano-Sánchez, D. (2022). Application of a program to improve personal development in future physical education teachers of the degree in education and its relationship with wisdom. *Sustainability*, *14*(3), 1188. https://doi.org/10.3390/su14031188

Ato, M., López, J., & Benavente, A. (2013). Un sistema de clasificación de los diseños de investigación en psicología. *Anales de Psicología,29*(3), 1038-1059. https://doi.org/10.6018/analesps.29.3.178511

Butler, J., & Kern, M. (2016). The PERMA-Profiler: A brief multidimensional measure of flourishing. *International Journal of Wellbeing, 6(*3), 1-48. https://doi.org/10.5502/ijw.v6i3.526

Cabello-Sanz, S., & Muñoz-Parreño, J. (2023). Design, implementation, and evaluation of the "Universo Emocionante" emotional educational Program through the Service-Learning methodology. *Espiral. Cuadernos del Profesorado, 16*(32), 95-105. https://doi.org/10.25115/ecp.v16i32.8754

Carr, A., Cullen, K., Keeney, C., Canning, C., Mooney, O., Chinseallaigh, E., & O'Dowd, A. (2021). Effectiveness of positive psychology interventions: a systematic review and meta-analysis. *The Journal of Positive Psychology, 16*(6), 749-769. https://doi.org/10.1080/17439760.2020.1818807

Casullo, M. M. (2002). *Evaluación del bienestar psicológico en Iberoamérica*. Paidós.

Chan, D. W. (2010). Gratitude, gratitude intervention and subjective well-being among Chinese school teachers in Hong Kong. *Educational Psychology, 30*(2), 139-153. https://doi.org/10.1080/01443410903493934

Dávila, J., Huertas, J., & Leal, F. (2023). Estructura psicológica del bienestar docente: justificación de un modelo situado. *Revista de Psicodidáctica*. https://doi.org/10.1016/j.psicod.2023.11.001

Datu, J., Lee, A., & Chung, K. (2023). Leveraging technology for pre-service teachers' well-being: The effectiveness of a multicomponent positive psychology intervention in pre-service preschool teachers in Hong Kong. *Applied Psychology: Health and Well-Being*, 1–26. https://doi.org/10.1111/aphw.12446

Datu, J., Lee, A., Fung, W., Cheung, R., & Chung, K. (2022). Prospering in the midst of the COVID-19 pandemic: The effects of PROSPER-based intervention on psychological outcomes among preschool teachers. *Journal of School Psychology, 94*, 66-82. https://doi.org/10.1016/j.jsp.2022.08.003

De Castella, K., & Byrne, D. (2015). My intelligence may be more malleable than yours: The revised implicit theories of intelligence (self-theory) scale is a better predictor of achievement, motivation, and student disengagement. *European Journal of Psychology of Education, 30*(3), 245-267. https://doi.org/10.1007/s10212-015-0244-y

Donaldson, S. I., Cabrera, V., & Gaffaney, J. (2021). Following the Science to Generate Well-Being: Using the Highest-Quality Experimental Evidence to Design Interventions. *Frontiers in Psychology, 12*, 739352. https://doi.org/10.3389/fpsyg.2021.739352

Dreer, B. (2020). Positive psychological interventions for teachers: A randomised placebo-controlled field experiment investigating the effects of workplace-related positive activities. *International Journal of Applied Positive Psychology, 5*(1), 77-97. https://doi.org/10.1007/s41042-020-00027-7

Dreer, B. (2023) On the outcomes of teacher well-being: A systematic review of research. *Frontiers in Psychology, 14*, 1205179. https://doi.org/10.3389/fpsyg.2023.1205179

Dreer, B., & Gouasé, N. (2022). Interventions fostering well-being of schoolteachers: A review of research. *Oxford Review of Education, 48*(5), 587-605. https://doi.org/10.1080/03054985.2021.2002290

Dweck, C. S. (2000). *Self-theories: Their Role in Motivation, Personality, and Development*. Psychology Press.

Dweck, C. S., Chiu, C., & Hong, Y. (1995a). Implicit Theories and Their Role in Judgments and Reactions: A Word from Two Perspectives. *Psychological Inquiry, 6*(4), 267-285. https://doi.org/10.1207/s15327965pli0604_1

Dweck, C. S., Chiu, C., & Hong, Y. (1995b). Implicit Theories: Elaboration and Extension of the Model. *Psychological Inquiry, 6*(4), 322-333. https://doi.org/10.1207/s15327965pli0604_12

Escudero, J. (2020). Un cambio de paradigma en la formación continuada del profesorado: escenario, significados, procesos y actores. *Qurriculum: Revista de Teoría, Investigación y Práctica Educativa, (33)*, 97-125. https://doi.org/10.25145/j.qurricul.2020.33.06

Falecki, D., & Mann, E. (2021). Practical Applications for Building Teacher WellBeing in Education. In: Mansfield, C.F. (eds) *Cultivating Teacher Resilience* (175-191). Springer, Singapore. https://doi.org/10.1007/978-981-15-5963-1_11

García-Álvarez, D., & Soler, M. J. (2021). Docentes agradecidos y con bienestar: efecto de una intervención psicoeducativa. *Informes Psicológicos, 21*(1), 201-215. https://doi.org/10.18566/infpsic.v21n1a13

García-Álvarez, D., Soler, M. J., & Achard-Braga, L. (2021). Psychological Well-Being in Teachers During and Post-Covid-19: Positive Psychology Interventions. *Frontiers in psychology, 12*, 769363. https://doi.org/10.3389/fpsyg.2021.769363

García-Álvarez, D., Soler, M. J., Achard-Braga, L., & Cobo-Rendón, R. (2020). Programa de psicología positiva sobre el bienestar psicológico aplicado a personal educativo. *Revista Electrónica Educare, 24*(1), 370-393. http://dx.doi.org/10.15359/ree.24-1.19

García-Álvarez, D., Soler, M. J., Cobo-Rendón, R., & Hernández-Lalinde, J. (2023). Teacher Professional Development, Character Education, and Well-Being: Multicomponent Intervention Based on Positive Psychology. *Sustainability, 15*(13), 9852. https://doi.org/10.3390/su15139852

Gorbeña, S., Govillard, L., Gómez, I., Sarrionandia, S., Macía, P., Penas, P., & Iraurgi, I. (2021). Design and evaluation of a positive intervention to cultivate mental health: preliminary findings. *Psicologia: Reflexão e Crítica, 34* (1), 7. https://doi.org/10.1186/s41155-021-00172-1

Granziera, H., Collie, R., & Martin, A. (2021). Understanding Teacher Wellbeing Through Job Demands-Resources Theory. In: Mansfield, C.F. (eds) *Cultivating Teacher Resilience* (229-244). Springer, Singapore. https://doi.org/10.1007/978-981-15-5963-1_14

Han, S., & Stieha, V. (2020). Growth Mindset for Human Resource Development: A Scoping Review of the Literature with Recommended Interventions. *Human Resource Development Review, 19*(3), 309–331. https://doi.org/10.1177/1534484320939739

Hendriks, T., Schotanus-Dijkstra, M., Hassankhan, A., De Jong, J., & Bohlmeijer, E. (2020). The efficacy of multi-component positive psychology interventions: A systematic review and meta-analysis of randomized controlled trials. *Journal of happiness studies, 21*, 357-390. https://doi.org/10.1007/s10902-019-00082-1

Iacobucci, D., Popovich, D. L., Moon, S., & Román, S. (2023). How to calculate, use, and report variance explained effect size indices and not die trying. *Journal of Consumer Psychology, 33*(1), 45-61. https://doi.org/10.1002/jcpy.1292

INEEd (2020). *Estudio de salud ocupacional docente.* Instituto Nacional de Evaluación Educativa.

INEEd (2023). *Aristas 2022. Informe de resultados de tercero de educación media*. Instituto Nacional de Evaluación Educativa.

INEEd. (2019). *Aristas. Marco de habilidades socioemocionales en tercero de educación media.* Instituto Nacional de Evaluación Educativa.

Izquierdo, A., Gilar-Corbí, R., Pozo-Rico, T., & Castejón, J. L. (2022). Resultados de un programa de formación en competencias emocionales para profesorado de Educación Primaria. *European Journal of Education and Psychology, 15*(1), 1–17. https://doi.org/10.32457/ejep.v15i1.1746

Kubzansky, L. D., Kim, E. S., Boehm, J. K., Davidson, R. J., Huffman, J. C., Loucks, E. B., ... & Moskowitz, J. T. (2023). Interventions to modify psychological well-being: Progress, promises, and an agenda for future research. *Affective Science, 4*(1), 174-184. https://doi.org/10.1007/s42761-022-00167-w

Lee, A., Datu, J., Chan, D., Lau, E., Fung, W., Cheng, R., ... & Chung, K. (2023). The effects of a PROSPER-based intervention on well-being among pre-service preschool teachers during the COVID-19 pandemic: a randomized control trial. *Educational Psychology, 43*(2-3), 228-245. https://doi.org/10.1080/01443410.2023.2189649

Mels, C., Lagoa, L., Collazzi, G., & Cuevasanta, D. (2023). Desafíos y oportunidades para la formación continua del profesorado en Uruguay. *Cuadernos de Investigación Educativa, 14*(2). https://doi.org/10.18861/cied.2023.14.2.3430

Mérida-López, S., Sánchez-Álvarez, N., & Extremera, N. (2022). Retención docente a través de la teoría de demandas y recursos laborales. *Educación XX1, 25*(2), 151-171. https://doi.org/10.5944/educxx1.31901

Nalipay, M., King, R., Mordeno, I., & Wang, H. (2022). Are good teachers born or made? Teachers who hold a growth mindset about their teaching ability have better well-being. *Educational Psychology, 42*(1), 23-41. https://doi.org/10.1080/01443410.2021.2001791

Parada, S., & Verlhiac, J. F. (2022). Growth mindset intervention among French university students, and its articulation with proactive coping strategies. *Educational Psychology, 42*(3), 354-374. https://doi.org/10.1080/01443410.2021.1917519

Popova, A., Evans, D. K., Breeding, M. E., & Arancibia, V. (2022). Teacher professional development around the world: The gap between evidence and practice. *The World Bank Research Observer, 37*(1), 107-136. https://doi.org/10.1093/wbro/lkab006

Pozo-Rico, T., Gilar-Corbí, R., Izquierdo, A., & Castejón, J.-L. (2020). Teacher Training Can Make a Difference: Tools to Overcome the Impact of COVID-19 on Primary Schools. An Experimental Study. *International Journal of Environmental Research and Public Health, 17*(22), 8633. https://doi.org/10.3390/ijerph17228633

Pozo-Rico, T., Poveda, R., Gutiérrez-Fresneda, R., Castejón, J. L., & Gilar-Corbi, R. (2023). Revamping Teacher Training for Challenging Times: Teachers' Well-Being, Resilience, Emotional Intelligence, and Innovative Methodologies as Key Teaching Competencies. *Psychology research and behavior management,16*, 1–18. https://doi.org/10.2147/PRBM.S382572

Rodrigo-Moriche, M., Vasco-González, M., Gil-Pareja, D. & Pericacho-Gomez, J. (2022). Mejora de los programas de formación inicial docente a partir de la trayectoria personal, académica y profesional del alumnado. *Revista Electrónica Interuniversitaria de Formación del Profesorado, 25*(2), 1-14. https://doi.org/10.6018/reifop.512851

Ryff, C. D. (1989). Happiness is everything, or is it? Explorations on the meaning of psychological well-being. *Journal of Personality and Social Psychology, 57*(6), 1069–1081. https://doi.org/10.1037/0022-3514.57.6.1069

Seaton, F. (2018). Empowering teachers to implement a growth mindset. *Educational Psychology in Practice, 34*(1), 41-57. https://doi.org/10.1080/02667363.2017.1382333

Seligman, M. (2011). *Flourish: A visionary new understanding of happiness and well-being*. Simon and Schuster.

Shoshani, A. (2021). Growth mindset in the maths classroom: A key to teachers' well-being and effectiveness. *Teachers and Teaching, 27*(8), 730-752. https://doi.org/10.1080/13540602.2021.2007370

Vaillant, D. (2014). Análisis y reflexiones para pensar el desarrollo profesional docente continuo. *Educar*, 55-66. http://dx.doi.org/10.5565/rev/educar.690

Vaillant, D., & Marcelo, C. (2015). *El ABC y D de la formación docente*. Narcea Ediciones.

van Agteren, J., Iasiello, M., Lo, L., Bartholomaeus, J., Kopsaftis, Z., Carey, M., & Kyrios, M. (2021). A systematic review and meta-analysis of psychological interventions to improve mental wellbeing. *Nature Human Behaviour, 5*(5), 631-652. https://doi.org/10.1038/s41562-021-01093-w

Vo, D., & Allen, K. (2022). A systematic review of school-based positive psychology interventions to foster teacher wellbeing. *Teachers and Teaching, 28*(8), 964-999. https://doi.org/10.1080/13540602.2022.2137138

Wang, H., Burić, I., Chang, M. L., & Gross, J. J. (2023). Teachers' emotion regulation and related environmental, personal, instructional, and well-being factors: A meta-analysis. *Social Psychology of Education*, 1-46. https://doi.org/10.1007/s11218-023-09810-1

Yeager, D. S., Carroll, J. M., Buontempo, J., Cimpian, A., Woody, S., Crosnoe, R., Muller, C., Murray, J., Mhatre, P., Kersting, N., Hulleman, C., Kudym, M., Murphy, M., Duckworth, A. L., Walton, G. M., & Dweck, C. S. (2022). Teacher Mindsets Help Explain Where a Growth-Mindset Intervention Does and Doesn't Work. *Psychological Science, 33*(1), 18–32. https://doi.org/10.1177/09567976211028984

Yeager, D. S., Romero C., Paunesku D., Hulleman C. S., Schneider B., Hinojosa C., Lee H. Y., O'Brien J., Flint K., Roberts A., Trott J., Greene D., Walton G. M., Dweck C. S. (2016). Using design thinking to improve psychological interventions: The case of the growth mindset during the transition to high school. *Journal of Educational Psychology, 108*(3), 374–391. https://doi.org/10.1037/edu0000098

Zeng, G., Chen, X., Cheung, H. Y., & Peng, K. (2019). Teachers' growth mindset and work engagement in the Chinese educational context: Well-being and perseverance of effort as mediators. *Frontiers in Psychology, 10*, 839. https://doi.org/10.3389/fpsyg.2019.00839

## Annex I

*Description of the intervention*

| TIDieR Scale | Description according to FODI intervention |
|---|---|
| Abbreviated name | FODI multicomponent program: Training in Character Education for directors and educational leaders |
| Basis | Positive psychology. Character, emotional, and well-being education as a basis for the design of a multicomponent program that included training modules with the following topics organized into modules: models of well-being, resilience, personal growth, mindfulness, self-esteem, self-efficacy, assertive communication, interpersonal relationships, cognitions related to a growth mindset, both limiting and enhancing beliefs and the transversal axis of character strengths, each facilitated by an accredited expert teacher in the area. |
| Materials | The experimental group received training in the multicomponent program with synchronous classes and had a work platform where the coordinator saved materials, readings, and recorded classes on the platform, and evidence of the activities that the participants carried out in their respective educational centers, such as photos and videos, was shared. |
| Procedure | The FODI program was confirmed by two face-to-face meetings, 11 virtual meetings, and two follow-up instances the following school year. |
| Who | An educational coordinator organized the members. They led the team of facilitators with extensive experience discussing the topic in each thematic module accredited by specific training in psychology or education and postgraduate studies. The coordinator sought to maintain the common thread throughout the training section, emphasizing the applicability of the contents in teaching work and the level of personal growth. |
| How | Group intervention, with two face-to-face days at the beginning and closing of six hours each. In addition to 11 synchronous virtual meetings lasting two and a half hours. Plus, the asynchronous work that each person did in the exercises, readings, and strategies per module. The teams of teachers and the coordinator generate spaces for discussion to exchange innovative educational practices in all the meetings. |
| Where | It was blended. After two face-to-face days in a room with all the necessary resources to facilitate training, such as a screen, projector, and other resources, the participants traveled to Montevideo, as they were initially from 12 departments in the interior of the Republic. Synchronous classes are via video conferences. |
| When | It started in April (close to the beginning of the school year) and closed in October (end of the school year) of 2022. The virtual meetings were every 15 days according to the possibility of the calendar. |
| Planned | We previously obtained the evaluation of the ethics committee. According to the intervention schedule, the experimental and control groups were organized, the latter being free of all training. The pre-and post-intervention measures are at the beginning and end. The two follow-up sessions will take place the following year (2023). |
| Observed | 95% of participants completed the intervention program in its entirety, indicating adequate rates of satisfaction and applicability with the learning. In addition, the effectiveness of the intervention confirmed the improvement of growth mindset, eudaimonic well-being, multidimensional well-being (PERMA), and competencies related to professional teacher training. |