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# Self-esteem and general self-efficacy in an outdoor training program in university students

## *La autoestima y la autoeficacia general en un programa de entrenamiento al aire libre*

### *–Outdoor Training– en universitarios*

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**Abstract:** This study aimed to evaluate a program in which an outdoor training methodology was applied to develop self-efficacy and self-esteem. Specifically, the study aimed to determine the change in psychological variables, such as general self-efficacy and self-esteem, in a large sample of university students undertaking social sciences and participating in this program. A multivariate analysis was conducted on a group of 123 individuals to determine the composition of each variable and examine the moderating effect of the outdoor training program. Changes in the scores of these variables measured before and after implementing the program, in which different outdoor activities were carried out, are presented. The experiential training program positively affected general self-efficacy and self-esteem. Finally, the importance of this program, wherein an innovative outdoor training methodology has been applied to improve motivation, academic success, well-being, health, and adjustment of students in the university environment, is discussed.

**Keywords:** Outdoor training program, Emotional competences, University student, Self-esteem, General self-efficacy.

**Resumen:** El objetivo del trabajo fue evaluar un programa en el que se aplicó la metodología de *outdoor training* en el desarrollo de competencias socioemocionales y para la inserción en el ámbito laboral. Concretamente, esta investigación pretendió determinar el cambio producido en variables psicoeducativas como la autoeficacia general y la autoestima en una amplia muestra de estudiantes universitarios pertenecientes al área de Ciencias Sociales que participaron en dicho programa. A partir de una muestra de 123 individuos se realiza un análisis multivariante para ver la composición de cada variable psicoeducativa y ver cómo afecta el programa de *outdoor training* como efecto moderador. Se presentan los cambios que experimentaron en la puntuación de dichas variables antes y después de la aplicación del programa, en el que se desarrollaron distintas actividades al aire libre. Para finalizar, se discute la importancia de este tipo de programas en los que se aplica la innovadora metodología *outdoor training* para la mejora de la motivación, del éxito académico y del bienestar, salud y ajuste de los estudiantes en el ámbito universitario. Puede señalarse que se vienen llevando a cabo programas en distintos niveles educativos (Educación Primaria, Educación Secundaria y Universidad) en los que los resultados obtenidos avalan la necesidad de continuidad y coherencia de este tipo de programas que, entre otros aspectos, contribuyen a la adquisición y/o desarrollo de competencias sociales y emocionales.

**Palabras clave:** *Outdoor training program*, Competencias emocionales, Estudiantes universitarios, Autoestima, Autoeficacia general.

## INTRODUCTION

Since the introduction of the European Higher Education System, there has been great concern regarding the development of students' social and emotional competence and the use of teaching methodologies that make this task more effective. This study discusses the importance of outdoor training as a teaching methodology, using it as a pedagogical tool for its development.

This research aimed to analyze whether there are differences in generalized efficacy and self-esteem among participants after receiving a psychoeducational intervention program using the outdoor training methodology. The non-parametric

contrast of the Wilcoxon signed-rank test was used to perform this analysis. This test is perfect for checking whether there are any differences between the distributions of two related samples; in our case, if there are differences before and after receiving the outdoor training program, and which of these two variables has a more significant effect on the said programs.

### *Generalized Self-Efficacy*

Studying self-efficacy and related factors are becoming increasingly relevant and linked to students' academic and professional development. General self-efficacy can be defined as the set of beliefs that people have regarding their ability to achieve an adequate rate of success in performing the activities undertaken (Bandura, 1977; Bandura, 1987; Bandura *et al.*, 1999; Sitzmann & Yeo, 2013). These can be associated with more adaptive academic goals (Wolf *et al.*, 2018) and improved academic performance and study habits among university students (Pajares, 1996; Terry-Torres, 2008; Zajacova *et al.*, 2005), lower levels of procrastination (Zhou & Kam, 2017), more self-regulated learning (Alegre, 2014), and anxiety levels in university students (Morales-Rodríguez & Pérez-Mármol, 2019).

In psychoeducational models such as that of Saavedra (2003), self-esteem and self-efficacy constitute one of the dimensions from which it is necessary to intervene in the academic environment to build a resilient response to adversity and situations of academic stress in university students. Similarly, self-efficacy has been defined as perceived capabilities within specific domains (Bandura, 1987; Morales-Rodríguez & Pérez-Mármol, 2019; Pajares, 1996; Schunk & Pajares, 2002). The development of programs using outdoor training methodology can contribute to the improvement of generalized self-efficacy, simultaneously leading to improving academic learning, well-being, and socio-emotional competences in the university environment. In a study of a sample of university students, Nájera *et al.* (2016) found that only 40.4% felt they could handle unexpected events effectively. Similarly, other studies have reported higher anxiety and stress levels among students with lower scores on the perceived self-efficacy variable (Barraza & Hernández, 2015; García-Fernández *et al.*, 2015).

Recent studies have demonstrated the importance of promoting self-efficacy in a university environment, as described below. A study (Gómez Martínez & Romero Medina, 2019) evaluated the influence of perceived academic self-efficacy on academic performance in a sample of 136 university psychology students and found that higher self-efficacy was one of the variables that best explained academic performance. Álvarez-Pérez *et al.* (2021) demonstrated the relationship between

academic self-efficacy beliefs and the level of commitment among university students. Similarly, Barrientos-Illanes *et al.* (2021) found statistically significant positive correlations in a sample of 273 undergraduate students between academic self-efficacy and satisfaction variables and university students' intention to remain in their studies. Similarly, a recent study (Valle *et al.*, 2020) showed that groups with higher degrees of self-determination for learning presented higher levels of academic self-efficacy. Covarrubias-Apablaza *et al.* (2019) also found that general self-efficacy is one factor that explains university students' academic goals. Hence, developing programs that improve scores on these constructs is essential.

This construct is vital. Unfortunately, only a few educational programs focus on improving self-efficacy and self-esteem in secondary education (Gaspar-Pérez *et al.*, 2019; Gómez-Peresmitré *et al.*, 2019). However, not in universities, which need programs such as the one presented in this research in the current pandemic situation and the uncertainty generated by their professional future and remote teaching methodologies to which they have had to adapt.

### *Self-Esteem*

Arancibia *et al.* (2008, p. 264) believe that “self-esteem consists of the positive or negative evaluation that an individual has of the personality attributes, traits, and characteristics that structure and are included in what they conceive as themselves. This also includes the emotions that they associate with these characteristics and the attitudes that they have towards themselves”. This is an “affective evaluation” of our self-concept considered unidimensional (Miras, 2001). From a more theoretical perspective, this can be regarded as one of the components of self-concept. Specifically, the affective and evaluative component (Burns, 1990), which Rosenberg (1965), whose scale has been applied as an instrument to evaluate this variable in this study, understands as the set of feelings and thoughts of personal worth and self-respect; that is to say, the self-confidence that the student has in themselves. Notably, the Rosenberg scale allows us to obtain an overall unidimensional total score for the self-esteem variable, understood as the evaluative dimension of self-concept. Self-concept is a delimitation of the individual's physical, psychological and social characteristics that allows us to answer the question, “Who am I? (Ortega & Sánchez-Queija, 2016).

Very few studies and interventions focused on the university population, in contrast to a large amount of research focused on the improvement of self-concept and self-esteem in children and teenagers, and even fewer in which the innovative methodology of outdoor training has been used. Notably, most programs for

improving self-concept and self-esteem are aimed at children (e.g., Vallés-Arándiga's Program for the Improvement of Self-Esteem and Self-Concept, 1999; Ha-seussler and Milivic's Self-Confidence (Self-Esteem Program, 1996)) and teenagers (e.g., Morganett's Feeling Good about Yourself (1995); Morales *et al.*, (2009); Morales-Rodríguez (2017a, 2017b)).

It is necessary to contribute to the development of self-esteem and self-efficacy in university students by using the outdoor training methodology implemented in this program. Notably, one of the most critical challenges today in the university environment is to contribute to preventing academic dropout (Torrado & Figuera, 2019). Thus, it is essential to apply these methodologies contributing to promoting self-esteem and self-efficacy among students. These variables also acted as protective factors during the current pandemic. Regarding self-esteem, a recent study (Gómez-Tabares *et al.*, 2020) found negative correlations between self-esteem and self-confidence and suicide risk in a sample of university students.

Another recent study (Ribeiro *et al.*, 2020) with a sample of 264 university students found that both self-esteem and self-efficacy play an essential role in personal and professional life and that it is necessary to strengthen mental health in university students by promoting the development of these factors. These constructs are positively correlated (Ribeiro *et al.*, 2020). Similarly, Núñez-Ramírez *et al.* (2019) found that self-esteem impacts life satisfaction among university students. Similarly, Romero-Rodríguez and Aznar-Díaz (2019), in a sample of university students from the Faculty of Education Sciences, demonstrated the existence of negative correlations between self-esteem and addiction to mobile devices. Negative correlations have also been found between self-esteem and the perception of loneliness (Da Fonsêca *et al.*, 2018), and positive correlations with the meaning of life (Smedema & Barahona, 2018) and predisposition to entrepreneurial behavior (Morales-Rodríguez *et al.*, 2018).

However, in light of the current pandemic, it is becoming even more evident that there is a need for psychoeducational programs and interventions to improve the quality of life and well-being in the university environment by improving self-esteem. Therefore, recent studies show that university students experience the most daily stress due to uncertainty regarding their professional future and many other academic situations (Morales-Rodríguez, 2021). This fact may have increased during the pandemic with worsening mental health, even leading to an increase in suicidal thoughts (Patsali *et al.*, 2020), against which precise variables such as self-esteem and self-confidence act as protective factors (Gómez-Tabares *et al.*, 2020).

Generally, notably, this type of program in which outdoor training is used as a teaching methodology can contribute to the improvement of soft skills with

integrated learning, development of communication skills, and group work, among other competences. As Izwar-Ibrahim *et al.* (2017) found in another cultural context, improving these competences and soft skills also influences university students' self-esteem.

### *Experiential Learning and Outdoor Training*

Experiential learning is part of the so-called active methodologies based on involving people to provide them with tools to handle specific problems. According to Jiménez-Martín and Gómez-Encinas (2008), experiential learning enables constructing an environment parallel to everyday life, thus breaking down the initial personal resistance. This is called experiential because experience plays a role in the learning process. Therefore, experience is related to reflection, forming a cycle that allows the formation of abstract concepts (Kolb, 1984). The key to the success of experiential learning lies in the simultaneous application of cognitive and emotional learning, which allows experiences to be recorded and applied to subsequent situations (Cadavid *et al.*, 1999). Similarly, more recently, McDonald (2020) demonstrated that the teaching or learning process is more effective through experience with this type of methodology.

Different experiential learning programs have successfully increased emotional intelligence (EI). Problem-based learning, for example, is based on students tackling a real or hypothetical problem in small groups under the supervision of a tutor. This type of learning is innovative because it is necessary to go beyond the accumulation of rules and knowledge to develop cognitive strategies to analyze structured situations and create unexpected solutions. Cornell University has used problem-based learning techniques to help students develop their cognitive abilities and improve their behavior (Scott-Halsell *et al.*, 2011). Similarly, Master of Business Administration students at Case Western Reserve University's Weatherhead School of Management experimented with a leadership training program that has led to increased Emotional Intelligence. In this regard, Goleman *et al.* (2002) reported a 70% improvement in EI scores among graduates 1-2 years after completing the program and maintained a 50% improvement after 5-7 years. Moreover, by using the EI program with professionals in Brazil and the USA to raise awareness and support positive behavior, increases of between 11% and 24% in EI scores have been achieved.

Based on Kolb's (1984) experiential learning theory, outdoor training has also been successfully used in the development of emotional competences, such as communication, teamwork, conflict management, time management, adapting to

change, motivation, leadership, creativity, self-control, and self-confidence (Clements *et al.*, 1995; Dufrene *et al.*, 1999; Mcevoy & Cragun, 1997; Padilla-Meléndez *et al.*, 2014; Payne, 2000).

Outdoor training comprises a methodology that uses outdoor activities to develop and train emotional competences suitable for behavioral management. The goal is to involve the team and its members in intellectually and emotionally new challenges (Cobo, 2000). It also helps participants self-assess their strengths and weaknesses and learn about themselves from there (Cuadrado, 1998).

Outdoor training programs involve uncertainty, reality, excitement, risk perception, and interaction with nature and encourage participants to push their limits, achieving goals or objectives they never thought they would be able to achieve. The outdoor training method requires a set of techniques that employ indoor and outdoor activities using the classroom to reflect and draw the main conclusions (Chulilla, 2002; Wagner *et al.*, 1991). Programs focusing on outdoor activities can have a high impact (high ropes) or low impact (low ropes) and are differentiated by the altitude at which the activities are carried out. The choice of program was made according to the participants' physical training.

Authentic evaluation (Biggs, 2005) is critical in evaluating outdoor training experiences, whereby a participant's performance is observed in a practical, problem-solving, or case study context. This contextualized evaluation allows the assessment of the participant's use of knowledge and implies that such assessment must reflect the skills needed in the workplace (Baartman *et al.*, 2007).

An increasing number of studies have focused on problem-based learning, and its applications are being located (Al-Busaidi *et al.*, 2021; Casa Coila *et al.*, 2019; Yew & Goh, 2016). Al-Busaidi *et al.* (2021) highlight the need for collaboration in developing a problem-based learning culture in institutions. Similarly, Casa Coila *et al.* (2019) found that using a problem-based learning methodology for competency acquisition improved students' learning. Similarly, Yew and Goh (2016) demonstrated the effectiveness of problem-based learning in their review of more excellent long-term knowledge retention and improved knowledge application.

The general objective of this research was to evaluate the effects of a program in which outdoor training methodology is applied in the development of self-efficacy and self-esteem. Specifically, this study aimed to determine the change in psychoeducational variables such as general self-efficacy and self-esteem in a sample of program participants.

The hypotheses associated with the objective were as follows: We expected to find a positive effect of the program regarding statistically significant differences before and after the program's general self-efficacy and self-esteem variables.

## METHOD

### *Procedure*

Study of quantitative approach, and transverse design. Participants were informed of the objectives and procedures of the study. The study was approved by the ethics committee of the institution where it was conducted (328/CEIH/2017). Evaluations were conducted before the program started and after the program ended on different variables selected to record its effect. Informed consent was obtained, anonymity was guaranteed, data confidentiality was guaranteed, and participants could stop participating without any justification. This study respected the principles established in international and national legislation in biomedicine, biotechnology, and bioethics, as well as all rights derived from personal data protection. Data processing was conducted per the ethical guidelines of the Helsinki Protocol and the Ethical Committee of the University of Málaga.

### *Participants*

Participants in this study were students from the University of Málaga, in the area of social sciences corresponding to different degrees, who were interested in participating in programs outside the compulsory teaching program. The study sample comprised 123 randomly selected participants in the outdoor training program. Of the participants, 47.2% were men participants, and 52.8% were female participants; therefore, the sample was balanced according to the gender variable. The average age of the participants was 28.83 years old, with a standard deviation of  $\pm 5.95$  years. Furthermore, the educational level of the participating students' parents was uniform with secondary studies.

It was also verified that 100% of the participants had no experience in outdoor training programs, 20% had previous leadership training experience, and 90% had some teamwork experience. Moreover, 92% had received personal and interpersonal skills education in class, and 15% had previous experience in volunteer work. With a sample size of 123 university students and a confidence interval of 95%, assuming a bilateral level ( $\alpha$ ) of .05, the estimated error was 8.8% (beginning with the worst case of  $p=q=0.5$  and an infinite population), making it suitable for experimental studies. This activity is a pilot program, and the sample size is sufficient to perform the statistical tests used in this study.

The criteria for inclusion of students in the program were as follows: a) full-time university students to benefit from the whole process on an ongoing basis and b) between 18 and 45 years of age. The exclusion criteria for participants in



the program were: a) students with special educational needs such as disabilities or severe behavioral disorders who could not participate in the program despite being able to attend university classrooms, and b) failure to complete any of the instruments appropriately provided.

### *Instruments*

Self-esteem and efficacy were selected to control for the effects of the program. The efficacy and impacts of the program on other variables have been demonstrated previously. The initial data at the beginning of the program had not yet been compared with the final data once the outdoor training program had been completed for the variables in the university population. The variables are very relevant to the university population. The effects of this type of program have hardly been applied and evaluated because they are related to academic performance, improved learning, lower levels of academic stress, and maladjustment in university students.

The following instruments were provided for evaluation:

*Generalized self-efficacy scale* (Baessler & Schwarzer, 1996; Espada *et al.*, 2012): It comprises a Likert-type scale ranging from 1 to 4, where 1 is never, and 4 is always (intermediate values can be given). It consists of ten items and assesses generalized self-efficacy, a variable considered in this study (Table 1). This scale has been used in numerous studies (Bueno-Pacheco *et al.*, 2018; Espada *et al.*, 2012; Morales-Rodríguez & Pérez-Mármol, 2019; Moreta-Herrera *et al.*, 2019). Further, it has adequate psychometric reliability and validity, with internal consistency ranging between .82 and .93. The internal consistency of the sample was .82. An example of an item on the scale is: “When I am in difficulty, I can remain calm because I have the skills to handle difficult situations”.

*Rosenberg Self-Esteem Scale* (Rosenberg, 1965). It is a self-report scale that allows for the overall assessment of self-esteem. It has a four-step Likert-type response format: 1= strongly disagree, and 4= strongly agree (Table 1). It is a well-established and widely used instrument and one of psychology’s most widely used instruments to assess this construct in this population. The scale has adequate reliability and validity for psychometric properties in this sample. Some items have been formulated positively so that they all have the same orientation while maintaining their whole original meaning to facilitate students’ understanding. This scale has been validated in different countries with Cronbach’s alpha ranging from .80 to .89. The internal consistency of the sample was .843. This scale has been used in numerous studies (Morales Rodríguez *et al.*, 2020; Reginasari *et al.*, 2021). An example item of the scale is “I feel that I am as valuable and worthwhile a person as anyone else”.

**Table 1. Variables**

VARIABLE	ASK
EF11	I can find a way to get what I want, even if someone opposes me.
EF12	I can solve difficult problems if I try hard enough.
EF13	It is easy for me to persist in what I have set out to do until I reach my goals.
EF14	I am confident that I can effectively handle unexpected events.
EF15	Thanks to my qualities and resources I can overcome unforeseen situations.
EF16	When I find myself in difficulty, I can remain calm because I have the necessary skills to handle difficult situations.
EF17	Whatever comes my way, I'm usually able to handle it.
EF18	I can solve most problems if I try hard enough.
EF19	If I find myself in a difficult situation, it usually occurs to me what I should do.
EF110	When faced with a problem, I usually come up with several solutions.

*Generalized self-efficacy scale* (Baessler & Schwarzer, 1996; Espada *et al.*, 2012).

VARIABLE	ASK
EST1	I feel that I am as valuable and worthy of appreciation as any other person.
EST2	I am certain that I have good qualities.
EST3	I am able to do things as competently as most people.
EST4	I have a positive attitude towards myself.
EST5	Overall, I am satisfied with myself.
EST6	I feel I don't have much to be proud of.
EST7	In general, I am inclined to think that I am a failure.
EST8	I would like to be able to feel more respect for myself.
EST9	Sometimes I think I am a useless person.
EST10	Sometimes I think I am not a good person

*Rosenberg Self-Esteem Scale* (Rosenberg, 1965).

### *Program*

An experiential training program was applied to this sample using the outdoor training methodology. Specifically, an experiment comprising outdoor activities in the form of challenges framed within a role-playing game, using low-impact tests developed by interlacing debriefs (reflections of the participants for the analysis of behavior). Activities with this sample took place over four sessions. Three were

held in classrooms (indoors) and the other in a natural setting (outdoors). An ex post facto design was used. It allows the control and assessment of the results as a possible effect of the treatment or intervention program. In particular, before and after the intervention program, to observe any changes that may be generated by the same. The sample included 123 students, which is higher than or similar to other studies on the subject, for example, 23 MBA students (MacLean *et al.*, 1996), 68 employees (Dadehbeigi & Shirmohammadi, 2010), 170 participants (Cherniss *et al.*, 2010) and 18 participants (Kolb & Kolb, 2010).

Gestalentum 20 × 10 is a program for developing emotional competences using outdoor training. It has a duration of 3 months and 24 face-to-face hours distributed over four sessions, as shown in Table 2. The program begins with an initial session in a room (indoor) (Table 3) for 6 hours, with the idea of informing and introducing the participant to the program and the challenges to be undertaken, using role playing as a dynamic and experiential methodology, working on generalized self-efficacy competences. The second session takes place in a natural environment for 8 hours (Table 2, Table 4). Gamification is used for the development of the activity in a natural environment, with planning of dynamics and activities that make the participant go beyond his comfort zone and accept a challenge. For example, in the game “Electric Fence”, two ropes are tied between two trees at the head level of the participants. The participants must cross over the ropes without touching them. As one person cannot simply jump across on their own, the participants have to cooperate and create a strategy collectively. Such dynamics have been designed with the same purpose. It comprises raising a global objective to the groups with partial tasks so that they obtain rewards to fulfill part of that global objective based on their fulfillment. These activities are exercises in which they combine mental skills. The third session, with a duration of 6 hours, aims to reflect on whatever happens during the program, starts working on the individual development of the participant, and makes parallelism with their current life, using the role playing methodology and the johari window as a tool (Luft *et al.*, 1955), working on the generalized self-efficacy of competence. The fourth session is a session of conclusions of the program and individual conclusions of the participants with a duration of 6 hours, using the role playing methodology and the SWOT (Strengths, Weaknesses, Opportunities, Threats, and Opportunities) CAME (Correct, Confront, Maintain and Exploit) as a dynamic and experiential methodology, working on the competence of self-esteem. Data were obtained during the initial pre-test session and in the last post-test session.

**Table 2. Sessions and competences**

SESSIONS	HOURS	LOCATION	COMPETENCE	ACTIVITY PREFORMED	TEST
Sessions 1	6	Indoor	general self-efficacy	Roll Play Presentation	Pre
Sessions 2	8	Outdoor	self-esteem	Electric fence	
			general self-efficacy	Melt Down	
			self-esteem	Puzzle	
			general self-efficacy	Pipelines	
			self-esteem	Minefield	
			general self-efficacy	Magic Pencil	
			self-esteem	Everyone Together	
			general self-efficacy	Square Rope	
			Sessions 3	6	Indoor
Sessions 4	6	Indoor	self-esteem	Roll play SWOT - CAME	Post

SWOT (Strengths, Weaknesses, Opportunities, Threats, and Opportunities) CAME (Correct, Confront, Maintain and Exploit).

**Table 3. Indoor Activities**

ACTIVITIES	DESCRIPTION	MATERIAL	DISCUSSION	CLOUSURE	COMPETENCE
Presentation	Description of the objectives of the programme and the individual objectives of the participants	Blackboard and template presentation	What are our personal and professional goals and do we have a plan to achieve them?	The importance of reflecting on our goals and how to achieve them	General Self Efficacy
Windows Johari	Description of how we show ourselves to others and how they see us from the outside and analyse the different points of view from which each team member is viewed	Blackboard and template windows Johari	How do you see yourself and how do others see you? How do you show yourself to other team members?	The importance of reflecting on the different perspectives from which the person is seen	General Self Efficacy
SWOT - CAME	Personal evaluation of the SWOT and based on this diagnosis make decisions from the CAME	Blackboard and template SWOT	Presentation of SWOT and CAME to implement the Individual Action Plan	The importance of analysing and having a plan	Self Steem

SWOT (Strengths, Weaknesses, Opportunities, Threats, and Opportunities); CAME (Correct, Confront, Maintain and Exploit).

**Table 4. Outdoor Activities**

ACTIVITIES	DESCRIPTION	MATERIAL	DISCUSSION	CLOUSURE	COMPETENCE
Electric Fence	The team must organise themselves to pass between two ropes at a medium height, if they touch it, they start again	Two ropes and two trees with a minimum distance of two metres	How did we feel when we were being caught by our partners?	The importance of personal confidence and its effect on the team	Self Steem
Melt Down	The team must agree to put the balls inside the bucket from one bucket to another using a rope net	Two buckets, balls, and ropes in the form of a net	Has the team organised itself effectively? What have I contributed to the team?	The importance of effective personal management in the team	General Self Efficacy
Puzzle	Each member has a number under their feet between 1 & 9 and in their hands they have a different number and the team must put it in order	Two sets of numbers from 1 to 9	How did I feel during the exercise and do I feel I led the exercise?	The importance of self-confidence to be able to lead the team	Self Steem
Pipeline	Each member has a cone to place in front of their chest and everyone in line must reach a point, if the cone falls down everyone starts again	Cones for each participant	Has the team been able to work together?	The importance of their individual contribution to the team in order to achieve the results	General Self Efficacy
Minefields	In a field full of cones/ mines the whole team must pass through blindfolded and guided by another member of the team	Cones and a bounded field and handkerchiefs	Did I have the self-confidence to get through the blindfolded exercise?	The importance of trusting your partner and your own self-confidence	Self Steem
Magic Pencil	With a giant pencil held by ropes and supported by each team member they have to write on a blackboard on the ground the most important value for their te	Giant pencil, ropes, blackboard	Did you feel that you contributed to the team to achieve the objective? What was your contribution?	The importance of participating in the team when I bring added value to the team	General Self Efficacy

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**Table 4. Outdoor Activities**

ACTIVITIES	DESCRIPTION	MATERIAL	DISCUSSION	CLOUSURE	COMPETENCE
Everyone Together	The team is placed on one side of the field and balls and four buckets are distributed, the members who are going to pick up the balls must be blindfolded and must be guided by the other members	Four buckets, balls, handkerchiefs for each member	Did you trust the partner who guided you in the exercise?	The importance of how our self-confidence influences our trust in others	Self Steem
Square Rope	The team is given a rope and all members blindfolded, must make a square	A single rope of two metres in length	Do you feel that there has been communication in the team, and do you feel that you have helped in that process?	The importance of good communication to be effective	General Self Efficacy

## RESULTS

Once the data were obtained, statistical analysis was performed using an transversal design. The analysis was conducted using the SPSS windows software version 25.0 (IBM, Corp., 2016). This section analyzes the empirical part of this research. A descriptive analysis of the variables studied are carried out, including contrasting hypotheses, items that make up the generalized self-efficacy scale (Baessler & Schwarzer, 1996; Espada *et al.*, 2012), and items that make up the Rosenberg Self-Esteem Scale (1965).

Specifically, the intention is to analyze whether there has been a change in assessing students who have undergone outdoor training experience. The experiential training program using the outdoor training methodology positively affected general self-efficacy and self-esteem. The generalized self-efficacy variable and self-esteem were analyzed based on 10 items each.

Since it is a Likert-type scale with ordinal data, it is advisable to perform a non-parametric analysis for paired data.

The following table (Table 5) analyzes each item's mean and standard deviation. A non-parametric Wilcoxon test for related data was performed to analyze whether there were statistically significant differences before and after outdoor training activity. This type of analysis is appropriate when the data are not normally distributed, as in this case, where the Kolmogorov-Smirnov normality test

indicates that the data are not normally distributed (in all cases, the significance level is less than 0.05). In all items, the differences are statistically significant with a significance of 0.05, except for self-esteem item 7 (*In general, I am inclined to think of me as a failure*). Wherein, although there are differences, they are not large enough to be considered statistically significant.

**Table 5. Statistical analysis of all items. Wilcoxon and *p*-value contrast**

VARIABLES	PRE		POST		DIFF.	CONTRAST	
	Mean	Standard deviation	Mean	Standard deviation		Diff.	Wilcoxon
EFI1	2.85	0.559	3.21	0.656	-0.36	-5.257	0.000
EFI2	3.15	0.587	3.50	0.564	-0.35	-5.245	0.000
EFI3	3.05	0.651	3.37	0.644	-0.32	-4.906	0.000
EFI4	2.97	0.652	3.35	0.665	-0.38	-5.139	0.000
EFI5	3.16	0.645	3.48	0.619	-0.32	-4.804	0.000
EFI6	3.02	0.724	3.26	0.745	-0.24	-3.241	0.001
EFI7	3.20	0.697	3.44	0.642	-0.24	-3.788	0.000
EFI8	3.23	0.570	3.50	0.578	-0.27	-4.262	0.000
EFI9	3.06	0.631	3.42	0.558	-0.36	-5.117	0.000
EFI10	3.09	0.724	3.47	0.603	-0.38	-5.138	0.000
EST1	3.02	0.794	3.41	0.639	-0.39	-5.573	0.000
EST2	3.06	0.705	3.52	0.619	-0.46	-6.646	0.000
EST3	3.09	0.627	3.40	0.539	-0.31	-5.063	0.000
EST4	3.04	0.740	3.40	0.686	-0.36	-5.047	0.000
EST5	3.03	0.735	3.23	0.755	-0.20	-2.688	0.007
EST6	2.56	0.951	2.86	1.051	-0.30	-3.321	0.001
EST7	2.68	1.147	2.79	1.230	-0.11	-1.771	0.077
EST8	2.62	1.028	2.86	1.089	-0.24	-3.213	0.001
EST9	2.57	1.056	2.87	1.187	-0.30	-4.226	0.000
EST10	2.68	1.119	2.93	1.158	-0.25	-2.736	0.006

As Table 5 shows, all self-efficacy items present statistically significant differences, indicating that participants improved in all cases following the activity. Regarding self-esteem, all the items were enhanced due to the activity. These differences were

also statistically significant, except for item 7; despite the improvement, the difference was statistically significant at 10% and not at 5%.

In Table 6, self-efficacy and self-esteem are analyzed in general terms and factors. For this purpose, the average of the items comprising these two variables was calculated tanto antes del programa como después the internal reliability of self-efficacy before and after the programme being  $\alpha=0.703$  and  $\alpha=0.807$  and of self-esteem before and after the programme being  $\alpha=0.672$  and  $\alpha=0.779$  (Cronbach, 1951)). Therefore, the mean is used as the factor score in each case, which is very common in the social sciences (Sousa *et al.*, 2021), i.e. the mean of the 10 items is averaged for each variable before and after the programme, with a minimum score of 1 and a maximum score of 4 for each variable. It can be observed that both self-efficacy and self-esteem have improved, and their differences are statistically significant.

Next, a two-factor analysis of variance (gender and time) with two dependent variables (self-efficacy and self-esteem) is performed; and in addition the interaction between the two independent factors is evaluated. First, we will perform a descriptive summary of each dependent variable as a function of each combination of each factor.

**Table 6. Descriptive statistical analysis of self-efficacy and self-esteem. Wilcoxon and p-value contrast**

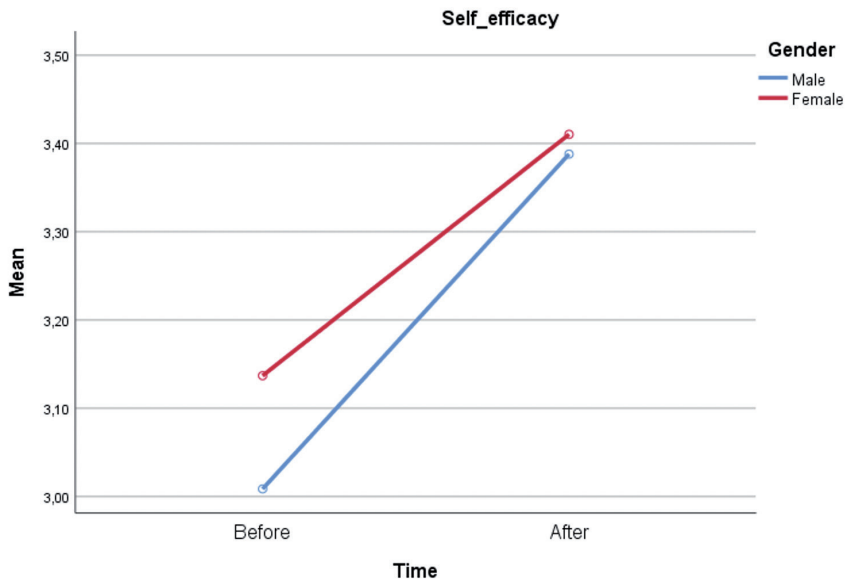
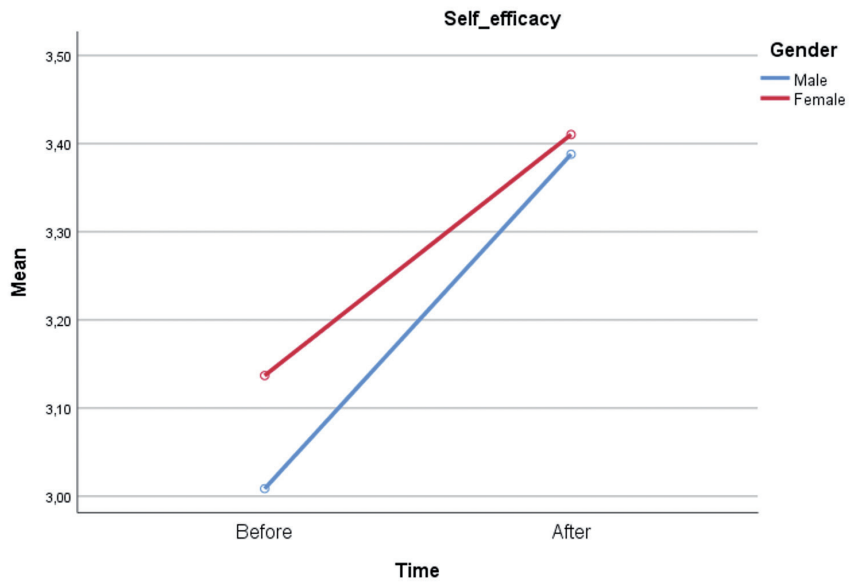
VARIABLES	PRE		POST		DIFF.	CONTRASTE	
	Mean	Standard deviation	Mean	Standard deviation	Dif.	Wilcoxon	p
Self-efficacy	3.076	0.337	3.400	0.380	-0.324	-7.201	0.000
- Male	3.009	0.282	3.388	0.320	-0.379	-5.292	0.000
- Female	3.137	0.371	3.410	0.429	-0.273	-4.852	0.000
Self-esteem	2.835	0.457	3.126	0.580	-0.291	-7.103	0.000
- Male	2.914	0.459	3.270	0.484	-0.356	-5.583	0.000
- Female	2.766	0.448	2.998	0.555	-0.232	-4.414	0.000

Table 6 shows that self-efficacy and self-esteem show statistically significant differences, demonstrating that outdoor training activity improves these two variables.

Graphically we can see how each dependent variable is presented as a function of gender and time (Figure 1).



Figure 1. Outdoor training activity by gender and time



In the following Table 7, the significance of the different effects of the multi-way analysis of variance is analysed. A MANOVA analysis was performed with the main objective of studying the interaction.

**Table 7. MANOVA analysis**

	VALUE (PILLAI'S TRACE)	<i>F</i>	<i>p</i>	<i>df</i>	<i>error df</i>
<i>Intersection</i>	0.990	12.205,020	0.000	2	241
- <i>Self-efficacy</i>		20.040,918	0.000	1	
- <i>Self-esteem</i>		9.149,397	0.000	1	
<i>Gender</i>	0.066	8.518	0.000	2	241
- <i>Self-efficacy</i>		2.716	0.101	1	
- <i>Self-esteem</i>		11.237	0.001	1	
<i>Time</i>	0.203	30.644	0.000	2	241
- <i>Self-efficacy</i>		50.958	0.000	1	
- <i>Self-esteem</i>		22.164	0.000	1	
<i>Gender*Time</i>	0.008	0.954	0.387	2	241
- <i>Self-efficacy</i>		1.342	0.248	1	
- <i>Self-esteem</i>		0.977	0.324	1	

Design: Intersection + Gender + Time + Gender\*Time

Dependent variables: Self-efficacy and self-esteem.

This Table 7 shows how gender ( $p = 0.000$  less than 0.05) suggests that there is a significant difference between the levels of the gender factor with respect to each of the dependent variables, self-efficacy and self-esteem. This implies that the mean of each dependent variable differs according to gender. As for time ( $p = 0.000$  less than 0.05), such a low p-value for the time factor indicates that there are significant differences between the levels of this factor with self-efficacy and self-esteem. As for the gender\*time interaction ( $p = 0.0387$  greater than 0.05) implies that there is no empirical evidence to affirm that the relationship between gender and each of the dependent variables, self-efficacy and self-esteem, changes at different levels of the time factor (or vice versa). This means that the way self-efficacy and self-esteem change over time is similar for men and women. That is, there is no significant interaction between the factors gender and time in their effect on each dependent variable.

However, generalized self-efficacy increased considerably more than self-esteem. Therefore, it can be said that outdoor training programs foster socio-emotional competences and, more specifically, generalized self-efficacy and self-esteem, and to a greater extent, generalized self-efficacy.

Figure 2 shows the effects of the outdoor training program on the selected variables.

**Figure 2. Outdoor training activity analysis**

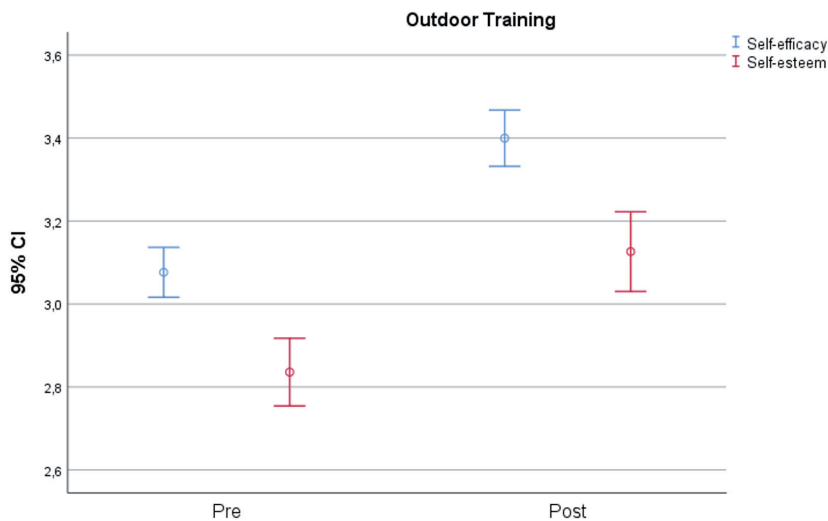


Figure 2 shows that self-efficacy and self-esteem values in “pr” are lower than in “pos,” In the analysis, both the mean of each item and the confidence interval at 95% are observed. Similarly, in both cases, the upper limit of the “pr” does not reach the lower limit of “pos,” which visually shows significant differences between the pre and post regarding self-efficacy and self-esteem.

## DISCUSSION

This study evaluated the effectiveness of an experiential training program in developing generalized self-efficacy and self-esteem among university students. The results show a positive effect of the program on self-efficacy and self-esteem. This is based on statistically significant differences before and after the program. Thus, it is essential to have such programs in the university environment to improve

these constructs. Furthermore, in the face of “aspects exacerbated by the COVID pandemic”, for example, emotional aspects such as fear, stress, and uncertainty in academic situations (Morales, 2021), the need to evaluate the levels of self-esteem that can correlate negatively with the daily stress perceived by students is justified (Ancer *et al.*, 2011; Morales-Rodríguez, 2017b), as well as the levels of self-efficacy that can affect the teaching/learning processes and the degree of satisfaction of students in the university environment.

Notably, programs, proposals, actions, and interventions to improve self-concept, self-efficacy, and self-esteem in university education are necessary and beneficial (García & Musitu, 1993; Gómez-Peresmitré *et al.*, 2019; Morales-Rodríguez, 2017a; Pichardo & Amezcua, 2012; Vicente, 2016). However, to the best of our knowledge, there are still no programs specifically aimed at improving self-efficacy and self-esteem. In particular, even less so with innovative methodologies such as those applied in this program, which impact students, the real protagonists of the teaching and learning process.

There are consolidated theoretical references, such as Piaget’s models of cognitive constructivism (2001), Bandura’s socio-cognitive theory (1987), and Vygotsky’s sociocultural constructivism (1979), to implement this intervention program. These models are compatible with the active methodology used in this program because they operate from the same interactive, dynamic, and cooperative perspective. Piaget, in particular, defends learning in the context of experimentation, that is, learning by doing; Bandura supports the social behavioral and cognitive model, working from the individual’s expectations, beliefs, attitudes, and behaviors; Vygotsky emphasizes learning from interaction in the social environment, either with the context or among peers. All of these theories are used either directly or indirectly in our OT program.

It can be argued that self-esteem is a complex construct affecting all areas of individuals’ lives. Specifically, because these feelings and thoughts can influence the degree to which we accept ourselves, how we relate to others, and how we respond to what happens to us in everyday life (Arancibia *et al.*, 2008; Morales-Rodríguez, 2017a). They can also influence the learning process and academic performance (Castejón & Miñano, 2010; Ortega & Sánchez-Queija, 2016; Tafarodi & Vu, 1997; Vicente, 2016), including the degree of adjustment, psychopathology, or adaptation (Baumeister *et al.*, 1996; Cava *et al.*, 2006; Morales-Rodríguez, 2017a; Morales-Rodríguez, 2017b) and emotional intelligence (Matalinares Calvet *et al.*, 2005).

Simultaneously, many factors can influence self-esteem, such as interpersonal relationships in the workplace (Navarro *et al.*, 2006), perfectionism that predominates among university students (Helguera & Oros, 2018), and the style

of family and educational socialization experienced by each person (Lara *et al.*, 1993). Therefore, it is likely that the impact of this type of program on the improvement of the self-esteem construct is less noticeable than in the case of the improvement of self-efficacy. It may be more evident that individuals indicate that improvements are achieved with this program, at least in certain specific tasks, albeit at the level of perceived self-efficacy in coping with specific academic and work-related tasks.

Concerning the possible reasons for the success of the program, it should be noted that the real protagonists of the teaching/learning process, the students, have benefited from this active methodology and have improved their teaching/learning process.

From a reflective model perspective, the program has been an effective tool for the awareness of self and others. It is a space for emotional expression and the development of personal resources in a natural environment to improve well-being and classroom climate. Debriefs, according to the statements of the participants and interviews carried out with them in the meetings, have enabled active listening, awareness of the most appropriate problem-solving and emotional regulation strategies, effective interpersonal communication, and feedback on the degree of development or acquisition of skills such as those related to group work and better self-knowledge of oneself and the environment. For example, one participant said that these activities “have helped him get out of his comfort zone and improve his emotional expression and interactions with the rest of the group”; and another person indicated that “she was grateful for participating in these activities that help to get to know themselves and others better, to be more assertive in communication and to learn to work in a group more effectively”.

The program activities, according to the statements and impressions of the participants themselves, help participating students improve their social and emotional skills. According to the emotional competence model of Bisquerra and Pérez-Escoda (2007), these skills are part of a positive pool of resources and personal dimensions of the individual that should be enhanced, such as self-efficacy, self-esteem, and resilience. Another recent study (Martínez-Pérez *et al.*, 2023) demonstrated the significance of perceived self-efficacy in university students in relation to other social and emotional skills important for academic performance.

This type of outdoor activity motivated the students and helped to create a welcoming environment in which they felt more heard and supported by their teachers. According to Tomás *et al.* (2023), these activities that contribute to students' perceptions of more support and motivation from teachers are associated with a higher level of academic satisfaction among students.

These program activities attempt to contribute to the integral development of the personality and are aimed at the construction of the person rather than just the acquisition of scientific-technical knowledge. There is a legislative framework in place that promotes competency development from a holistic perspective.

Socioemotional education and diversity awareness, as exemplified by the activities proposed in this program, are considered congruent with the objectives set by the European Union and the United Nations Educational, Scientific and Cultural Organization (UNESCO) for the decade 2020-2030 (Mundaca & Carro, 2021), which emphasize the development of these types of competencies. However, further research into the impact of this type of program in the university setting is still required.

### *Limitations*

One of the limitations of this study is that it relied on self-reported data, which could have been completed with information from other, more qualitative instruments, such as in-depth interviews. These would have allowed for even more individualized attention to students who needed it most to improve the variables studied. However, a longitudinal design is required to study the evolution of the variables at different educational levels. It would also be necessary to continue applying this program to more universities to increase the generalizability of the results and validate the program's efficacy. Further, it would be useful to compare results on these variables and their effects in the current situation of new normality after the academic and social impact caused by the pandemic and lockdown. Regarding the scope of the proposed research, it is worth noting that there is no control group or variables that could affect the results (notes received during treatment, for example) that have not been taken into account. Most participants were in emergent adulthood, and the sample was gender-balanced. Nonetheless, this study did not specifically explore the effect of relevant variables, such as age, sex, and socioeconomic status, on the program's impact. Cross-cultural studies are also considered necessary to compare the effectiveness of this program across cultures. Given the breadth of the concept, both generalized self-efficacy and esteem may or may not be reflected in academic study. Since this program will continue to be implemented, more qualitative and quantitative data will be obtained regarding academic performance and its influence on improving learning with the expansion of more specific instruments.

### *Future Lines of Research*

In future studies, it is necessary to continue studying the role of self-esteem and self-efficacy variables that can be increased with the application of this type of program in coping with daily stress, such as those related to academic problems and challenges at university. In this sense, previous research on self-esteem (Morales, 2017a) showed that, regarding coping with everyday stressful situations, some dimensions of the self-concept variable, such as academic self-concept, showed positive associations with productive or effective coping strategies such as information seeking and guidance, active coping, and positive attitude. However, in another study (Fernández-González *et al.*, 2015) in which the sample consisted of university students, the self-esteem variable alone did not have a significant effect on academic stress. The need to consider these variables in the design of future training and intervention programs is evident. Nevertheless, more studies are required to deepen further the operational definitions of these constructs and the relationships that self-esteem and self-efficacy variables may have with other psychoeducational variables. Specifically, for which this outdoor training methodology is used, such as resilience, coping strategies for daily stress, empathy, and self-perceived emotional intelligence.

### CONCLUSIONS

The results showed that the experiential training program using the outdoor training methodology positively affected the general self-efficacy and self-esteem of the participating students. Significant differences were found in this variable before and after participation in the training program. However, the effect on generalized self-efficacy is more effective than that on self-esteem. When the analysis was carried out according to gender, it was observed that before the program, there were no differences in self-efficacy or esteem between men and women. Conversely, once the activity was carried out, there was a more remarkable statistical improvement in self-esteem in men than in women. For instance, although both improved, boys improved more than girls. Regarding self-efficacy, both sexes improved, and the increase was not statistically different depending on sex.

This type of program, which uses this methodology to train competences and improve self-esteem and self-efficacy in the university environment, must be implemented to enable more effective strategies for coping with academic stress and improve future social and labor insertion and psychological well-being. Notably, students and teachers are delighted and consider participating in this program useful.

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