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Article

Improvement of the Learning Strategies of University Students through a Program Based on Service-Learning

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Abstract: Background: Currently, educational attainment has risen significantly among young people, causing changes in the labor market where skills have become more important. Thus, tertiary education has become an "essential vehicle" to develop high-level skills that would boost students' professional, social, and personal lives. Methods: The aim of the survey is to study the effects of an intervention program based on two methodologies, service-learning and peer mentoring, to enhance the learn-to-learn and social skills of undergraduate students. The sample was composed of 69 undergraduate students of four different degrees. The methodological design adopted was quasi-experimental pretest–posttest. The intervention consisted of 955 mentoring sessions (878 one-to-one and 77 in groups) among the undergraduate students and students in compulsory education. The undergraduate students participated as mentors. Before, they had three sessions of training. Weekly mentoring sessions were spread out during out-of-school time for 90 min each. Results: The results show a few statistically significant differences in favor of the posttest phase in strategies for the learning and social skills of the participants. Conclusions: Although the program did not obtain the expected results, these outcomes agree with the other studies that investigate intervention programs that use service-learning and peer mentoring methodologies.

Keywords: service-learning; mentoring; program; higher education; competences

1. Introduction

Currently, the European Commission [1] points out the need to provide young people with competencies that would enable them to enter the labor market successfully and participate actively in society. In fact, competency-based learning is vital for individual and societal development and progress across the whole educational system [2,3]. Thus, tertiary education is an "essential vehicle" to develop the high-level skills necessary to boost students' professional, social, and personal lives [1].

However, the data collected from Ministerio de Universidades [4], for example, reveal that the dropout rate in the first year of students who began in the 2016–2017 academic year was 21.8%, the rate of change of undergraduate studies was 8.7%, and the rates of suitability and graduation in undergraduate studies were 36.2% and 50.2%, respectively. These statistics, as well as the quality of the training they are receiving at the university, which affects the level of occupation reached by graduates—for example, 55.5% of the graduating students manage to obtain a position related to their degree once 4 years have passed [5,6]—indicate the need to propose reforms in the university environment, which include new strategies and tools to develop teaching–learning processes.

This change requires improving the development of skills, involving new environments, relationships between people, and structural support to manage these changing environments [7], as well as a change approach in terms of content and methodology [8] in order to adjust to the social changes of today. This development necessitates requirements, proposals, and resources such as [8]:

- Approach valid knowledge adapted to reality that prepares people to learn throughout life;
- Direct focus towards learning skills, attitudes, and values;
- Increase the value of the skills and abilities of each citizen;
- Build a new society for humanity that is dynamic and knowledge-based.

With these in mind, this study explores the effects of an intervention program based on two methodologies, in this case service-learning and peer mentoring, to enhance learn-to-learn and social skills of undergraduate students. Below, a summary of the study and the associated processes carried out are described. The research questions were:

- Does participation in the program based in service-learning and mentoring predict increased motivation, learning strategies, and social skills for undergraduate students?
- How is the use of alternative methodologies related to the acquisition of competencies of undergraduate students who actively participate in extracurricular activities?

1.1. Learning Strategies, Social Skills, and Alternative Methodologies

The demands of a globalized world have led to the reconceptualization of the teaching–learning process. This process of adapting to individual diversity and particular cognitive traits requires the educational system to enable its students to deploy multiple strategies and autonomous processes that allow them to successfully complete their academic tasks.

In that process, learning strategies play a relevant role. In the scientific literature, there are a variety of definitions. Monereo [9] (p. 24) defines them as "a set of actions that are carried out to obtain a learning objective". In this sense, the actions would correspond to a series of cognitive processes with which cognitive capacities and abilities would be identified, as well as techniques and methods for study. On the other hand, another author [10] defined them as intentional guides of action to put into practice those skills that establish the objectives of learning.

Likewise, Ferreiro [11] defined them as a sequence of cognitive and procedural operations to process and learn information meaningfully.

Thus, there are two major components: (a) they are something the learner does at the same time of learning, and (b) they are an aid to learning.

In the literature, there are different classifications on this subject [12–14], where it can be grouped into:

- Support: attention, setting targets, etc.;
- Elaboration: relating, etc.;
- Organization: classifying, categorizing, etc.;
- Memory: remembering, etc.;
- Problem-solving: solving different situations, etc.;
- Creativity: flexibility, fluency, etc.;
- Coding: identifying, etc.;
- Metacognitive: adjustment, supervision, evaluation, etc.

However, other studies indicate that for the effective development of student learning strategies, the moderating variable of teaching strategy has to be considered [15]. This is defined as [16] the set of decisions by the teacher in order to guide teaching and promote student learning. In this sense, this variable affects motivation, adequate knowledge acquisition, coding, information retrieval, and data processing [17], which can have negative effects if instruction is not provided on how to use learning strategies in academic tasks.

All types of learning are constructive cognitive activities, conditioned by internal, e.g., social skills understood as interpersonal behavior, which consists of a set of learned acting skills [18,19] and external variables (e.g., the teacher's teaching strategies, motivation, and alternative methodologies) that affect the adequate acquisition and development of learn-to-learn competencies.

According to the external variable of alternative methodologies, service-learning has synergistic effects in the positive promotion of social and emotional growth, as well as in the improvement in individuals' careers and academic results. This type of methodology reinforces a dynamic interrelation between social, emotional, professional, and academic capacities with learning, thus impacting the learning strategies and motivation of students [20]. Moreover, the mentoring program in Trepainer-Streert's [21] studies showed that participating mentors increased their public speaking skills, leadership and communication skills, teamwork skills, and level of community involvement in similar terms to the results of the work of Schmidt et al. [22], who also identified improvements in the development of positive relationships, the willingness of the mentor, and the value placed on participation in the community.

In short, the exploration of the effects of these variables has been conducted in other studies [23–25] where the development of both methodologies offered improvements in the participants.

1.2. Learn-to-Learn Competences

Tertiary education is one of the fundamental pillars of society and maintains a close link with socioeconomic indicators. However, universities have received numerous criticisms for their inability to offer their graduates adequate training that is adapted to the transformations that society has undergone—and, therefore, cannot responded adequately to the new needs of competitive markets, etc.—which has even generated a political problem [26]. This reality has led the political and academic authorities to consider the reasons why higher education, which previously seemed to be the key to obtaining a qualified and secure job due to its capacity to transform and promote change and progress in society, does not respond adequately to the new needs of society and competitive markets [27]. In this line, the teaching model of higher education is seriously questioned since the incorporation of graduates into society and the labor market does not seem to be resolved with the acquisition of greater academic training, but rather the acquisition of other key skills and competences is necessary.

Rychen and Hersh [28] define the term competence as the ability to respond to demands that are considered complex and to be able to perform tasks properly, which implies the acquisition of practical skills, knowledge, motivation, ethical values, attitudes, emotions, and other social and behavioral components that interrelate between them to achieve effective action.

The acquisition of competences will require the use of different methodological and material resources with personalized tutorial attention applied to specific contexts, focusing on situations that students have to face in daily and professional life so that they have to put into practice their knowledge and skills to give an adequate response [29]. Thus, a methodological approach aimed at the acquisition of competences implies functionality and relevance of the contents and application of what is learned.

According to what has been described above in terms of the acquisition and development of learn-to-learn competences, the use of the service-learning and mentoring methodologies in the practices of students is highly recommended due to the advantages it presents, such as those found in different investigations [30–32]: applicability in real contexts; acquisition of knowledge about real situations; adjustment of attitudes and behaviors for the professional environment and acquisition of the social skills inherent to it; encouraged autonomy, creativity, and social responsibility; and increased learning strategies.

1.3. Huelva Educa Program: Service-Learning and Mentoring Methodologies

The current universities are in permanent transformation where the elaboration and transmission of knowledge requires a special sensitivity to social changes. The Horizon Report 2019 [33] highlighted, as essential educational proposals in the short term for higher education, the development of learning in different scenarios as well as redesigning learning

spaces that promote authentic learning. Thus, the teaching–learning process in higher education needs to reduce the latent spaces between academia and the needs of society.

In this sense, educational quality must consider that an optimal education must include excellent scientific knowledge, training in generic and specific skills necessary for good performance in the world of work, and participatory and supportive citizenship [34], and it should favor alternative innovative educational methodologies with which to create real practical experiences where students not only contribute, but also build their knowledge [35] while developing professionalizing skills.

This competency-based training requires a transformation of universities with respect to the structure of curricula, duration, as well as the roles of teachers and students conferred as active agents in the learning process [36].

Competency-based learning is understood as the relationship between knowledge together with personal skills and qualities within the context and putting them into action in front of a given task [34].

This implies the need for programming that includes experiences in real scenarios supervised by teachers that give feedback and facilitate reflection. It is essential that for knowledge to be produced, it must be developed in a real context and should be socially useful (mode 2 of knowledge production) [37].

In this scenario, Huelva Educa Program (HEP) was born based on two innovative methodologies, service-learning and mentoring, where undergraduate students, after training as mentors during an academic year, developed weekly mentoring sessions for individual or group interventions for compulsory education students to help them improve their academic performance, receive personal and professional guidance, as well as manage their leisure time.

Service-learning is considered one of the most suitable methodological ways to start from real and different contexts, allowing the development of competencies from the active participation of students in real experiences associated with community service [38]. Therefore, they become promoters of their learning and producers of knowledge by getting directly involved with those to whom they offer a service, adapting to their needs and to a reality totally different from the one they have in the classroom.

Service-learning can be identified as a methodology that facilitates the development of competencies in democratic and plural societies based on the relationship between the curricular contents of each discipline and service to the community [39–42]. In addition, it favors a creative and civic culture in higher education, actively involving students in the development of their knowledge and in improving real situations in their environment [43]. Focusing on tertiary education, Bringle et al. [44] considered service-learning as "a course-based, credit-bearing educational experience in which students participate in an organized service activity that meets identified community needs, and reflect on the service activity in such a way as to gain further understanding of course content, a broader appreciation of the discipline, and an enhanced sense of personal values and civic responsibility" (p. 38).

On the other hand, the mentoring methodology is characterized by a one-on-one relationship between a mentor and mentee to help maximize the benefit of the mentee [45]. Three distinct areas of mentoring scholarship exist [46]: (a) youth tutoring, which implies a relationship between an adult and a child or adolescent, where supportive relationships with adults are relevant to personal, cognitive, psychological and emotional growth; (b) academic tutoring, in which a faculty member imparts knowledge, support, and guidance to a student on academic (e.g., classroom performance) and non-academic (e.g., identity issues) performance (e.g., this program); and (c) workplace mentoring, which occurs in a work environment with the idea of achieving the greatest personal and professional growth of the mentee. The programs that incorporate this type of methodology show great improvement, where their results demonstrate high levels of effectiveness, efficiency, and usefulness. Among the results of research based on service-learning and mentoring are that they [24,32,47] (a) increase commitment to learning, (b) enhance content attainment, (c) improve characteristics concerning personal development (e.g., self-concept, etc.),

(d) consolidate competencies, (e) stimulate reflection and critical thinking among students, and (f) favor a greater connection of classroom teaching with the needs of the environment.

This program was born from the need for undergraduate students to have a first field experience before their curricular practices with which to evaluate their competency level. The objective of this study is to determine the impact of HEP on the learning strategies of participating undergraduate students as mentors. In this sense, the hypotheses raised were (1) the mentor will improve in statistically significant terms their average direct scores obtained in motivation and learning strategies in the posttest phase after participating in the HEP, and (2) the mentor will increase in statistically significant terms their average direct scores obtained in assertion and social skills in the posttest phase after participation in the HEP.

2. Methods

2.1. Participants

The sample was composed of 69 undergraduate students with a mean age of 21.22 years (range between 18 and 34 years). Its distribution by degrees was (a) 13 of the Degree of Primary Education, (b) 28 of the Degree of Psychology, (c) 18 of the Degree of Social Education, and (d) 10 of the Degree of Social Work. By sex, 58 women (84.05%) and 11 men (15.95%) participated (Table 1).

Table 1. Academic information.

Academic Information	D. Primary Education		D. Psychology		D. Social Education		D. Social Work		Total	
	N	%	N	%	N	%	N	%	N	%
Total Courses	13	18.85	28	40.57	18	26.08	10	14.5	69	100
3	0	0.00	18	26.08	0	0.00	0	0.00	18	26.08
2	13	18.85	10	14.49	18	26.08	10	14.5	51	73.92

Source: Authors.

The sampling was non-probabilistic, of convenience, and underwent [48]: (a) execution of the dissemination plan, which included group sessions with undergraduate students where they were informed of the conditions and benefits of the program; in addition, they were asked to participate voluntarily, and the authorization of the Ethics Committee of the University of Granada was requested (150/CEIH/2016, 20 May 2016); (b) implementation of the recruitment scheme in which 117 students enrolled once they completed the participation protocols (mentor participation agreement, mentor information protocol, and standardized tests); and (c) selection of the participating students as mentors (N = 78), considering the following criteria: completing the mentors' agreement, protocol, and standardized questionnaires; demonstrating value; having enough time to implement the mentoring sessions; attending the 3 sessions of the training course; and, finally, carrying out the practical activities of this training. However, at the beginning of the first mentoring session, several of the initial 79 mentors indicated that for various reasons they could not participate, leaving the final sample at 69 participants (Table 2).

Table 2. Attrition result.

Academic Information	Register	Enrollment	Training Access	Training Assistance	Initial Sample	Final Sample
Mentors						
D. Primary Education	22	22	13	13	13	13
D. Psychology	66	45	37	35	35	28
D. Social Education	42	34	27	26	20	18
D. Social Work	16	16	11	11	11	10
Total	146	117	88	85	79	69

Source: Authors.

2.2. Materials

The MSLQ [49] uses the Likert scale and has 81 items grouped into 15 subscales and 5 components: (a) cognitive and metacognitive strategies; (b) resource regulation strategies; (c) affective motivation; (d) motivation expectations; and (e) value motivation. It has 7 response alternatives. This instrument was chosen because it presents adequate reliability (Cronbach's alpha score of 0.82 for motivation components, 0.89 for learning strategy components, and score between 0.48 and 0.86 points for the subscales) and validity (factor analysis that demonstrates its factorial structure).

The Social Skills Scale (EHS) [50] contains 33 items grouped into 6 scales. The purpose of this scale was to evaluate the social skills of undergraduate students due to its high reliability (Alpha model: 0.89 points) and acceptable validity.

A Mentor Notebook was used for the registration of mentoring sessions. It was developed ad hoc according to other materials [47,51,52] and used during the mentoring' sessions and the follow-up plan of the program.

The mentor follow-up questionnaires had a scale composed of 25 estimation items from 1 to 5 (1: strongly disagree–5: strongly agree) and 11 open-ended responses, grouped into 10 areas: (a) identification data of the mentor and students, (b) number of mentoring sessions held, cancelled, and not presented at, (c) development of the mentoring sessions, (d) contents of the mentoring sessions, (e) behavior as a mentor, (f) materials, (g) behavior of the students, (h) global assessment of the mentoring sessions carried out, (i) aspects to be highlighted, and (j) other annotations. It was prepared considering the suggestions of other works [53,54]. Its objective was to locate possible deviations that occurred during the mentoring sessions from the perspective of undergraduate students (specific follow-up measure).

2.3. Design and Procedure

A quasi-experimental pretest–posttest design was adopted for both hypotheses [55]. Regarding the procedure, once the needs analysis was carried out, after designing and planning the program, the sampling described above was developed. Once the sample was selected, in the intervention plan it proceeded to carrying out the first activity was the training course for undergraduate students who would participate as mentors, in which those contents that help improve the level of competencies of the subjects participating in service-learning and mentoring activities were worked on [44,56,57].

There were 4 three-hour sessions covering the following topics: (a) first session: justification of the program and work materials (e.g., Mentor Notebook), (b) second session: explanations of the telephone call script to arrange a schedule for the mentoring session, the structure of questions for the first meeting with the participating compulsory education students (called mentees) and their families, and DAFO analysis with which to specify a needs assessment; and (c) third and fourth sessions: training in those activities that would be developed during the sessions of a co-curricular nature (e.g., reinforcement in instrumental areas, instruction in learning strategies, vocational or professional guidance activities, leisure and free time management, etc.) and follow-up measures. Once this activity was

completed, the pairings between mentors and mentees were carried out considering their time availabilities and their equivalence in life experience and interests [57].

Continuing with the intervention plan, the second activity consisted of the development of mentoring sessions, which extended from the first quarter of the school year to the third term as an extracurricular activity with a frequency of 1 day a week and an approximate duration of 90 min in the places and times set from the program. A total of 955 mentoring sessions were conducted, with an average of 13.84 sessions ($SD = 2.51$) and a range of between 9 and 18 mentoring sessions per person; 878 sessions were of individual nature ($M = 12.72$; $SD = 2.90$; range between 4 and 18) and 77 sessions were group ($M = 1.11$; $SD = 1.66$; range between 0 and 10). However, a total of 184 mentoring sessions were cancelled, with an average of 2.66 mentoring sessions per person ($SD = 0.94$; range between 1 and 5); 132 were individual ($M = 1.91$; $SD = 0.78$; range between 1 and 4), and 52 were group sessions ($M = 0.75$; $SD = 0.73$; range between 0 and 3). On the other hand, a total of 37 mentoring sessions were not presented, with an average of 0.53 mentoring sessions per person ($M = 0.71$; range between 0 and 3), 27 at the individual level ($M = 0.39$; $SD = 0.64$; range between 0 and 3) and 10 at the group level ($M = 0.14$; $SD = 0.35$; range between 0 and 1). The contents that were worked on during the mentoring sessions (Mentor Notebook) were appropriate to the needs detected (this was initially collected by the information provided by the families and the teacher-tutors and information collected by the mentors during the presentation session). However, the sessions contained content recommended by the specialized literature [58]: (a) school performance (e.g., school reinforcement, etc.); (b) personal guidance (e.g., social skills, etc.); (c) vocational–career guidance (e.g., transition of educational stage, etc.); and (d) leisure and free time management (e.g., conflict resolution, etc.).

Meanwhile, the follow-up plan was carried out in order to monitor possible deviations (mentor follow-up questionnaires). It consisted of 3 group follow-up sessions between those responsible for the program and the mentors after carrying out sessions 2, 7, and 12 (Table 3). In these sessions, the development of the sessions was assessed based on the comments of the mentors and the analysis of their notebooks to later offer them the appropriate recommendations and analyze the objectives and tasks to work on in their next sessions. In addition, a fourth group follow-up was carried out when the mentoring sessions ended where they presented their general assessment of the sessions, their impressions about the program, or suggestions for future editions.

Table 3. Number of total sessions field, canceled and not presented.

Mentoring Sessions	N° Sessions		*M*		SD	
	Individual	Group	Individual	Group	Individual	Group
Total Sessions Field	878	77	12.72	1.11	2.90	1.66
Follow-up 1	138	0	2.00	0.00	0.12	0.00
Follow-up 2	440	43	6.37	0.62	1.71	0.76
Follow-up 3	300	34	4.34	0.47	1.33	1.05
Total Sessions Canceled	132	52	1.91	0.75	0.78	0.73
Follow-up 1	1	0	0.01	0.00	0.12	0.00
Follow-up 2	94	24	1.36	0.34	0.64	0.47
Follow-up 3	37	28	0.53	0.40	0.53	0.52
Total Sessions Not Presented	27	10	0.39	0.14	0.64	0.35
Follow-up 1	2	0	0.02	0.00	0.16	0.00
Follow-up 2	13	2	0.18	0.02	0.39	0.16
Follow-up 3	12	8	0.17	0.11	0.41	0.32

* Source: Authors.

Moreover, note that only 4 pairs accrued 18 mentoring sessions (Table 4).

Table 4. Percentage frequencies on the number of mentoring sessions carried out after the end of the program.

Variable	N° Sessions Developed for Pairs	%
9 mentoring sessions	2	2.90
10 mentoring sessions	6	8.69
11 mentoring sessions	10	14.49
12 mentoring sessions	4	5.80
13 mentoring sessions	5	7.25
14 mentoring sessions	11	15.94
15 mentoring sessions	11	15.94
16 mentoring sessions	9	13.04
17 mentoring sessions	7	10.15
18 mentoring sessions	4	5.80
Mentoring sessions total	69	100.00

Source: Authors.

With the outcome evaluation plan, pretest and/or posttest measurements were taken of the dependent variables to subsequently established the presence of both statistically and educationally significant effects [59].

2.4. Data Analysis

The data were analyzed using the Statistical Package for the Social Sciences (SPSS) for Windows, version 24.0, performing the following statistical analyses: (a) Kolmogorov–Smirnorv test to check the normality of the distribution of sample scores in motivation, learning strategies, and social skills; (b) *t*-test for related samples; (c) non-parametric test of Wilcoxon ranges; (d) Benjamini–Yekutieli; and (e) Cohen's *d*-value.

3. Results

3.1. Motivation and Learning Strategies

The results found compared the pretest–posttest phases of the motivation and learning strategies of the mentors (hypothesis 1), and statistically significant differences can be seen in the subscales of Extrinsic Orientation ($z = -2.36$; $p < 0.05$), Anxiety ($z = -3.57$; $p < 0.001$), Critical Thinking ($z = -3.59$; $p < 0.001$), Study Time and Environment ($z = -2.05$; $p < 0.05$), Metacognitive Self-Regulation ($z = -3.53$; $p < 0.001$), Regulation of Effort ($z = -4.23$; $p < 0.001$), and Application for Aid ($z = -2.98$; $p < 0.01$). Likewise, Cohen's *d*-value ranged from 0.10 to 0.66 points (Table 5).

Table 5. Intragroup comparisons on motivation and learning strategies of mentors in the pretest and posttest phases.

Subscale/Phase	N	M	SD	z	Sig.	p-adj.	*d*
Intrinsic Orientation							
Pre	69	5.20	1.01	1.65	0.09	0.16875	−0.21
Post		4.99	0.98				
Extrinsic Orientation							
Pre	69	4.90	1.12	−2.36	0.01 *	0.025	0.28
Post		5.22	1.20				
Task Value							
Pre	69	5.47	0.85	−1.60	0.10	0.16666667	0.19
Post		5.63	0.86				

Table 5. *Cont.*

Subscale/Phase	N	M	SD	z	Sig.	p-adj.	*d*
Control over Beliefs							
Pre	69	4.82	0.98	−1.44	0.15	0.225	0.17
Post		4.99	0.96				
Self-efficacy							
Pre	69	5.33	0.94	−1.06	0.28	0.3	0.15
Post		5.46	0.75				
Anxiety							
Pre	69	3.32	1.36	−3.57	0.00 ***	0	0.36
Post		3.84	1.49				
Repetition and Rehearsal							
Pre	69	4.64	1.28	−1.40	0.16	0.21818182	0.22
Post		4.90	1.09				
Elaboration							
Pre	69	5.37	0.97	−1.19	0.23	0.2875	0.13
Post		5.49	0.79				
Organization							
Pre	69	5.07	1.21	−0.84	0.39	0.39	0.10
Post		5.19	1.19				
Critical Thinking							
Pre	69	4.16	1.13	−3.59	0.00 ***	0	0.43
Post		4.64	1.12				
Metacognitive Self-Regulation							
Pre	69	4.59	0.69	−3.53	0.00 ***	0	0.43
Post		4.89	0.69				
Study Time and Environment							
Pre	69	4.56	0.61	−2.05	0.04 *	0.08571429	0.35
Post		4.77	0.60				
Regulation of Effort							
Pre	69	3.54	0.60	−4.23	0.00 ***	0	0.66
Post		3.99	0.76				
Application for Aid							
Pre	69	4.50	0.91	−2.98	0.00 **	0	0.40
Post		4.87	0.93				
Peer Learning							
Pre	69	4.67	1.20	−1.18	0.23	0.26538462	0.17
Post		4.87	1.15				

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

3.2. Assertion and Social Skills

Regarding hypothesis 2, comparisons in the pretest–posttest phases of the assertion and social skills of the mentors (hypothesis 2) show statistically significant differences in the subscale start positive interactions with the opposite sex ($z = −2.82$; $p < 0.01$) and in the overall direct score ($z = −2.28$; $p < 0.05$). For its part, Cohen's *d*-value ranged between −0.05 and 0.36 points (Table 6).

Table 6. Intragroup comparison regarding the assertion and social skills of mentors in the pretest and posttest phases.

Subscale/Phase	N	M	SD	z	Sig.	p-adj.	d
Self-expression in social situations							
Pre	69	25.05	3.97	−1.35	0.17	0.238	−0.09
Post		24.63	4.47				
Defense of one's rights as a consumer							
Pre	69	14.31	3.00	−1.84	0.06	0.14	0.20
Post		14.92	2.89				
Expression of anger or disagreement							
Pre	69	12.13	2.45	−1.34	0.18	0.21	0.13
Post		12.47	2.58				
Say no and cut interactions							
Pre	69	16.44	3.96	−1.44	0.14	0.245	0.17
Post		17.13	3.92				
Make requests							
Pre	69	14.08	2.68	−0.39	0.69	0.69	−0.05
Post		13.94	2.66				
Start positive interactions with the opposite sex							
Pre	69	12.88	3.20	−2.82	0.00 **	0	0.36
Post		14.04	3.23				
Overall direct score							
Pre	69	94.60	14.36	−2.28	0.02 *	0.07	0.15
Post		96.72	14.51				

$* p < 0.05; ** p < 0.01$.

3.3. Acquisition of Competencies during HEP

Finally, the comparative analysis of the evolution followed by the average assessments of the mentors with respect to the development of the program—that is, of the results derived from the follow-up questionnaires that were administered in follow-ups 2 and 4—it can be seen that the mentors assigned higher global mean grades to the different areas of the questionnaire in follow-up 4 than those in follow-up 2 (Figure 1).
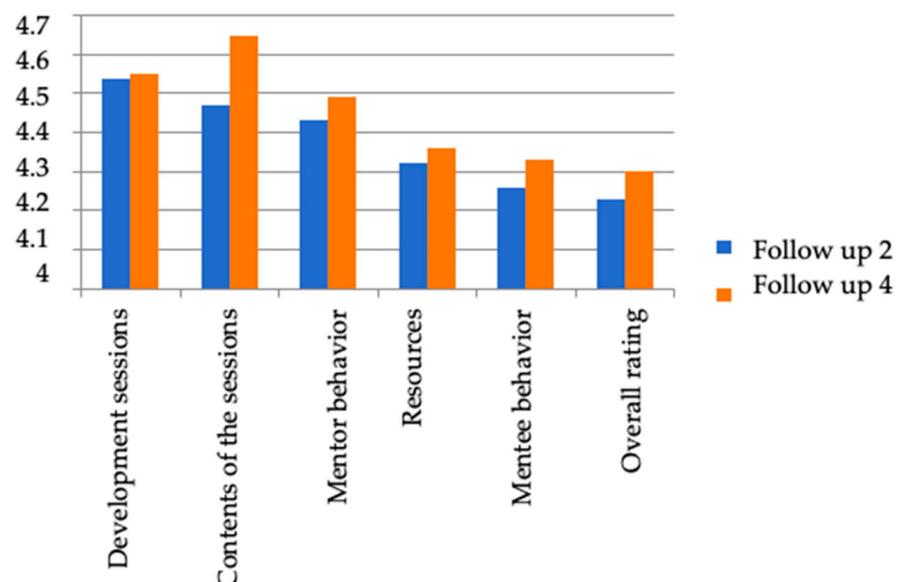

Figure 1. Evolution of overall mentor scores.

4. Discussion

The goal of this investigation was to know the impact of HEP on the learning strategies and social skills among undergraduate students. According to the results obtained, it can first be concluded that there were statistically significant differences between the pretest and posttest scores obtained by the participating undergraduate students in half of the subscales of the MSLQ [49], which allows us to partially accept hypothesis 1. However, with respect to hypothesis 2, as there were few subscales of the EHS [50] with significant differences in the posttest phase compared to the pretest phase, the hypothesis is rejected.

Although the participation in the HEP had a positive effect, it was not as expected as in other studies [49,60]. The results obtained seem to indicate that the improvement effects after participation in these types of programs entail variables such as learning strategies [47,61,62] or social skills [25,32,47,61,63–66].

According to the objectives set as exploratory, as proposed in this type of design [55], the results can be considered positive. The recommendations of experts in methodology and statistical analysis suggest that the results of this type of research should also be interpreted according to the size of the effect in order to identify its practical significance [61,62,67,68]. These results show that a hypothetical member of the sample could achieve scores higher than 74.5% in the posttest phase compared to the pretest phase. In the rest of the subscales, the results of the effect size were not very high, but as Ledesma et al. [69] states, a change greater than 0.1 points can amount to a fairly significant increase, especially if it can be seen uniformly in all members of the subsamples as in this work and other studies [70] where moderate effect size is common.

In addition, other studies indicates that effect sizes around 0.2 points have greater practical importance when based on outcome measures that can be considered more difficult to modify, as in the case of learning strategies [17] or social skills [71]. Therefore, the results obtained appear to confirm the possible effects of improvement that participation in this type of program entails for the variables of learning strategies and social skills.

Therefore, by using other statistics, we are avoiding a frequent error in educational research studies considered as a "Type II error" that affects the validity of statistical conclusions, and that consists of not detecting the effect of the intervention when it really exists [72], as has been done in other studies [65,66,73,74].

On the other hand, these results may be linked to the difficulties or limitations related to the type of research design used (pretest–posttest measures in a single group), being complex to detect what the real effect of the intervention was. However, if aspects such as the differences found in the contents developed in the mentoring sessions are considered, or the multicausal nature of the dependent variable itself, they could be aspects that affected obtaining better results.

Motivation and learning strategies (e.g., organization, critical thinking, etc.) are related to other key competences aimed at achieving lifelong learning (e.g., competence in active citizenship, entrepreneurial competence, etc.) [75], which may have generated improvements in the learn-to-learn competence of undergraduate students after their participation, in addition to stimulating the development of other key competences (e.g., digital and technology competences). With respect to the intrinsic motivation (e.g., goals of intrinsic orientation, task value, and control of learning beliefs) of the participants, the studies of Conway et al. [76] indicate their relationship with the use of cognitive strategies and self-regulation, which generate a greater motivation to learn. In this case, this relationship was weaker than in other studies [47], but if there had been a high significance in metacognitive self-regulation, with which this type of quasi-professional experiences lives, the problems and difficulties they have faced and resolved and their participation in processes related to decision-making, monitoring, and data evaluation recording, among other aspects, would generate benefits in their motivational development and increases in learning strategies as well as in their personal and social aspects, as other studies indicate [77–79].

However, the wear and tear occurring in the intrinsic orientation must also be considered, which can be explained by the high perception of the level of competence that the mentors possessed in the pretest phase, subsequently leading to a readjustment in their beliefs after participating in the real situations raised from the HEP.

As for social skills, it is implied that the mentor's constant changes and adaptations to different situations, decision-making, greater commitment to their work, etc., could improve their social skills. However, these outcomes, likened with alternative studies [71,80], reveal a low level of self-expression skills in social situations and in making requests, with little progress observed in mentors in empathy, which leads to a deterioration in the skills of saying no and cutting interactions as well as expression of anger or disagreement. These results could be the result of a high perception about their own social skills in the pretest phase before participating in real environments, readjusting their perceptions in the posttest phase with respect to the mastery of these. Thus, participation in the HEP provided undergraduate students with a real context to readjust their knowledge and behaviors [30–32], helping them in the acquisition of learn-to-learn competences.

However, findings on program HEP's effectiveness should be interpreted with caution (i.e., potential effectiveness), considering the main limitations of the study such as the methodological design, number of participants, number of sessions, and lack of control group to compare results with, and the training in learning strategies and social skills offered by the mentor training course was scarce. In this line, although non-probability sampling has many limitations, it is useful, particularly when time, funding, and human resources are limited [81].

In short, the results obtained with this research work can be considered satisfactory, resembling the benefits revealed by research when participating in this type of program [46,47,56,60,82,83]. This study has contributed to understanding how this type of program helps students to know their competence level and to develop new learning strategies and social skills suitable for the resolution of different academic and professional situations.

However, a more in-depth analysis should be carried out to check if the variables are reflected in the academic and personal progress of the participating mentors, translating into an increase in their academic performance and satisfaction with their studies, as indicated by the specialized literature on service-learning and mentoring [77,78,84,85], as well as higher self-esteem [20,47,86,87], which is a construct necessary for adequate personal development, encouraging reflection and critical thinking, and an active and reflective role in the entire decision-making process [86]. For this, it would have been necessary to use other instruments to measure these variables (e.g., academic records of HEP mentors and a standardized test to measure self-esteem), as well as a control group with which to contrast these measures and give greater rigor to the work.

Due to these considerations, for future editions of the program, it would be convenient to introduce measures with which to improve the results obtained and reduce the possible presence of threats against the internal validity of the methodological design of intervention used, highlighting the need to:

- Redress the training course;
- Select a new design (quasi-experimental pretest–posttest) that includes a non-equivalent control group, while considering the possible ethical constraints that this entails (e.g., inappropriate use of available resources to meet increased demand);
- Introduce more demanding selection criteria in the fourth stage of sampling and greater rigidity in the criteria for permanence in the program as in other studies [65].
- Develop the same number of mentoring sessions, since 25% of this sample did not carry out more than 11 mentoring sessions, breaching some of the initially accepted conditions related to the number of canceled and/or non-presented sessions. In addition, the benefits of mentoring accumulate over time [20];
- Increase the number of follow-up sessions;
- Introduce other dependent variables that affect motivation and learning strategies, such as academic performance (e.g., comparison of the average grade per credit

enrolled, performance rate, and success and dropout of participating mentors after completing the HEP) [64,86,87].

- Incorporate this type of experience into the curriculum.

Although studies that address the relationship between A-S mentoring and learning strategies are scarce, this research is an example of a pedagogical tool that optimizes the higher education system, allows delimiting and developing curricular contents oriented towards the training of undergraduate students, and offers practical training in strategies (service performed by mentors with their minds) and specific actions in their field of study and professional field (learning of competence, learning to learn), thus contributing to the development of the third mission of the university, adapting the employability profile of students, and, consequently, satisfying the demand of the labor market.

5. Conclusions

Although this study has some limitations (methodological design, number of participants, number of sessions, no control group, and scarce training course), the educational field needs changes aimed at developing qualities such as creativity, resilience, adaptability, and flexibility with which to face new situations and challenges.

Chapman and Aspin [88] argued the idea of transforming education systems to meet current challenges through the following principles:

- Provide educational opportunities that respond to the principles of social justice, democratic participation, economic effectiveness, social inclusion, and personal development, just as this program has helped the academic and personal development of mentees;
- Reevaluate curricula and ways of teaching as a response to the challenge of a learning society, where this program, through the use of alternative teaching methodologies, has offered an academic practice that can accomplish this by providing students with experiences that can increase civic engagement and better prepare students to participate in their communities;
- Perform a reevaluation and redefinition of those places where learning occurs. This will lead to flexible, adapted, and motivating learning environments. This program used different places that helped generate curiosity in the mentees to continue learning;
- Impact the relations between schools and the community on the learning process. Not only did we work with the mentees, but the contributions and suggestions from the teacher-tutors, families, and the community itself were relevant for meaningful learning to occur;
- Promote the idea of school as a learning community and as a center of lifelong learning. These types of programs focus on the context as a bridge to change the way of thinking and put into practice the principles of continuous learning in all sectors of activity. Likewise, this program involved all the people who wanted to participate in the dynamic, having as its axis the school as a unit of change.

Therefore, the need to develop organized learning through trans-organizational processes or in partnership with the community is the key to be able to incorporate and develop knowledge, competences, skills, etc. that are necessary for the new requirements of academic society [89].

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