

SERVICE LEARNING: A TECHNIQUE THAT ENHANCES UNIVERSITY STUDENTS' SOCIAL SKILLS

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ABSTRACT

In today's highly competitive labour market, employers prioritise social skills over technical skills. Consequently, universities face the challenge of developing not only technical but also social skills among their students. This article presents the application of an experiential learning methodology, specifically service-learning, to strengthen social skills such as communication and teamwork among university students. A total sample of 248 students from engineering, social sciences and tourism programmes were divided into experimental and control groups and surveyed about their social skills, namely communication and teamwork. Non-parametric statistical analysis results indicate a positive influence on effective communication, including the use of appropriate language with different groups and enhanced recognition of the importance of teamwork. This study reveals the importance of the service-learning methodology for developing social skills in engineering, social sciences and tourism students regarding effective communication and teamwork. Therefore, the service-learning methodology should be considered part of the university teaching and learning strategies.

Keywords: communication, service learning, soft skills, teamwork, university.

1 INTRODUCTION

Soft skills, often referred to as interpersonal or social skills, are critical attributes that organisations consider highly valuable during the hiring process [1]. This is particularly true in the tourism industry [2]. In this regard, the research performed by Carlisle et al. [3] highlights the importance of strengthening social skills among university students to achieve sustainable and quality tourism experiences. Leadership, teamwork and effective communication are most required by companies at the Latin American level [4]. Universities play an important role in generating opportunities for the development of students' social skills [5]. University students, as well as higher education institutions, are increasingly aware of the need to strengthen essential skills such as teamwork [6]. Likewise, effective communication is part of the social capabilities combined with the excellent performance of interpersonal work that can be achieved in a diverse human team [7]. This skill is also a prevailing condition that companies consider in selection processes [8].

Universities should provide training spaces in which future professionals develop skills that make them competent for the professional sphere. In this sense, experiential learning serves as a critical support for university students as it allows the theoretical knowledge acquired in the classrooms to be integrated with real-life situations to respond to the market with trained, competent, and confident professionals [9]. Service-learning is a form of experiential learning defined by Bringle and Hatcher [10] as a 'course-based, credit-bearing educational experience in which students (a) participate in an organised service activity that meets identified community needs and (b) 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 civic responsibility'. Service-learning pedagogy has been integrated into various disciplines, such as health sciences, business, economics, engineering, and others, with reported benefits for students, faculty, and community members [11]. Most of the scientific production on service-learning is concentrated in developed countries, with the



USA leading, followed by Spain and the United Kingdom [23]. In contrast, there is a noticeable gap in studies exploring the impact of service-learning on the development of social skills among university students in Latin America.

Engaging students in service-learning activities can improve their social skills, such as problem-solving and systemic thinking [12]. In this regard, service-learning activities may positively influence students in terms of soft skills, attitudes, and personal attributes, as well as foster growth in their communicative and professional skills [13], [14]. Several authors suggest the positive impact of service-learning on students' social skills, such as teamwork [15]–[17] and communication [15], [18]–[20]. However, it is essential to acknowledge that these skills are affected by the intervention of the students themselves, their teachers, educational institutions, beneficiary communities, non-profit organisations, industry partners, alumni, policymakers, and government bodies [21]. Given this, it is essential to assess the impact of service-learning activities on students' skills. Assessment is a critical stage of service-learning programmes, ensuring that the objectives related to community impact and student skill development are met [22]. The assessment refers to the evaluation of engineering competencies, the effectiveness of the service-learning activities, the participation of students, and the student outcomes and skills developed [24]. In this context, the literature review by Rodríguez-Zurita et al. [23] identifies assessment activities as one of the six thematic clusters derived from a co-occurrence analysis of authors' keywords.

Given that mastering social skills is crucial for the professional careers of university students and, considering the limited research on this topic in Latin America, it is essential to identify effective mechanisms for developing these skills within the Latin American context. This study aims to assess whether participation in service-learning projects influences the development of social skills such as teamwork and effective communication of university students from a Latin American country, specifically Ecuador, through an inferential statistical analysis. The findings contribute to identifying effective learning methodologies that enhance the soft skills of Latin American university students.

2 LITERATURE REVIEW

2.1 Experiential learning

Experiential learning directly involves students in their learning process and generating practical skills, participating in a tangible experience, leading them to reflect and be flexible students [25], [26]. Kolb's proposal [27] is considered one of the most essential theories of experiential learning. The importance of experiential learning lies in facilitating the connections between university education and professional experience [28] and creating new skills, attitudes, and ways of thinking in students [29]. For its application in university education, experiential learning could be given through methodologies such as problem-based learning, project learning, service learning, and cooperative learning, thus different from the strategies and educational spaces that promote experiential learning [30].

2.1.1 Service-learning and its impact on university students

Service learning originated more than 50 years ago and is an experiential learning methodology that seeks to benefit both those who provide the services (i.e., university students) and those who receive (i.e., the community) [13]. Service-learning activities differ from volunteering in that they focus on the learning that students will have in their interaction with the real-time environment. In contrast, volunteer activities are limited to providing the service only [31]. Educational models for participation among students and their



communities are natural learning environments that allow future professionals to link academic knowledge with the current needs of society [32], thus facilitating the learning of curricular contents [33] and developing in students a sense of responsibility and commitment to social justice [34].

Through the service-learning methodology, the institutions provide quality training for technically competent professionals while creating the students' capacities to insert, analyse, and understand their professional or social environment and transform it [35]. The development of projects involving service-learning has demonstrated its effect on the development of interpersonal skills and the improvement in the ability to address real problems with critical thinking, solve them, and effectively communicate between cultures [36].

The definition of service-learning on which we base our study is that of Bringle and Hatcher [10], who propose service-learning as an educational experience based on an earn-credit course where students engage in activities that are born of the needs of communities and reflect deeply on service activities in such a way that they internalise knowledge. Salam et al. [22] suggest that the implementation of service-learning in institutions is carried out through a series of steps. The administrative part, in which the service-learning is institutionalised in the universities, is followed by the preparation and planning part, where the service-learning is inserted into the curricula. The relationships with the beneficiary communities are defined, continuing to the implementation part, where projects are executed; the reflection part, where learned is systematised; and finally, the evaluation, where the impact on students and the community is analysed.

3 METHODOLOGY

3.1 Context

ESPOL Polytechnic University, situated in Guayaquil, Ecuador, has institutionalised service-learning according to the service-learning implementation model proposed by Salam et al. [22] by defining outreach programmes, which are composed of a portfolio of multidisciplinary service-learning projects. Service-learning activities are based on a community approach to provide authentic learning environments for students and to solve the real problems of communities, hospitals, educational units, and local governments.

Regarding preparation and planning, the ESPOL intervention protocol applies community approach methodologies that provide information on real problems and needs, such as participatory diagnostics, in-depth interviews, surveys, environmental analysis, stakeholder maps, and involvement matrices. The implementation of service-learning projects is developed by the students under the supervision and guidance of professors. These outreach programmes are multidisciplinary and involve the participation of professors and students from various fields of knowledge. The monitoring of team members' duties and activities is defined during this stage.

Service-learning activities allow students to reflect and internalise the knowledge acquired, interlinking community service and vocational training [37]. It is worth noting that the students together with the professors, measure the learning results and the assimilation of the knowledge gained in practice (reflection step of Salam et al. [22]). Finally, the evaluation consists of measuring the results of the outreach programmes on a 5-year basis. At the end of this methodological process, sustainability is reflected in the adoption of an attitude of empowerment and autonomy on the part of the beneficiaries regarding the results achieved [38].



3.2 Data analysis strategy

This research was conducted under a non-experimental study with a quantitative approach and non-probability sampling technique. The sample includes data from second and third-year students in the fields of engineering, social sciences and tourism. Through the distribution of a digital questionnaire addressed to the total population of 728 students, a 34% response rate was achieved, resulting in 248 valid questionnaires. The students were asked for consent to fill out the questionnaires, and the data was anonymously analysed. Initially, the sample was divided into two groups: (1) an experimental group (EG) consisting of 167 students who performed service-learning activities; and (2) a control group (CG) comprising 81 students who did not perform service-learning activities. Results were also evaluated according to areas of knowledge, comparing whether there is any difference between engineering students (EG1) and social sciences and tourism students (EG2). The data that support the findings of this study are available on request from the corresponding author.

The instrument applied to evaluate effective communication and teamwork was a questionnaire developed by ESPOL professors. The questionnaire consists of two dimensions: (1) effective communication that evaluates the ability to understand instructions, use solid arguments to defend ideas, use appropriate language to communicate with other groups of people, among others; and (2) teamwork that measures recognition of the importance of work within the team, contributing ideas during group discussions, and valuing the skills of group members. Through this questionnaire, students self-assess their actions and choose the frequency of these for each item according to the scale 'rarely', 'never', 'always', and 'almost always'. This questionnaire was submitted for validation by experts in the area.

In addition to expert validation, the reliability of the measuring instrument was assessed through the estimation of the Cronbach Alpha coefficient, obtaining 0.76 for the effective communication dimension and 0.79 for the teamwork dimension. According to the interpretation of Oviedo and Campo-Arias [39], it has an 'acceptable reliability' because it ranges from 0.70 to 0.90. It is therefore concluded that the internal consistency of the instrument used is acceptable and that its implementation is reliable. Finally, the data collected were analysed using inferential statistics.

4 RESULTS

The data distribution for each dimension of the questionnaire was evaluated, and the non-normality in the distribution of observations was identified using the Kolmogorov–Smirnov test statistic of 0.00 significance level. Therefore, non-parametric statistical analysis of the EG and CG groups was carried out to determine whether there is a statistically significant difference in students' self-perception when evaluating their performance in effective social communication and teamwork skills. The Mann–Whitney U test was used to identify significant differences between EG and CG for each questionnaire item. The results show a significant difference between EG and CG medians with a statistical significance ($p = 0.007$) for using appropriate language with different groups of people. Additionally, a statistically significant difference ($p < 0.05$) was observed in the criterion of the level of importance students place on teamwork. No significant differences were found for the other items (refer to Table 1).

Subsequently, the non-parametric Kruskal–Wallis test was used to compare the distribution of the two experimental groups of engineering careers (EG1) and social sciences and tourism (EG2) and the control group (CG) and determine whether there is a statistically

Table 1: Results Mann–Whitney U-test.

Item	EG	CG	Mann–Whitney U	z	Asymptotic significance
<i>Effective communication</i>					
I understand instructions	5	5	6322.500	−1.006	0.315
Others understand me	5	5	6218.000	−1.380	0.168
I defend my ideas	5	5	6365.000	−0.862	0.389
Use of appropriate language	7	5	5521.000	−2.690	0.007*
Interest and listening	7	7	6485.000	−0.608	0.543
I dare to ask questions	5	5	6567.500	−0.400	0.689
Gestures and verbal communication	5	5	6344.500	−0.860	0.39
<i>Teamwork</i>					
Importance of my work	7	5	5210.000	−3.483	0.000**
Give ideas in group discussions	7	7	6692.000	−0.155	0.877
Adaptation to a working team	5	5	6174.000	−1.245	0.213
I value the skills of my team members	7	7	6140.000	−1.482	0.138
Developing my professional skills	7	7	6278.500	−1.054	0.292

* Statistical significance $p < 0.05$; ** Statistical significance $p < 0.001$.

significant difference contrasting by area of knowledge. The results of this test are shown in the following sections.

4.1 Effective communication between engineering, social science and tourism students

The language-related item is the only criterion within the practical communication dimension where compared groups show a significant difference ($p < 0.05$), with a significance of 0.011. The post-hoc tests of Table 2 determined significant differences between students who were not involved in service-learning activities and those who performed service-learning activities from engineering and social sciences and tourism. As shown in Fig. 1, with a significance value of 0.008, the students belonging to the EG1 of engineering present a higher statistic than those in the control group. However, there is no statistically representative difference between engineering and social sciences and tourism career students, nor between social science and tourist students and the control group.

4.2 Teamwork among engineering and social science and tourism students

Items that measured students' teamwork skills were also analysed by identifying significant differences between the group averages for the criterion 'I recognise the importance of my work and the contribution it provides within a working team', with a significance level of 0.002. Through the post-hoc tests of Table 3, it was possible to identify that there are



Table 2: Post-hoc tests for independent samples – Effective communication.

Sample 1 – Sample 2	Contrast statistic	Error	Contrast statistical deviation	Significance
CG vs EG2	14.195	10.704	1.326	0.554
CG vs EG1	27.469	9.192	2.988	0.008*
EG1 vs EG2	−13.274	10.124	−1.311	0.569

* Statistical significance $p < 0.05$.

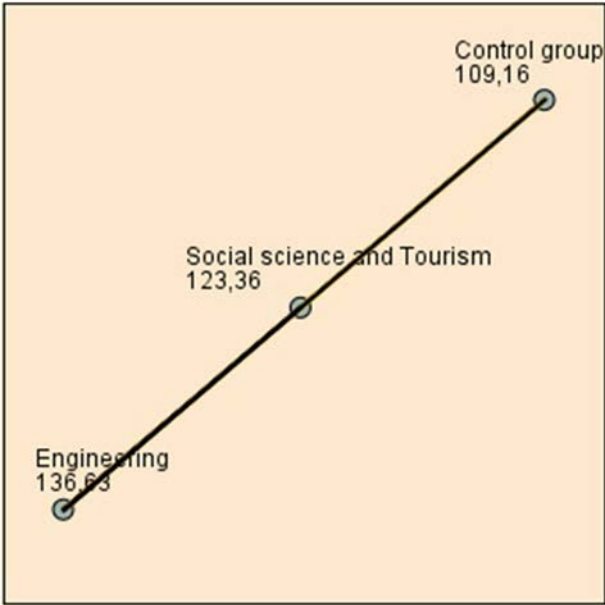


Figure 1: Comparison of means between knowledge areas – Effective communication.

Table 3: Post-hoc tests for independent samples – Teamwork.

Sample 1 – Sample 2	Contrast statistic	Error	Contrast statistical deviation	Significance
CG vs EG1	26.901	8.877	3.030	0.007*
CG vs EG2	31.374	10.337	3.035	0.007*
EG1 vs EG2	4.473	9.777	0.457	1.000

* Statistical significance $p < 0.05$.

significant differences between students who were not involved in service-learning activities and those who performed service-learning activities in engineering and in social sciences and tourism, as shown in Fig. 2. However, there is no statistically representative difference between engineering and social sciences and tourism students.

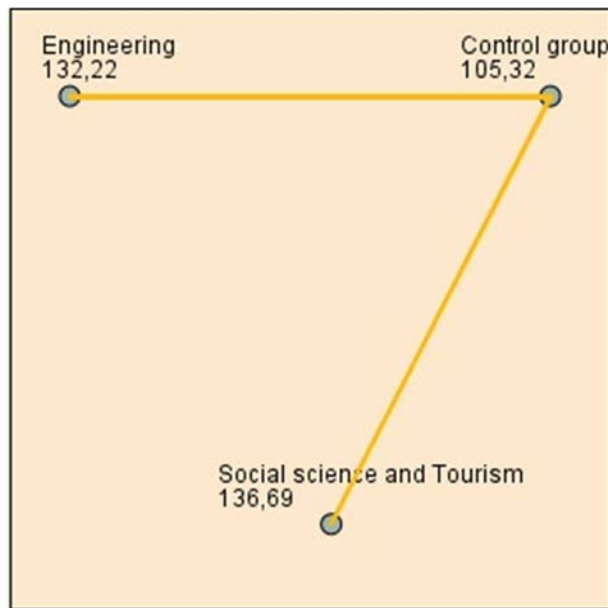


Figure 2: Comparison of means between knowledge areas – Teamwork.

5 DISCUSSION AND CONCLUSIONS

The present study uses non-parametric inferential analysis to determine the influence of service-learning activities on the social skills of university students. The results show a positive influence on effective communication in the form of using appropriate language with different groups of people and teamwork by recognising teamwork's importance. The experience that students acquire when performing service-learning activities is a challenge, considering that they must convey their ideas, thoughts, and knowledge to people of different cultural levels, which encourages the development of their communication skills, coinciding with the proposal by several authors that participation in service-learning activities is conducive to the development in communication skills in students [14], [15], [18]–[20].

Another significant result of this study is the positive impact of service-learning activities on developing teamwork skills. University students of ESPOL perform their service-learning activities within institutional outreach programmes. These activities are carried out by students from different knowledge fields and guided by professors. The principal aim of these service-learning activities is to solve real-life societal problems by applying their knowledge. In this sense, students recognise the importance of teamwork as each group member contributes from his/her perspective to a comprehensive solution to a real problem. The results of our research coincide with the contribution of Schmalenbach et al. [16], who showed positive evidence by experiencing teamwork during a service-learning activity among university students in El Salvador. Also, Kandakatla et al. [15] and Pinfold [17] suggest a positive influence of service-learning on social skills such as teamwork.

Another important finding resulting from the post-hoc tests is that engineering students stand out in using appropriate language over control group students but not over social science and tourism students. Similarly, in teamwork, both engineering students and those in social sciences and tourism stand out above the students of the control group. However, no

significant difference was found between engineering and social sciences and tourism students. These results differ from some studies that show social career students scoring higher in social skills than engineering students [40].

These results, which demonstrate an improvement in the social skills of university students as a result of participation in service-learning activities, contribute to the need to improve the social and emotional skills associated with the lack of communication of college students [41]. However, of the seven items on the practical communication scale, only one item showed a statistically significant difference; likewise, on the teamwork scale, only one item of the five items showed a significant difference. This finding probably corresponds to the limited sample size used or also to the scale used with four options that do not collect more significant variability, which represents a limitation of this study that can be addressed in future research with larger sample sizes and a scale that allows obtaining more minor differences in the constructs.

Finally, this study underscores the importance of the service-learning methodology for developing social skills in engineering and social sciences and tourism students regarding effective communication and teamwork. The most pertinent practical implication of this research is the recommendation that service-learning should be integrated into university teaching and learning strategies. University decision-makers should incorporate various experiential learning activities into the curriculum, enabling students to engage with community members and apply their knowledge to solve real-life problems. This approach pushes students and faculty members out of their comfort zones, compelling them to collaborate with individuals from different backgrounds and contexts, thereby encouraging them to communicate ideas in innovative and varied ways. Additionally, it is important to ensure that faculty members receive training on how to effectively convey their theories and technical solutions to a broader audience, especially when these concepts may not be easily understood by groups from different backgrounds.

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