



## Motivation in service-learning: An improvement over traditional instructional methods

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**Abstract.** This paper aims at exploring the motivation of university students who participated in service-learning projects as part of their coursework, and to determine whether their level of motivation is higher for the service-learning project as compared to performing more traditional academic tasks and assignments. The Service-Learning project carried out during the ICT in Education course intended to support the development of digital literacy in a Maasai school in Kenya. The instrument used to evaluate motivation of the university students is the motivation scale called *Motivated Strategies for Learning Questionnaire (MSLQ)* proposed by Pintrich and his collaborators (1991) adapted to the Spanish population by Rocés Montero (1996). The results of the research indicate that there are significant differences in favor of service-learning in relation to motivation in general for the completion of the activities and specifically in relation to the utility of the activity as seen at the present moment and in the future, as well as promoting creativity, the interest in the task which includes the perception of the importance of the project, the need to work hard and thoroughly and willingness to face challenges and difficulties in order to achieve the set objective. No significant differences have been observed in relation to the desire to obtain a better grade for completing the activity or need to prove personal value to others, as well as to broaden the information to complete the activity.

**Keywords:** digital literacy; Higher Education; technology.

### [es] Motivación en el aprendizaje servicio: Una mejora respecto a los métodos tradicionales

**Resumen.** Este artículo plantea un estudio relacionado con el aprendizaje servicio en el ámbito universitario en relación a la motivación de los estudiantes que lo llevaron a cabo. Se pretende contrastar las diferencias motivacionales que sugieren a los estudiantes los métodos tradicionales en contraste con el método aprendizaje servicio. Por medio de la asignatura de TIC en la Educación se ha llevado a cabo un proyecto de aprendizaje servicio para favorecer la alfabetización digital en una escuela Masái en Kenia. El instrumento utilizado para evaluar la motivación de los sujetos universitarios es la escala de motivación del *Motivated Strategies for Learning Questionnaire (MSLQ)* de Pintrich y sus colaboradores (1991) adaptado a población española por Rocés Montero (1996). Los análisis revelan que existen diferencias a favor del aprendizaje servicio en relación a la motivación general en el desarrollo de la actividad por parte de los alumnos, y en concreto en relación a la utilidad de la actividad en la actualidad y para su uso futuro; el fomento de la curiosidad, el interés por el trabajo; la importancia del proyecto y la necesidad de trabajar a fondo para conseguir el objetivo propuesto y el desafío frente al aprendizaje. No se han observado diferencias significativas entre metodologías en relación al deseo de obtener una mejor calificación en el desarrollo de las actividades, mostrar la valía personal ante los demás y la necesidad de ampliar información para el desarrollo del trabajo.

**Palabras clave:** alfabetización digital; Educación Superior; tecnología.

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## 1. Introduction

Digital literacy was defined by Gilster (1997) as the usage and comprehension of information in the digital age. More recently, Area Moreira, Gutierrez Martín and Vidal Fernández (2012) propose a broader definition, describing it as the acquisition and mastery of competencies that allow the effective use of the symbols of cultural representations in digital language. The integration of new technologies in our daily lives has increased an already existing social and economic gap in some parts of the world, in particular in underdeveloped countries. Therefore, promoting digital literacy is necessary to encourage democratic participation and help to equalize the disparities that are still present in 21st century (Acevedo, Vázquez and Manassero, 2003). Consequently, globalization implies changes in higher education. Higher education and society as a whole should establish a sustained dialog to make it possible for universities to serve and build a better society (Palomino, 2009). The university, as an institution open to society should become a centerpiece that promotes the values of citizenship so that members are aware of their ethical mission and social involvement. Therefore, educational practices in higher education should help students to grow both professionally and personally (Lozano, 2012). Undoubtedly, educational technologies are a breakthrough that fosters learning and greater flexibility in the ways we learn and teach. (Tokuhama Espinosa, 2014).

MaTumaini Service-Learning Project carried out during the ICT in Education course intended to support the development of digital literacy in a Maasai school in Kenya. The participants of this study were all preschool and primary education students that developed didactic materials to teach basic computer skills such as video tutorials, a textbook and two exercise books. These materials had been requested by the Maasai Community Primary School teachers who have been directed by Kenya's Department of Education to teach computer courses and found themselves with no knowledge, training or resources. This project addresses real needs that the Maasai community expressed explicitly and asked us to help them with.

This paper aims at exploring the motivation of university students who participated in MaTumaini Service-Learning Project as part of their coursework, and to determine whether their level of motivation is higher for the service-learning project as compared to performing more traditional academic tasks and assignments.

## 2. Key aspects of academic motivation

Motivation is one of the most important factors that should be studied in order to improve the processes of teaching and learning (Williams and Williams, 2011). In this regard, it is necessary to explore the impact of service-learning in higher education

on students' intrinsic and extrinsic motivation since there are many questions yet to be resolved (Adeyeri, 2012).

Understanding motivational factors in university students implies certain complexities and challenges. Therefore, those indicators cannot be analyzed in a simplistic way. From an academic point of view, three key aspects of academic motivation should be addressed, namely achievement motivation, learning goals and self-efficacy. Achievement motivation leads to successful accomplishment of a socially recognized goal in a competitive way. According to the theory of achievement motivation, a human being acts upon two opposing forces: one is the need to achieve success and the other one is the need to avoid failure and fear of ridicule. Each one of them consists of three elements: the power of the motive, the expectation or probability of success and the value given to the task. The dominance of one over the others determines the character and disposition directed towards the achievement of success. (Eccles y Wigfiel, 1995). It is also important to address the theory of expectation-value which is based on the assumption that students always ask themselves whether the activity they are required to undertake is indeed of value for them. (Eccles y Wigfiel, 1995; Wigfield, 1994).

There are four determinants of value: a) the value of achievement which refers to the importance that one finds in performing a task well and is often used to show others what one is capable of doing; b) intrinsic value which is synonymous with interest or intrinsic motivation that an individual has undertaking an activity; c) the cost of the required work which refers to the amount of effort that one is willing to devote to the activity; students can pursue an activity that they dislike if it helps them bring about a desired result; d) the amount of effort and work that a student will have to invest in order to complete a task. As for learning objectives, they are defined as the purpose or dynamic cognitive core of commitment to the task (Valle, Núñez, Rodríguez and González-Pumariega, 2002).

Setting objectives has three important functions necessary for self-regulation. First, it defines the end result that one wants to achieve. Second, it highlights the aspects of performance that should be controlled during the self-regulation process. Finally, the goal serves as a criterion of the evaluation of the outcome. Motivation is directly related to one's personal goals since those constitute cognitive representations that organize and regulate behaviour centered on the accomplishment of the objective. Different goals are translated into different levels of commitment to the task that can predict the processes that students set for themselves and create a roadmap that conditions the processes of achievement and results. According to Miller and Brickman (2004), all the goals are representations of the future, independently from the time set for the achievement of their objective.

Finally, the self-efficacy which is defined as the confidence of the individual in the probability of performing a task successfully. It is the central element and is at the core of the motivation for self-regulation of learning and consists of three elements that complement each other, which are: 1) the appreciation of the outcome of a task; 2) expectation of the outcome, which refers to the anticipation of the desired result; 3) expectation of self-efficacy defined as a belief that one's skills and actions can conduct to a desired result (Bueno, 2004).

Increasing students' motivation in higher education involves maximizing efforts and providing opportunities to generate it and to achieve satisfactory outcomes. The quality of motivation is an important factor which depends, to a large extent, on the

applied educational approaches and methods, as well as on the context and purpose of the assigned tasks. It is not the same that students' motivation is intrinsic or extrinsic from the quantitative point of view (Saeed and Zyngier, 2012). Intrinsic motivation is fundamental for learning as it is a source of satisfaction and helps to generate students' self-motivation (Ulstad, Halvari, Sorebo and Deci, 2016). However, it is not at odds with extrinsic motivation because it fosters students' commitment to the task and both kinds of motivation can co-exist and complement each other (Adeyeri, 2012).

On the other hand, as Simonet (2008) reports there is a strong relationship between effort and extrinsic motivation that can influence the persistence in completing the task whether or not service-learning is at stake. Nevertheless, intrinsic motivation is viewed more positively due to fostering self-determination and boosting the ability of individuals to act simply because they enjoy it (Levesque-Bristol, Knapp and Fisher, 2010). It is necessary to study motivational factors of students involved in service learning projects in order to understand the dynamics that make students commit to service learning tasks (Casperz and Oлару, 2015). It is known that students put more effort into service-learning activities or those that include some type of service to the community in comparison to other kinds of activities (Miller, Rycek and Fritson, 2011). Nonetheless, this fact leads us to raise several questions such as: What makes students devote that effort? What type of motivation prevails in service-learning in comparison with traditional instructional methods? Do students attribute major value to the tasks depending on the implemented methodologies?

### **3. MaTumaini Service-Learning Project**

Service-Learning is an educational philosophy and methodology that focuses on learning and development of competencies through service to the community in the form of addressing real needs in order to offer real-world solutions (Aramburuzabala, 2015; Billig and Waterman, 2014; O'Grady, 2014; Waterman, 2014; Tejada, 2013). It allows students to apply their classroom learning to make a positive change in a community (Huda et al., 2017; Gerholz, Liszt and Klingsieck, 2017; Winterbottom et al., 2015).

MaTumaini is an innovative Project as it integrates the academic work carried out in the classrooms to help the Maasai Community in Kenya. The goal of MaTumaini Project is to counteract the devastating effect of the exodus forced upon the cities and towns of new Maasai generations, which will lead to their loss of values and cultural identity. Different projects were undertaken by students from the schools of Education, Media Studies and Business within the academic framework from which they obtain academic credits.

The direct beneficiaries of this Project in 2016 are 25 teachers, 40 adult women, 180 children and 10 workers from the Maasai community. The rest of the inhabitants of the village of Mara, formed by 1.600 women and approx. 5 members per family, are indirect beneficiaries of this Project. The university community is also considered beneficiaries of this collaboration as it is the best way to "learn with social responsibility." The university students adhere to social commitments and responsibility towards the disadvantaged in a natural way.

The involvement of the university community in MaTumaini Project pretends to counteract the devastating effect of exodus forced upon the cities and towns of new Maasai

generations, which will lead to their loss of values and cultural identity. Another problem is the low schooling rate of children in general, and in particular girls. The cause of this problem lies in their nomadic type of life, long distances between the settlements and scarcity of schools. The classrooms are becoming larger every year and academic training of teachers is a priority, above all ICT and innovative methodologies. On the other hand, women in the Maasai community are vulnerable: they are conscious of their need for vocational training and the consequences they suffer when they lack such education. They are fully aware of the fact that education will be a great asset in defending their rights, in managing their handicrafts better and in generating income for their families.

## 4. Method

### 4.1. Instrument

The main goal of this study is to determine whether there are any significant differences between Service-Learning and traditional instructional methods in reference to students' motivation. The instrument used to evaluate motivation of the university students is the motivation scale called Motivated Strategies for Learning Questionnaire (MSLQ) proposed by Pintrich and his collaborators (1991) and adapted to the Spanish population by Roces Montero (1996).

The motivation section of the survey consisted of 17 items with a seven point Likert scale. See the following chart.

Table 1 Items in the survey. Source: our own production

|     |   |
|-----|---|
| 1.  | I think I will be able to use what I have learned in this activity on other occasions.  |
| 2.  | Getting a good grade was the most important thing for me while doing this activity.   |
| 3.  | Learning to do this activity is important to me because of its value for my training.   |
| 4.  | My main concern has been getting a good grade on this activity.   |
| 5.  | If possible, I would like to get a better grade on this activity than most of the other students.   |
| 6.  | I prefer this activity because it stimulates my curiosity.  |
| 7.  | I find this activity interesting.   |
| 8.  | The most satisfying thing for me is to carry out this activity as thoroughly as possible.   |
| 9.  | This activity seemed useful to me.  |
| 10. | When given the opportunity, I have studied the recommended readings, information or research in order to develop the activity, without regard to the grade. |
| 11. | I like this activity.   |
| 12. | I consider this activity to be important for my training.   |
| 13. | I prefer this activity because it challenges me to learn new things.  |
| 14. | It is important for me to demonstrate my ability to my family, classmates, teacher or other people with this activity.                                      |
| 15. | In general, my motivation with regard to this activity has been...  |
| 16. | I felt competent when doing the activity.   |
| 17. | After performing the activity my feeling of competence in reference to this class has been...   |

There were three missing values in the student responses or 0.002% of the total values. Little's MCAR test was run in order to determine whether or not the missing values were missing at random. The results were  $2(33, N=88) = 37.108$   $p = .285$ . As the  $p$  value is not statistically significant ( $p > .05$ ), we can conclude that the values are indeed missing at random. The missing values were subsequently imputed using multiple imputation. Next, the internal reliability of the results was examined. The Cronbach's alpha for this section was .933 which is considered excellent. Of the 17 items in this section, two asked for generalized opinions regarding the activity (namely how much they did or did not like the activity, and their motivation in general regarding the activity.) The other 15 items addressed the perceived value and usefulness of the activities as well as intrinsic and extrinsic motivation or evidence thereof.

Overall, the service learning activity was rated higher in terms of motivation than the traditional learning activity. Table 1 shows a statistical summary of all responses for both activities. It is important to note that the mean of all items for the service learning activity is 5.55 (SL = 5.55) while the mean of the traditional learning activity responses is 4.44 (TL = 4.44).

Table 2. Statistical summary of all responses for the Motivation section of the survey.  
Source: our own production

| Summary Item Statistics         |            |      |         |         |                    |            |
|---------------------------------|------------|------|---------|---------|--------------------|------------|
| Traditional or Service Learning |            | Mean | Minimum | Maximum | Standard Deviation | N of Items |
| Traditional                     | Item Means | 4.44 | 3.77    | 5.21    | 0.38               | 17         |
| Service Learning                | Item Means | 5.55 | 4.27    | 6.23    | 0.65               | 17         |

## 4.2. Sample

The participants of the project from the School of Education, who constituted the sample for this study, were all preschool and primary education students that developed didactic materials to teach basic computer skills. In order to measure and analyze students' motivation in relation to Service-Learning and traditional instructional methods, a questionnaire was distributed among students in which they had to evaluate a Service-Learning activity and a different activity based on traditional instructional methodology. As mentioned above, the students developed instructional materials such as a textbook, video tutorials, as well as two exercise books for the Maasai Community Primary School teachers upon their explicit request during 4 weeks of the ICT course. The traditional activities were based on the textbook for the ICT course. The participants were 44 (N=44) preschool and primary school education students in a private university in Spain. They were enrolled in undergraduate sections of an elective course on ICTs in education. All participants were in their second year of their four-year degree program.

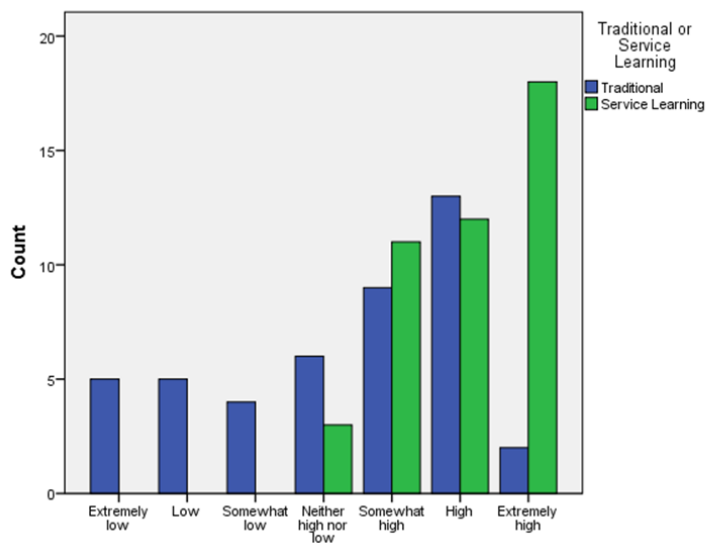
## 5. Students' reported motivation

Item 15 of this section of the survey asked students to rate their general motivation with regard to the activities. In this question a rating of one represented extremely



low motivation, while seven indicated extremely high motivation. Participants reported higher levels of motivation with regard to the service learning activity ( $\bar{x}_T = 4.27$ ;  $\bar{x}_{SL} = 6.02$ ). The mean for the traditional learning activity is 4.27, closest to a motivation of neither high nor low, while the mean for the service learning activity is much higher at 6.02, which corresponds to high motivation. Due to the non-normal distribution of the results for this and all other items, p values were obtained by calculating the asymptotic 2-sided significance. In this case the results were:<sup>2</sup> (6, N = 88) = 28.04;  $p < .001$ , which indicate that this finding is statistically highly significant. Figure 1 provides a graphical representation of the responses to this item, in which it is clear that the students reported higher levels of motivation in regards to the service learning activity. Note: Although the Likert Scale labels did not actually change in the questionnaire, the interpretation of this question will not make sense unless the labels are altered, where 1 means extremely low and 7 extremely high.

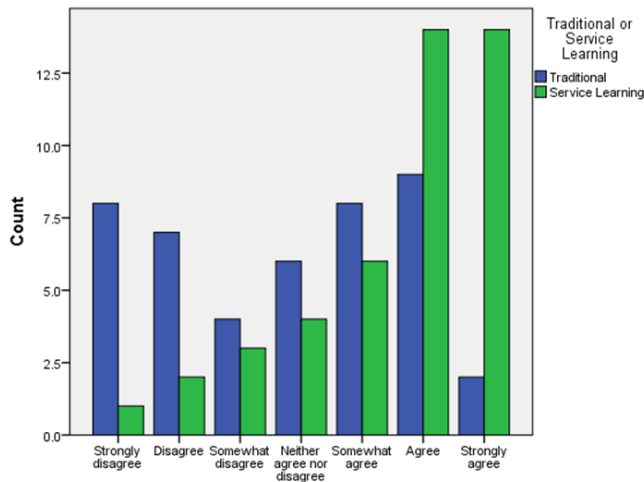
Figure 1. Reported general motivation with regard to each activity. Source: own production.



## 5. 1. Intrinsic Motivation

When evaluating service learning and traditional learning activities in the light of several types of intrinsic motivation, the students were both consistent and clear in their preference of the service learning activity. Perhaps the most striking differences can be noted when students were asked in item 7 to agree or disagree with the statement “I found this activity to be interesting.” The service learning activity garnered the highest mean out of all items in this section of the survey ( $\bar{x}_T = 4.18$ ;  $\bar{x}_{SL} = 6.23$   $p < .001$ ). The traditional learning activity received its lowest evaluation ( $\bar{x}_T = 3.77$ ;  $\bar{x}_{SL} = 5.50$   $p = .004$ ) in item 6, in which the students were asked to agree or disagree with the statement, “I prefer this activity because it stimulated my curiosity.” The responses to this item are represented in figure 2.

Figure 2. Responses to “I prefer this activity because it stimulated my curiosity.” Source: own production



The service learning activity was also rated higher than the traditional learning activity in item 13 for its ability to challenge the students to learn new things ( $r = 4.43$ ;  $s_L = 5.93$   $p = .003$ ). Item 8 asked students to agree or disagree with the statement “The most satisfying thing for me is to carry out this activity as thoroughly as possible.” Once again, the service learning activity received more favorable ratings ( $r = 4.45$ ;  $s_L = 5.75$   $p = .026$ ), however it is important to note that in a followup question that inquired as to whether students had availed themselves of recommended readings or supplemental research, there was no statistically significant difference in the ratings for the activities ( $r = 3.80$ ;  $s_L = 4.48$   $p = .622$ ). It would seem that the service learning activity inspired the students to want to be more thorough, however, this did not seem to be borne out in practice.

Finally, it should be noted that feelings of competence (Items 16 and 17), in regard to both the activity ( $r = 4.80$ ;  $s_L = 5.82$   $p = .039$ ) and the course ( $r = 4.91$ ;  $s_L = 6.07$   $p = .017$ ), were rated higher after completing the service learning activity.

## 5. 2. Extrinsic Motivation

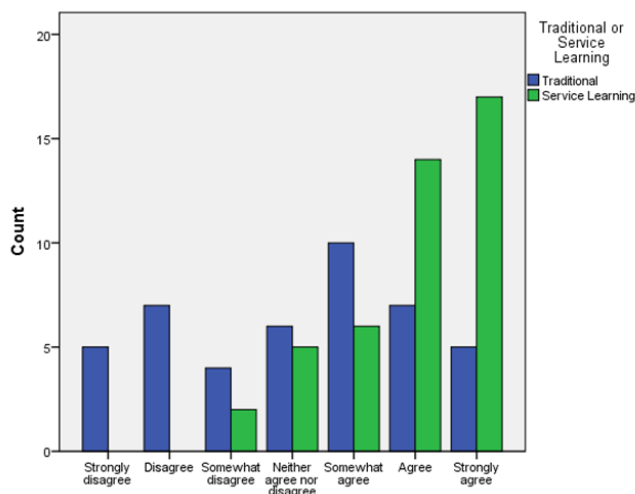
Items 2, 4, 5, and 14 dealt with two types of extrinsic motivation, namely getting a good grade, or a better grade than one’s classmates, and recognition of abilities. It is remarkable that the responses were nearly identical for both activities, and what differences did exist, were not statistically significant. Item 4 demonstrates this particularly well. Students were asked to agree or disagree with the statement “My main concern has been to get a good grade on this activity.” The results seem to indicate that receiving a good grade was not a primary concern for students in either activity ( $r = 4.20$ ;  $s_L = 4.27$   $p = .982$ ).



### 5.3. How well each activity was liked

Item 11 asked students to report if they agreed or not with the statement “I like the activity.” A rating of one indicated that they strongly disagreed with this statement, while a rating of 7 indicated that they strongly agreed with it. As with the last question, the service learning activity received a more favorable response. ( $\bar{x}_T = 4.14$ ;  $\bar{x}_{SL} = 5.89$ ). The mean for the traditional learning activity is 4.14, closest to neither agreeing nor disagreeing with the statement “I like this activity,” while the mean for the service learning activity is higher at 5.89, which corresponds to agreeing with the statement. Once more, the asymptotic 2-sided significance was calculated:  $\chi^2(6, N = 88) = 28.64$ ;  $p = .001$ , which indicates that this result is statistically significant. Student responses are visually displayed in figure 3.

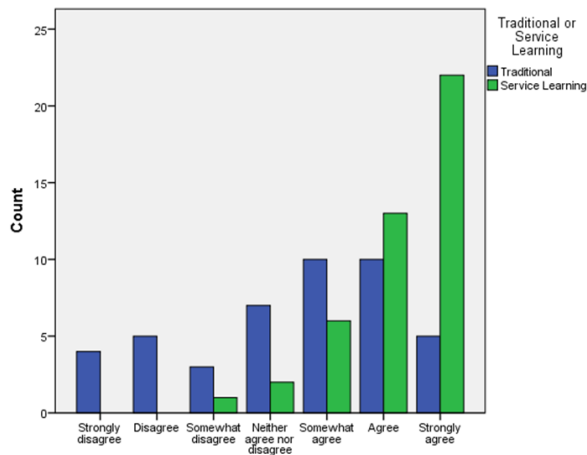
Figure 3. Level of agreement to the statement, “I like this activity.”  
Source: own production.



### 5.4. Educational value and usefulness of the activities

The results of the survey indicate that the students felt that the service learning activity was more useful and that it would be more useful in the future. Item 1 asked students if they agreed or disagreed with the statement that the activity would be useful on other occasions. The service learning activity received statistically significant higher ratings ( $\bar{x}_T = 4.50$ ;  $\bar{x}_{SL} = 5.80$   $p = .01$ ). Likewise, students consistently scored the service learning activity higher for being useful in and of itself ( $\bar{x}_T = 4.45$ ;  $\bar{x}_{SL} = 6.20$   $p < .001$ ). This result is graphically represented in figure 4.

Figure 4. Responses to the statement “I found doing the activity useful.”  
Source: own production



In item 12, the educational value of the service learning activity was rated higher than that of the traditional learning ( $\bar{x}_T = 4.55$ ;  $\bar{x}_{SL} = 6.11$   $p = .01$ ). However, the results indicate that the students felt that learning to do both activities were almost equally important, as there was no statistically significant difference in their assessments ( $\bar{x}_T = 5.20$ ;  $\bar{x}_{SL} = 5.75$   $p = .22$ ).

## 6. Conclusion

The university is an institution that has to assume new educational challenges. It is a continuing learning space where important social problems should be addressed critically and where solutions should be sought after and proposed. In addition, it is crucial that university students be deeply motivated and reach a high level of professional qualifications (Unesco, 1998). Therefore, service-learning methodology takes on special importance in this task.

Our research data indicate that we cannot claim that traditional instructional methods do not motivate university students since the data show that students are motivated when undertaking these types of activities. However, motivation increased remarkably and significantly in students who were involved in service-learning activities. Therefore, our research suggests that service-learning methodology can be more motivating to students than traditional instructional methods. It is important to add that students develop higher levels of intrinsic motivation in comparison to traditional teaching methods. The service learning activity seemed to garner more favorable responses than the traditional learning activity. This fact is significant and indicative since it adds value to service-learning methodology, in particular, as for putting into practice competences required for the task and enhancing students' self-motivation in the context of collaborative learning. It also stimulates students' curiosity for learning, which is indispensable in order to develop self-learning skills, as well as it contributes to the development of new knowledge and the improvement of students' perception of competence.

Levels of extrinsic motivation were not affected by the different activities and no significant differences were found between traditional instructional methods and service-learning, therefore academic performance does not seem to be primary and of most importance in service-learning. Nevertheless, significant differences were observed in how well each activity was liked, as well as in how students perceived the educational value and usefulness in favor of service-learning versus traditional instructional methods. Participants also indicated that they thought the service-learning activity would be more useful for them in the future. It is interesting to note that students were very clear in their assessments that the service learning activity was more interesting and challenged them more to learn new materials.

In conclusion, both traditional instructional methods and service-learning methodology have their legitimate place in higher education, however, students are more motivated and seem to favor real-life activities aimed at addressing social issues in the community.

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