





## Entrepreneurship and social reintegration analysis of the entrepreneurial potential of a group of inmates

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### ABSTRACT

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Inmates need to acquire the skills for their reintegration into society. Entrepreneurship education plays an important role. This article aims to determine the entrepreneurial potential of inmates studying for their secondary education graduate diploma and compare it with the non-prison student population attending the same studies. The design of this study is a cross-sectional survey with two convenience groups. This is a non-experimental, descriptive, cross-sectional study given the nature of the groups and the lack of manipulation or random assignment. 102 inmates from the "Antonio Asunción" prison in Picassent (Valencia, Spain) participated in the survey. The Attitude Toward Enterprise Test (ATE-S) was used. Non-parametric statistics were used since the normality condition was not met and were carried out using R software version 4.3.0. Among the results, it is worth highlighting the high scores of inmate students in the questions referring to the motivation dimension. On the other hand, they have worse results in everything related to the leadership dimension. About the comparative results, higher entrepreneurial potential is observed in inmates compared to students in ordinary schools in general terms both in educational levels and in all dimensions except in the personal control dimension. There is a need to strengthen the leadership dimension among inmate students to facilitate the transition from prison to freedom. In addition, workshops should be implemented to facilitate the acquisition of certain transversal competencies that will develop their future employability.

**Contribution/Originality:** This study analyses the entrepreneurial potential of a group of prisoners close to leaving prison. They must prepare themselves for their future social and labor reintegration. Therefore, it is essential to know what their entrepreneurial skills are. This aspect gives this research its originality.

### 1. INTRODUCTION

The social reintegration of people serving a sentence is an aspiration of the democratic system, a right and a social duty. To achieve this, programs aimed at acquiring the secondary education graduate diploma among others play an important role. Training in certain skills must be placed at the centre of training programs that provide answers to their personal and socio-occupational needs. In this way, according to humanist perspectives, the acquisition of entrepreneurial skills facilitates their reincorporation into the social fabric. This research is part of a more general project that analyses the entrepreneurial attitudes of secondary students at a national level. The importance of this article lies in the group it studies, inmates who have decided to acquire secondary education

graduate in prison and see the day of their release approaching and must look for legal ways to reincorporate themselves into social life. This is its originality. In addition, it also highlights the difficulty of being able to access the group of inmates and analyse their entrepreneurial potential.

Entrepreneurial skills are especially necessary for vulnerable groups. For inmates of penitentiary institutions, they are a means of socio-occupational integration. Since the International Covenant on Economic and Social Rights (United Nations, 1976) the need to train inmates has been established. Subsequently, the United Nations (1990) called for the development of educational policies in prisons. Therefore, the approach takes a socio-educational perspective, not just a punitive and therapeutic one (Cantero, 2010).

The United Nations Educational Scientific and Cultural Organization (UNESCO) has been promoting the improvement of educational policies and practices in prisons through the Institute for Lifelong Learning with the Applied Research Chair for Education in Prisons. It examines practices and makes recommendations for the improvement of training provision. In Spain, the General Penitentiary Organic Law (Law 1/1979, 26th September) and the Penitentiary Regulations (Gobierno, 1966) establish the aim (in addition to detention and health care) of re-education and reintegration. For this reason, multiple programs are developed although of a secondary nature (Cantero, 2010) and without rigorous evaluation (Del Pozo, 2017).

The lines of intervention range from regulated studies leading to the Secondary Education Certificate, vocational training, occupational courses or university entrance courses to compensatory training perceived as not very useful (Caride & Gradañlle, 2013). Programs for the development of skills, knowledge and abilities are also proposed as well as others of a psychosocial and reintegration nature (Prison Regulations, chap. 1, art. 110).

In the development of these programs, current research should be reviewed with a view to the future, implementing personal and socio-labor skills. The development of skills such as adapting to change working with others, empathy, learning to learn or entrepreneurship are examples of these programs.

The *Secretaría General De Instituciones Penitenciarias (2022)* of the Spanish Ministry of the Interior reported that 3,293 of the 13,340 students were studying adult basic education; the number of students in basic and higher education had decreased. The number of students in non-regulated activities had increased (36.25% of inmates). Among the intervention programs the following stand out:

Table 1 presents different intervention programs.

Table 1. Intervention programs.

Open environment basic programs	
Social integration	Integral program of preparation for life in freedom and development of social competencies.
Respect module program in the CIS.	
Work insertion programs	Occupational vocational training.
	Guidance for labor insertion.
	Accompaniment for labor insertion.
Specific and complementary programs	
Health programs	
Programs related to substances and addictive disorders	
Specific programs	On gender violence, control of behaviors of sexual aggression, intervention with foreigners with women, restorative justice and mediation.
	Aimed at the disabled (Mental, intellectual, physical and sensory) with mentally ill people, the bridge program.
	Intervention with inmates sentenced for economic crimes (PIDECO).
	Intervention in general violence and sexual aggression.
	Intervention in restorative justice mediation.
Educational, training, cultural and sports programs.	Formal education (Autonomous communities).
	Professional training (External, approved and quality organizations).
	Cultural and sports interventions (Self-management under the supervision of teachers).

Source: Based on the 2021 report (pp. 136-138).

On the other hand, according to the inmate's training and employment history and interests the plans for employment and labor insertion of the state prison work and employment training entity design an Individualized Treatment Program (I.T.P). In addition, there is collaboration with the administrative unit of the European Social Fund, the Ministry of Education and Vocational Training, the State Public Employment Service, the 'la Caixa' Banking Foundation and ECOEMBES, and productive workshops and vocational training courses are offered that allow access to the certificates of professionalism. As the end of the sentences is reached, there is a period of semi-liberty in which accompaniment is provided through the Social Insertion Centres (SIC). This project has a collaboration of the Reincorpora Program. These programs are a good tool for labor insertion together with the workshops.

## 2. LITERATURE REVIEW

There is little research evaluating the effectiveness of training programs for inmates especially from an educational perspective (Martín-Solbes, Vila, & De Oña, 2013). The right to education is not always recognised for this population (Dantas, Leite, & Reis, 2023). Among the lines of educational research are Martín-Solbes et al. (2013). Prison and the right to education analyses the legal bases underpinning this right, the National University of Distance Education (NUDE) and distance learning curriculum for prisons. Distance learning in prisons enables UNED students' internships in penitentiary centres and pedagogical action in prisons. Possibilities and limits (Cantero, 2010) which analyses some of the educational practices in prisons and Vicente Garrido's work with young offenders which defines the profiles of people who commit some kind of offence.

But of these lines, only those of the UNED and that of Gil-Cantero evaluate the effectiveness of educational programs. In terms of research on entrepreneurial competence, this lack is even more evident. There are some local training experiences. At the European level, the study by Downes (2014) stands out on the EQUAL (European Social Fund) community initiative programs; the study by Grundtvig which supported 120 prison education projects in more than thirty countries; the Auxilia program in France where volunteers train prisoners in different subjects, including accounting (Auxilia, 2024) and the vocational training centres program (South Sudan) where prisoners are trained in technical skills necessary for their economic and social reintegration after release (United Nations Development Programme (UNDP), 2019, 2022).

According to Downes (2014) correctional institutions should improve in promoting prison education more effectively not only within education but also within the justice system. Furthermore, a holistic approach to prison education should be taken encompassing general education, vocational training and personal skills development. There should also be greater cooperation between agencies responsible for education and other rehabilitation-related services encouraging greater interaction between prisons and society. This should include creating a more learning-friendly internal prison environment, improving the training of prison teachers and custodial staff, optimizing the use of technology in education, improving research on education in prisons and fostering European cooperation to promote innovation and exchange of experience.

Unfortunately, many socio-educational programs offered a traditional approach with little diversity (Añaños, Fernández-Sánchez, & Llopis, 2013). Variables such as high ratios, spatial conditioning, group rotation or cultural deficit and unevenness between groups must be considered to evaluate their effectiveness (Martín, 2006). On the other hand, from the perspective of prison therapeutic pedagogy (Moledo, Montolío, & Robles, 2013) there are some successful programmes, such as the Prosocial Thinking Programme (PTP), Aggression Replacement Training (ART Programme), social skills and self-control in adolescence programme and equip programme.

The prosocial thinking program is one of the most successful programs since its inception in Canada (1966) (Alba, 2008). It is the fundamental program in 47 prisons in Canada, 15 in the USA, the United Kingdom and other countries. In Spain, it operates in Barcelona, Valencia, Lleida, Extremadura, Canarias and Galicia. There is also the UNESCO Institute for Lifelong Learning (ILL) which strives to improve existing educational policies and practices

in prisons. It currently serves more than 11,000,000 people in penitentiary institutions. In addition, UNESCO also leads the chair of applied research for education in prisons which studies the quality of educational programs implemented in prisons.

### 2.1. Entrepreneurial Competence

The European Commission (2013) encouraged its member countries to include entrepreneurial competence in national educational legislation initially aimed at the development of entrepreneurship, it soon shifted towards the development of entrepreneurial skills, focusing on socio-personal, ethical and professional aspects. Entrepreneurship education only represents a part of entrepreneurial education (enterprise education). Bernal (2021) develops socio-personal aspects such as problem-solving skills, creativity, leadership, communication or autonomy (Peña, Cárdenas, Rodríguez, & Sánchez, 2015). This education includes both cognitive elements (linked to entrepreneurial skills) and non-cognitive elements (related to the more personal skills of the subject) (Bernal, 2015).

Curricula have been gradually combining entrepreneurial and socio-personal aspects. In recent years, creativity, joint activity to solve problems or self-knowledge to shape personal life projects (Azqueta & Sanz, 2022) which shape their own identity (Guerrero & Gutiérrez, 2014) have been promoted. These aspects are key for inmates who wish to reorient their lives. It is about taking a deep look back to project oneself forward. In this process, it is important to develop initiative, autonomy, responsibility and personal maturity so that they value, think, invent, create and imagine new formulas and personal projects (Guerrero & Gutiérrez, 2014). Therefore, the relationship between the promotion of entrepreneurial competence and the promotion of prison students is clear.

### 2.2. How to Promote Entrepreneurial Skills in Prisons

Prisons invest in training for the incorporation of inmates into the professional world. Training activities are promoted to improve their employability skills. However, it would be more appropriate to invest in the development of personal growth and training capacities that develop their entrepreneurial potential and transversal aspects such as flexibility, initiative and adaptability (Lorenzo, Quiroga-Carrillo, & García-Álvarez, 2022). These qualities make up entrepreneurial competence. Therefore, training actions should consider the following:

Even though it has been shown that knowledge of a certain area of occupation is not as important for the labor market as transversal competencies (Rychen & Salganik, 2003) the training provided in prisons does not seem to meet the current demands of the world of work (Lorenzo et al., 2022).

This learning of transversal competencies will facilitate the autonomy and responsibility of the inmates and will bring the action back to the socio-educational field (Santos-Rego & Lorenzo, 1996). Another need is the relationship between the training actions during imprisonment and the time of release, approaching the present needs (De Alós-Moner et al., 2011) through the Individualized Treatment Programs (ITP). In this sense, unfortunately, in the analysis of training alternatives in the penitentiary institution, there are no direct references to entrepreneurship from a humanist point of view. The 'Reincorpora' program of the labor insertion plan which develops technical skills for the search for employment could easily incorporate these skills and attitudes providing greater support for the continuity of studies and greater university labor reinsertion of ex-inmates (León, López-Armijos, & Camacho, 2021). Similarly, the Personal and Competence Training program (EPYCO) which designs interdisciplinary programs can be useful.

Figure 1 presents the different employment insertion plans of the REINCORPORA program.

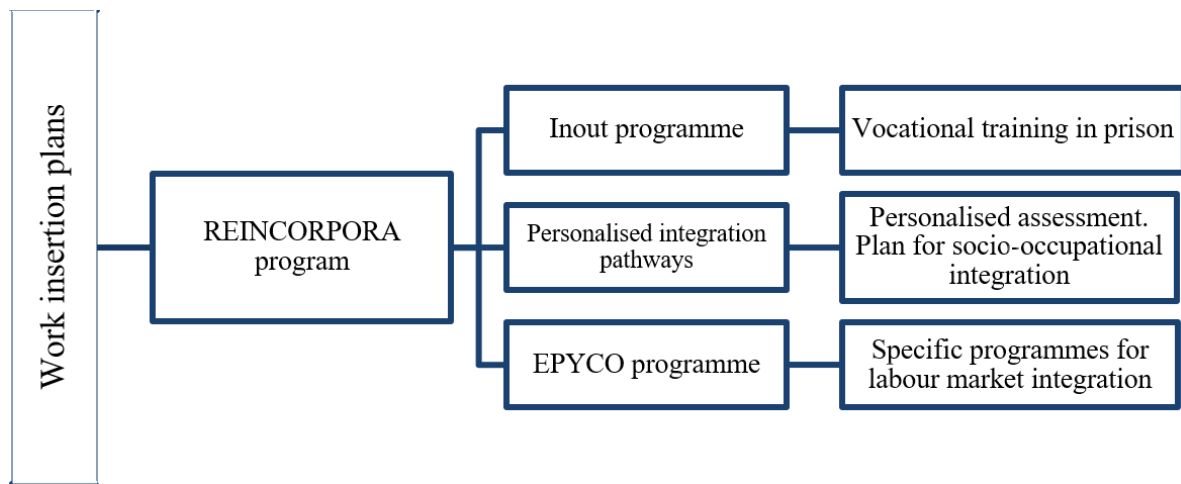


Figure 1. REINCORPORA program.

The Social Insertion Centres (CIS) could also be used as privileged places for training and personal development from an entrepreneurial approach, given that it is the last contact before reintegration.

This article sets out to answer two research questions: What dimensions of entrepreneurial potential (creativity, leadership, initiative for problem-solving, motivation and personal control) should be promoted among inmate students to facilitate their social and labor market insertion? and what differences exist between inmate students and students from ordinary centres in terms of their entrepreneurial potential? To answer these questions, two fundamental objectives are proposed. On the one hand, to diagnose the entrepreneurial potential of the students of the second cycle and the third level of the first cycle of basic training for adults of the penitentiary centre 'Antonio Asunción' of Picassent (Valencia). On the other hand, to analyse the differences in terms of the dimensions of entrepreneurial potential between the students of the penitentiary centre and a representative sample of students in ordinary centres of secondary education, training cycles and baccalaureate at a national level.

### 3. METHODOLOGY

#### 3.1. Research Design

The design of this study is a cross-sectional survey with two convenience groups. The participants are students of secondary education. There is a single data collection point to measure entrepreneurial potential. This is a non-experimental, descriptive, cross-sectional study given the nature of the groups and the lack of manipulation or random assignment.

#### 3.2. Research Population

The sample is made up of 102 male students in the second cycle and the third level of the first cycle of the 'Antonio Asunción' penitentiary centre in Picassent (Valencia). The sample is exclusively male as there are no female inmates in this penitentiary centre. The contribution was voluntary and the objective of the research, the procedures and the anonymized treatment of the data were explained to the participants. 100% of the sample participated. On the other hand, women were eliminated from the sample of students from ordinary secondary education, training cycles and baccalaureate centres, leaving a total sample of 522 students to carry out the second objective. This sample is collected by means of stratified probability sampling considering the autonomous communities (Andalusia, Community of Madrid, Castile-León, Community of Valencia, Castile-La Mancha, La Rioja, Basque Country and Navarre) and the ownership of the centre (public and subsidized).

### 3.3. Instrument

The Attitude Toward Enterprise Test (ATE-S) Spanish version is used consisting of 22 questions distributed in five dimensions to measure the entrepreneurial potential of both inmate students and general students. Creativity (4 questions), leadership (4 questions), initiative for problem solving (4 questions), motivation (5 questions) and personal control (5 questions). The internal consistency of the questionnaire is  $\alpha=0.853$  (Bernal Guerrero, Cárdenas Gutiérrez, & Athayde, 2021). A change is made to measure the entrepreneurial potential of inmate students based on this questionnaire. The term “school” is removed from the questionnaire.

Table 2 presents the list of questions from the Attitude Toward Enterprise Test (ATE-S).

**Table 2.** List of questions from the attitude toward enterprise test (ATE-S).

Number	Questions
Q1	I think I show a lot of imagination in my schoolwork.
Q2	I am good at getting people to work in groups.
Q3	Making mistakes is a good way to learn.
Q4	I work very hard to succeed in my projects.
Q5	I believe that my future career success depends on what I do.
Q6	I like classes that make me develop my imagination.
Q7	I am good at motivating my classmates.
Q8	I try to find different solutions to a problem before I give up.
Q9	It is worth the effort to work hard on projects.
Q10	I worry about failing in my future professional life.
Q11	I believe that a good imagination helps me to function better in school.
Q12	I think I can convince my classmates to agree on a plan.
Q13	My intuition helps me solve problems as they arise.
Q14	I feel great when a class project goes well.
Q15	I am as likely as anyone else to get a good job in the future.
Q16	I enjoy classes where teachers do things differently.
Q17	I take responsibility for organizing my colleagues when we work as a group.
Q18	I trust my own intuition to solve problems in class.
Q19	I am proud of my work this year.
Q20	I think it is important to plan my professional future.
Q21	It is important to finish a project to the best of your ability.
Q22	I am confident in my ability to succeed in my professional future.

### 3.4. Procedure

Non-parametric statistics are used to assess entrepreneurial potential as the normality condition is not met for any of the groups. The Wilcoxon test (with correction for continuity) for related or independent samples (as appropriate) and the Kruskal-Wallis test to compare more than two groups are used to compare the groups at different points in time and to assess whether there are significant differences between them. The measure of effect is obtained using the confidence interval for the medians (95%). In the statistical tests, those where the p-value < 0.05 will be considered significant. The chi test is used to analyse the dependence of two variables. Simple correspondence analysis is used to analyse the relationship in cases where a dependence relationship is confirmed. The statistical analysis is carried out using the R software version 4.3.0. Finally, the results obtained by the students contrasted with the opinions of their own teachers at the penitentiary centre through a semi-structured interview.

## 4. RESULTS

### 4.1. Results of the Study on Entrepreneurial Potential of Students in Penitentiary Institutions

This first section of the results analyses the entrepreneurial potential of students who are studying for the compulsory secondary education graduate in a penitentiary centre. The ATE-S questionnaire is used. The distribution in terms of means ordered from highest to lowest of the questions in the questionnaire is as follows:

Figure 2 illustrates the ordered distribution of the averages for the different questions.

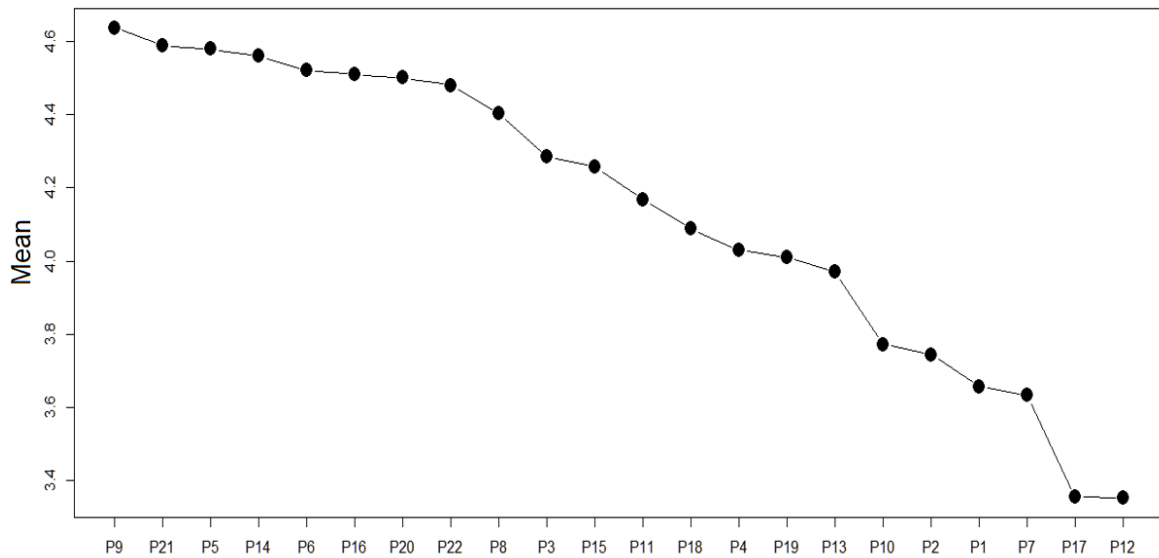


Figure 2. Ordered distribution of means.

The five highest-scoring questions on average are as follows: Q.9. It is worth the effort to work hard on the projects (linked to the motivation dimension). Q.21. It is important to me to finish a project to the best of my ability (linked to the motivation dimension). Q.5. I believe that my future professional success depends primarily on what I do (linked to personal control). Q.14. I feel great when a class task is done well (linked to motivation) and Q.6. I like classes that make me develop my imagination (linked to creativity).

Each question in the questionnaire is associated with one of the axes defined above. Of the five highest-scoring questions, three are associated with the motivation dimension, one with self-control and one with creativity.

There is a clear difference between the first two questions and the other two: Q.12. I believe that I can convince my classmates to agree on a plan (leadership dimension) and Q.17. I take responsibility for organizing my classmates when we work in a group (leadership dimension).

Figure 3 shows the frequency of responses to question 12.

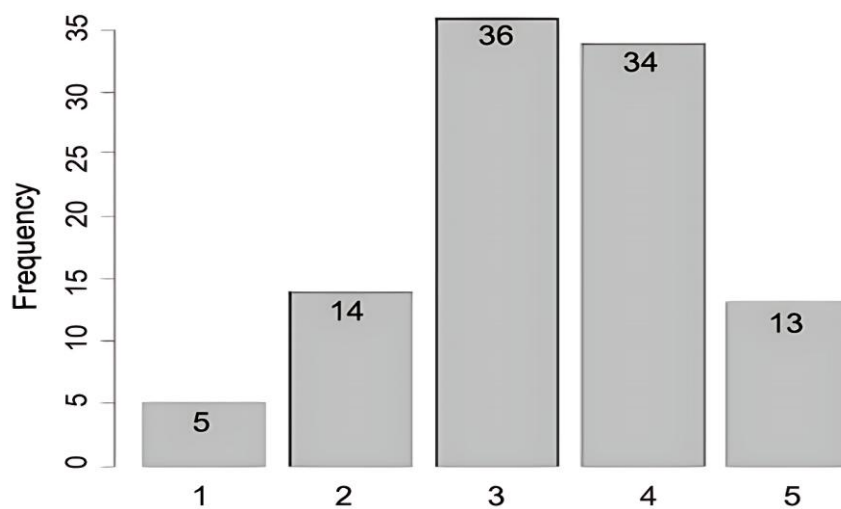


Figure 3. Question 12.

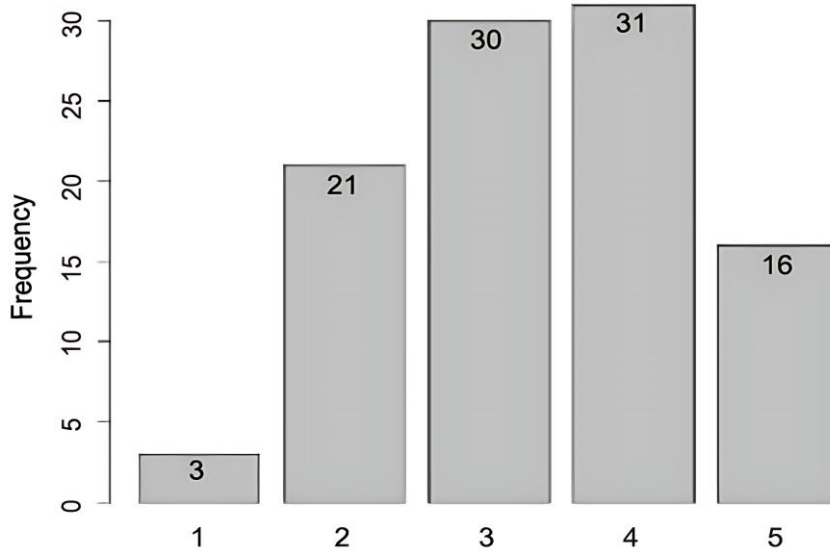


Figure 4. Question 17.

Figure 4 shows the frequency of responses to question 17.

As for the other three, we find Q.7. I am good at motivating my classmates (leadership dimension), Q.1. I think I show a lot of imagination in my schoolwork (creativity dimension), and Q.2. I am good at getting people to work in teams (leadership dimension).

Figure 5 shows the frequency of responses to question 7.

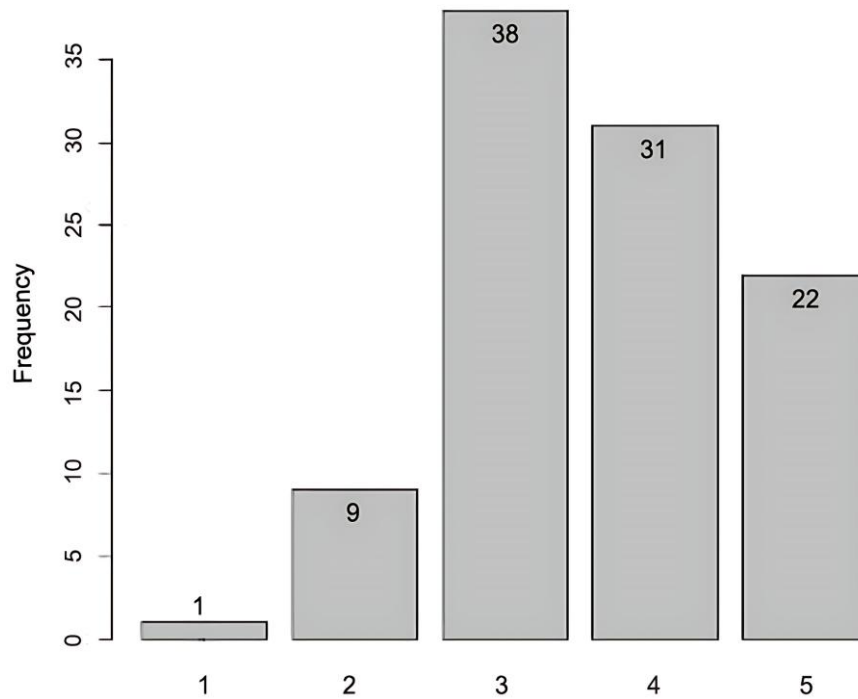


Figure 5. Question 7.

Figure 6 shows the frequency of responses to question 1.



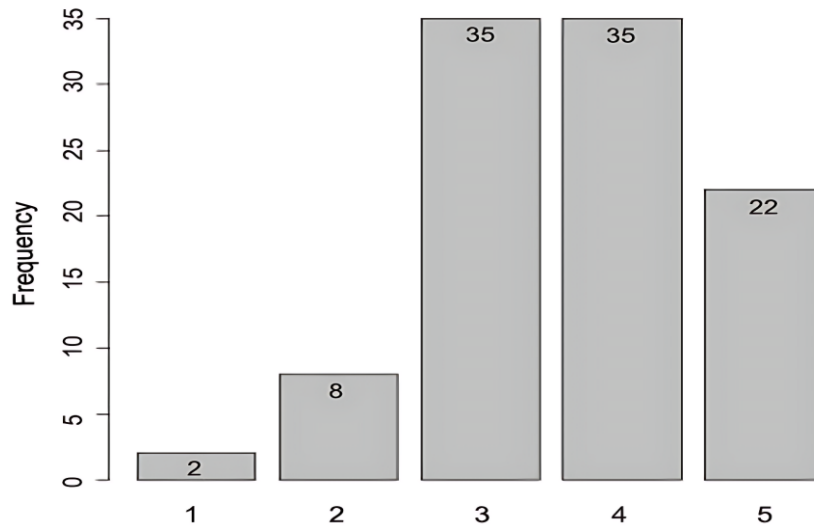


Figure 6. Question 1.

Figure 7 shows the frequency of responses to question 2.

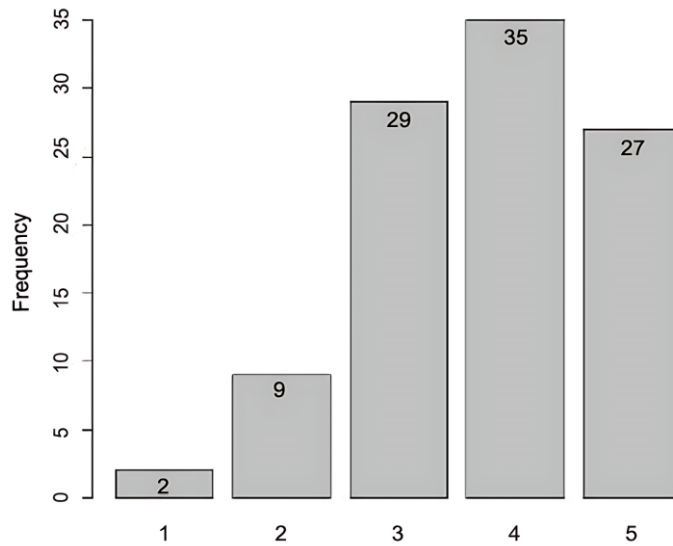


Figure 7. Question 2.

It is noted that four of these questions are linked to the dimension “leadership”. In fact, they have highlighted all the questions in this dimension related to the initiative to mobilise projects and work in groups.

Regarding the descriptive analysis of the total variables and the five factors, the following results were obtained:

Table 3 presents the distribution of the different dimensions of the questionnaire.

Table 3. Distribution by dimensions.

AXIS	Mean	SD	IQR	0%	25%	50%	75%	100%	N
AXI1.Creativity (CR)	16.813	2.187	2	11	16	17	18	20	102
AXI 2. Leadership (LI)	14.019	3.040	4	5	12	14	16	20	102
AXI 3. Problem-solving initiative (IN)	16.745	2.374	4	11	15	17	19	20	102
AXI 4. Motivation (MO)	21.745	2.734	3	11	21	22	24	25	102
AXI 5. Personal control (CO)	21.333	3.849	4	7	20	23	24	25	102
Total	90.656	10.541	14	53	84	93	98	109	102

The leadership dimension is the worst rated followed by the problem-solving initiative and personal control. Figure 8 illustrates the box diagram for comparison of the axis.

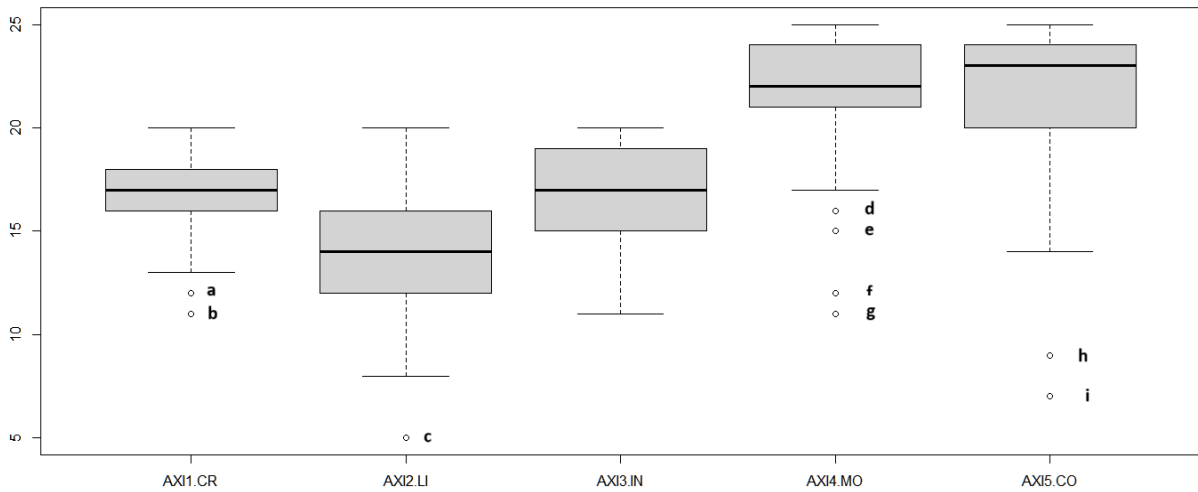


Figure 8. Box and whisker diagram for comparison of the axes.

Outliers have been detected regarding the low scores of the questions. Specifically, these outliers are as follows: Axis 1: (a) 17 and 38. (b) 57, 64 and 80. Axis 2: (c) 88. Axis 3: None. Axis 4: (d) 64, 78, 84 and 38. (e) 35. (f) 57. (g) 51. Axis 5: (h) 57 (i) 88. Where subject no. 88 scores very low on axes 2 and 5.

The educational levels under study are also compared by carrying out an inferential analysis of the influence of these levels on the variables total and axis. To compare the variables, total and axis according to the values of the variable level, parametric statistics are not used since the condition of normality is not met (except for axis 2), using the Kruskal Wallis test which does not require the condition of normality.

Table 4 presents the inferential analysis of the influence of educational levels on the dimensions of entrepreneurial potential.

Table 4. Inferential analysis of the influence of educational levels on the dimensions of entrepreneurial potential.

AXI1.CR	AXI2.LI	AXI3.IN	AXI4.MO	AXI5.CO	Total
p=0.54	p=0.70	p=0.22	p=0.57	p=0.57	p=0.49

Therefore, in the axes and in the total variable, the differences observed are not significant. The scores obtained in the axes and in the total variable, according to the values of the level variable are similar. According to the teachers, this is explained by the proximity of the moment of release from prison. The closer their release is, the greater their motivation and their efforts to achieve these goals. It is also the time when they look back and value their achievements and the merit of continued work. And this can serve as an example for other inmates.

#### 4.2. Comparison of the Entrepreneurial Potential between Inmate Student's Centres and Students in Ordinary Centres

In this second block of analysis, a comparison is made between the results in entrepreneurial potential obtained by a group of students studying for the compulsory secondary education diploma in a penitentiary centre and those obtained by a group of students, at the national level, studying compulsory secondary education, intermediate and higher-level training cycles or baccalaureate in ordinary centres.

Moreover, this comparison analyses the results in each of the questions according to the type of student inmate students or ordinary students. Besides, the results according to the educational level (secondary, training cycles or baccalaureate) of inmate students or ordinary students, as the age variable may play an important role. Finally, the

analysis has been conducted according to the entrepreneurial potential factors (creativity, leadership, problem-solving initiative, motivation and personal control).

*Comparative analysis of the answers to the questionnaire on the entrepreneurial potential between a group of inmate students and a group of ordinary students both in secondary education.*

This section measures the responses to each of the questions on the entrepreneurial potential of two groups: a group of students in a penitentiary centre and a group of students in ordinary schools. Table 5 shows the results of the questions that present significant differences after carrying out the Wilcoxon test for independent samples.

**Table 5.** Item-by-item comparison between inmates and ordinary students.

Questions	P-value	Conclusion
Q4	0.03	Inmate students' score are higher.
Q6	0.0000003	
Q8	0.00001	
Q9	0.000000004	
Q10	0.00003	
Q11	0.0008	
Q12	0.01	
Q18	0.0003	
Q19	0.01	
Q22	0.0002705	

The results, in this first approximation are curious. There are quite a few statistically significant differences between the group of inmates and the group of students from ordinary schools, most of them in favor of the group of inmates. In this sense, inmate students score better on the following questions: Q4. I work very hard to succeed in my projects (p=0.03023); Q6. I like classes that make me develop my imagination (p=0.0000003268); Q8. I try to find different solutions to a problem before I give up (p=0.00001293); Q9. It is worth the effort to work hard on projects (p=0.00000000486); Q11. I believe that a good imagination helps me to function better in school (p=0.0008776); Q18. I trust my intuition to solve problems in class (p=0.0003611); Q19. I am proud of my work this year (p=0.0116); and Q22. I am confident in my ability to succeed in my future career (p=0.0002705).

In contrast, the group of students in mainstream schools only scored better on the following question: Q12. I think I can convince my classmates to agree on a plan (p=0.01655).

*Comparative analysis of the answers to the questionnaire on entrepreneurial potential, according to the educational level between students in ordinary centres versus inmate students (compulsory secondary education, intermediate and higher-level training cycles or baccalaureate).*

**Table 6.** Item-by-item comparison between inmate students and ordinary students in compulsory secondary education.

Question	P- value	Conclusion
Q1	0.028	Inmate students' scores are higher.
Q2	0.004	
Q4	0.00005	
Q5	0.03	
Q6	7.148e-10	
Q8	0.00000301	
Q9	0.00000001511	
Q10	0.00000001511	
Q11	0.000001211	
Q13	0.019	
Q14	0.0002	
Q16	0.016	
Q18	0.001	
Q19	0.0001	
Q20	0.011	
Q21	0.00003424	
Q22	0.005	

This section measures the responses to the entrepreneurial potential questionnaire of the two groups: a group of students from a penitentiary centre and a group that attends secondary education in ordinary centres, considering the educational level at which the students from ordinary centres are (secondary education, vocational training or baccalaureate). Tables 3, 4, 5 and 6 show the results of the questions with significant differences after carrying out the Wilcoxon test for independent samples.

According to Table 7, inmate students show better results in entrepreneurial potential in 17 out of 22 questions.

Table 7. Item-by-item comparison between inmate students and ordinary students in the Baccalaureate.

Question	P-value	Conclusion
Q1	0.003	Inmate students' scores are higher.
Q4	0.011	
Q6	0.00006069	
Q8	0.047	
Q9	0.008	
Q11	0.008	
Q19	0.044	

If you analyse the comparison between inmate students and those who study Baccalaureate in ordinary schools, they also obtain similar results. On this occasion, boarders scored higher in 7 of the 22 questions.

Table 8 presents the question-by-question comparison between inmate students and ordinary students of the intermediate level training cycle.

Table 8. Item-by-item comparison between inmate students and ordinary students of the intermediate level training cycle.

Question	P-value	Conclusion
Q4	0.003	Inmate students' scores are higher.
Q6	0.0004	
Q8	0.002	
Q9	0.0000001136	
Q10	0.005	Students in ordinary centres scores are higher.
Q11	0.001	Inmate students' scores are higher.
Q12	0.002	Students in ordinary centres scores are higher.
Q16	0.037	Inmate students' scores are higher.
Q18	0.023	
Q19	0.01088	
Q21	0.004631	
Q22	0.0006708	

Table 9. Item-by-item comparison between inmate students and regular students of higher-level training cycles.

Question	P-value	Conclusion
Q4	0.0004	Inmate students' scores are higher.
Q5	0.046	
Q6	0.001	
Q8	0.001	
Q9	4.932e-11	
Q10	0.0004	Students in ordinary centres scores are higher.
Q12	0.002	Inmate students' scores are higher.
Q15	0.027	
Q19	0.012	
Q21	0.002	

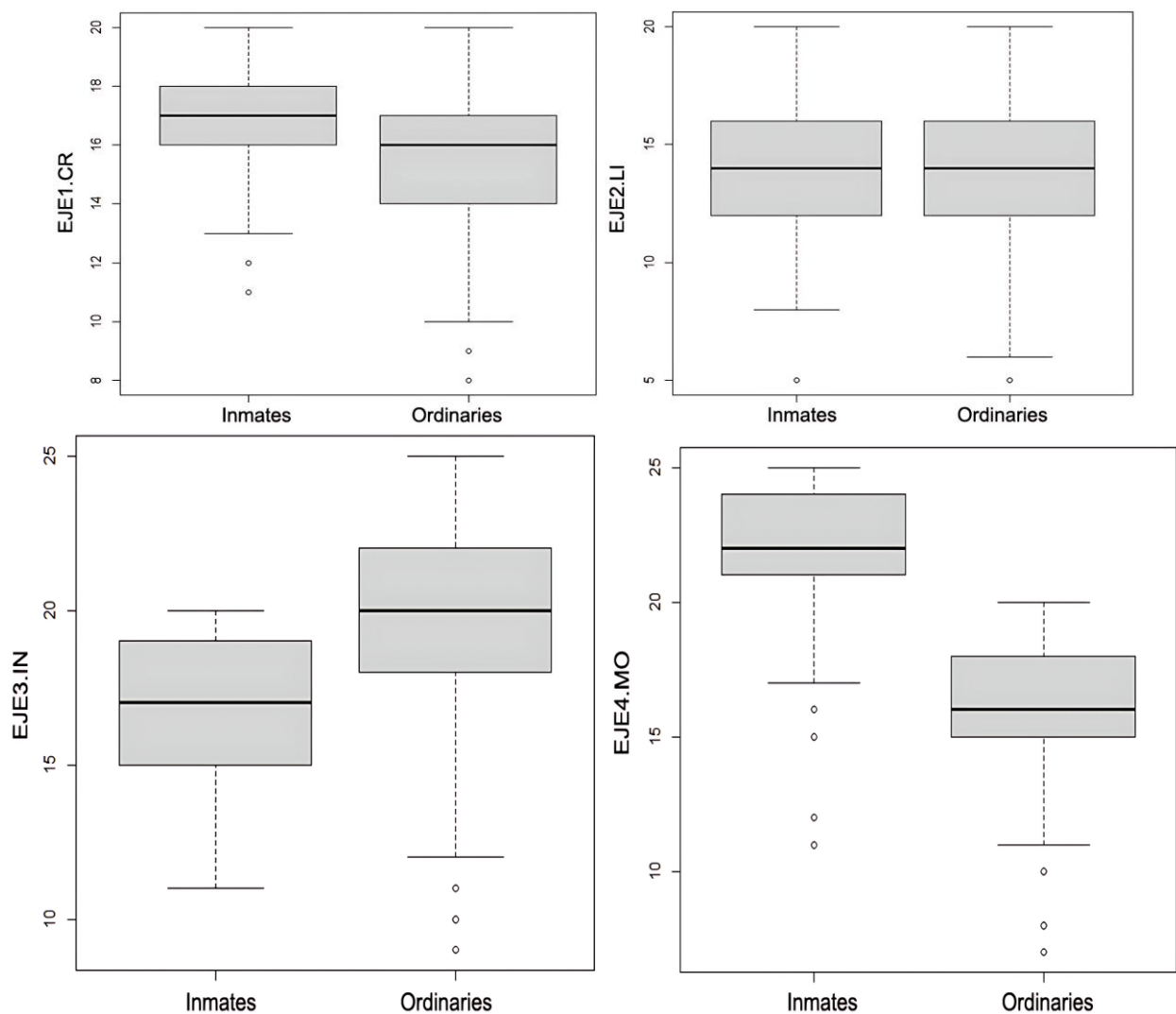
Table 9 shows the significant differences between inmate students and students from ordinary schools who are studying a medium-level vocational training course. The latter are studying courses that prepare them for the

professional world so it can be expected that they have greater entrepreneurial capacity or potential. But if you look at the data, you can see that once again it is the students from the penitentiary centre who present better results. In 10 of the 22 questions, find differences in favor of inmate students compared to only 2 among students from ordinary schools.

Finally, if we compare the group of inmate students with the group of students who are studying higher-level vocational training courses, we can see that, once again, it is the inmate students who present better results. They score higher in effort, imagination, divergent thinking for problem solving, satisfaction with the work done and confidence in the future of work.

*Comparative analysis of entrepreneurial potential factors between inmate students and ordinary students in secondary education.*

Finally, it is necessary to analyse the differences based on the factors of entrepreneurial potential between inmate students and students from ordinary centres. To make this comparison, the Wilcoxon test for independent samples is implemented. The results obtained are shown in the following [Figure 9](#).



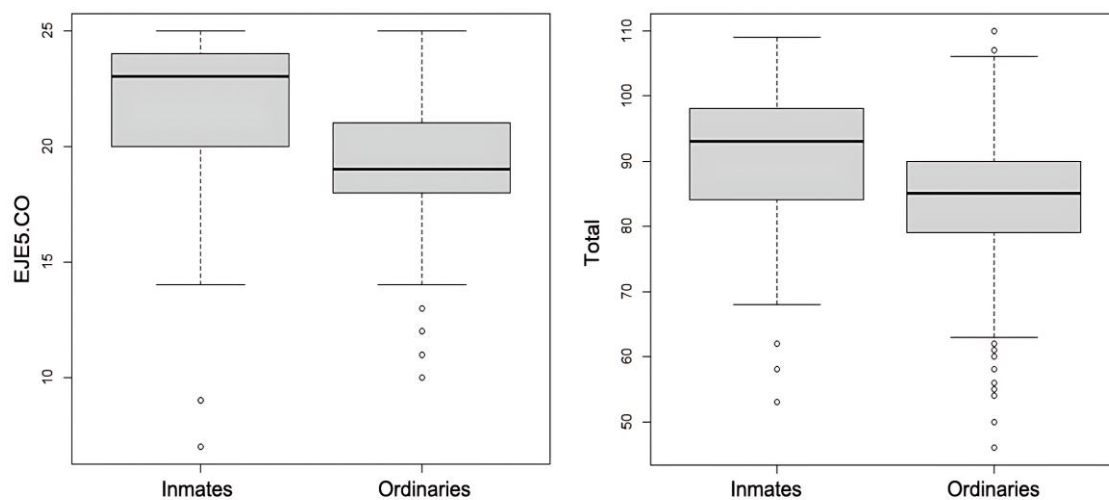


Figure 9. Box comparing the factors and the total score, according to the type of student (Inmates/ ordinaries).

As can be seen in the different graphs, there are significant differences in all the factors except for the leadership factor ( $p=0.8038$ ) where both groups present similar values. In the motivation factor ( $p=2.2e-16$ ) and personal control ( $p=2.2e-16$ ), the inmates present better results. On the contrary, in the creativity factor ( $p=0.0000006132$ ) and initiative for problem solving ( $p=2.2e-16$ ), the students from ordinary centers present better results.

Finally, if the set of factors is analyzed, it is observed that the inmate students obtain better results in general terms ( $p=4.261e-11$ ).

## 5. DISCUSSION

If we analyze the results of the inmate students, the questions with the highest scores are three that are associated with the motivation dimension, one with self-control and one with creativity. Motivation is something important for this group. This is confirmed by the opinions of the teachers from the secondary education graduate diploma. These are students who see the fruits of their efforts and are confident that they will be able to use them when they leave the institution. According to Ayuso (2000) if the inmates observe that the courses do not serve a specific purpose, they get tired and drop out. In this case, seeing the results of their efforts leads to a positive view of their prospects since in penitentiary institutions there is little group motivation that is promoted due to the personal initiative of some people. Furthermore, it is necessary to change this vision of inmates as “sick” to that of “learners” bearing in mind that education in prisons is not the same as re-education in prisons. This requires teachers with pedagogical training.

On the other hand, this research also demonstrates the importance of families in the commitment of inmates to their studies. García (2016) maintains that it would be of great help to have the family’s collaboration in socio-educational programs. Along the same lines, there is a program called *Storybook Dads* (United Kingdom) that promotes communication between inmates and their children through videos where prisoners record themselves telling stories to their children before bedtime. This program has been running since 2003 and has benefited 250,000 inmates with a high level of satisfaction for them and their families (Storybook Dads, 2023a, 2023b).

As far as the development is concerned, it is associated with a type of class that has to be useful, attractive and motivating. This is corroborated by the teachers who teach them who positively value didactic proposals that involve challenges. Along these lines, Cantero (2010) states that the role of the penitentiary institution should be re-educational and Valderrama (2013) maintains that activities and programs of welfare, clinical or psychological nature should be proposed from an educational approach. This approach requires improving the self-esteem, tolerance and resilience of inmates and encouraging prison institutions to exercise real guardianship of individuals.

Along these lines, there are two international programs to stimulate the creativity of inmates. On the one hand, the *Frames Prison Program* (USA) encourages the process of literacy and self-expression by means of storytelling through comics. This program was launched in 2015 empowering inmates while boosting their motivation and developing personal and professional skills (Brink Literacy Project, 2018). On the other hand, *Literacy for Incarcerated Teens* (USA) stimulates a love of reading among incarcerated youth with the aim of fostering the development of certain skills that favor academic, social and economic success (American Civil Liberties Union, 2024; Grench, 2020).

The methodologies used should be reviewed (stimulating and creative classes) and the programs and courses should be evaluated, looking not only at the results but also at the processes (Martín-Solbes et al., 2013).

On the contrary, the questions with the lowest average score are linked to the leadership dimension. In fact, they have highlighted all the questions in this dimension related to the initiative to mobilise projects and work in groups. Contreras and Frías (2015) found positive results in the improvement of attention and prosocial behaviors through the implementation of the Social Thinking Programmes (STP). Furthermore, when teachers were asked about this aspect, they found that this is consistent with what they observe as students prefer to remain unnoticed in prison. For Vera and Alberto (2010) prison requires constant adaptive effort which creates affective, emotional, cognitive and perceptual distortions that can lead to adaptive disorders. This may be the reason behind the inmates' reactions. Education can act as a protective factor, providing greater security (Murillo, 2019) as well as facilitating tools for verbalizing feelings, distinguishing between aggressive and non-aggressive actions and asking for help (Alba et al., 2005).

In the same way, the leadership dimension is rated lower by students makes sense for teachers as it involves working in a team or encouraging other people to do something. In the context in which they find themselves, the inmates try to remain unnoticed as a self-defense mechanism. This is a dimension that should be developed in students but could be implemented at other times. For example, in the transition to the extra-prison world or in social integration centres.

On the other hand, in the highest-rated questions there is a common thread related to ideas such as completing projects or solving tasks and a future linked to personal effort or reward for doing so. If the idea of proposing methodological challenges and creative activities is linked to the idea of achievement or completing projects, there are clues as to how to facilitate the effectiveness of their classes or any kind of training. This should be considered for a rethinking of classes, in addition to the need to involve the inmates themselves in the educational processes (Caride & Gradañlle, 2013). The vision of the stay in prison as a time of activity that allows for personal change should be promoted (Cantero, 2010). The failure of educational action in these centres is not only due to the implementation of inadequate programs but also to the lack of determination on the part of ex-prisoners to change their attitudes.

Regarding the comparison between inmate students and students in ordinary schools, some interesting issues can be observed. These results present a series of competencies, qualities and values around the most positive entrepreneurial potential among internal students. These competencies, qualities or values are effort, imagination, divergent thinking, perseverance, intuition, self-esteem and confidence. The age factor may be behind these differences as inmates are older than students in mainstream schools. In this sense, maturity may play a determining role. Moreover, the fact that the inmate students are studying for a qualification that enables them to reintegrate into society and work, they are about to be released from prison may be behind these more positive results. All of them have their sights set on finding a job while students from ordinary centres may have their sights set on continuing their higher education. Finally, another aspect that may determine the meaning of the answers is life experience. For different reasons, inmates have a much more intense life background than students in ordinary centres, which may help to assess certain aspects related to academic and personal training. So, it might make more sense for them to give higher scores to questions like effort, self-demand, and responsibility in the face of success or

satisfaction for a job well done since, throughout their lives. All the achievements they have obtained have cost them more effort and have had more difficulties.

By contrast, students in ordinary schools have a better score in terms of persuasion and dialogue with peers, i.e., they are more confident in their ability to influence the thinking and behavior of their peers when it comes to carrying out an action through words.

## 6. CONCLUSION

In the current context, it is important for inmates in penitentiary institutions to develop transversal competencies that guarantee greater durability and respond adequately to the sociocultural reality of freedom. When analyzing educational programs, it is observed that there is no systematic evaluation of them. It is also verified that on many occasions there are programs directed by the good will of the people, but they require a greater professionalization of the pedagogical aspects. In general conclusions, the following stand out:

- Inmate students, in general terms, present a high or very high entrepreneurial potential.
- Inmate students show very high results in the motivation dimension. By contrast, they have low results in the leadership dimension.
- On a comparative level, inmate students show better entrepreneurial potential than students in ordinary schools in general terms by educational levels and by dimensions.

## 7. EDUCATION POLICY IMPLICATIONS

The entrepreneurial potential of the inmate students has been evaluated through the ATE-S questionnaire proving that the least developed dimension is that of leadership. When comparing it with their teachers, they clearly understand that it is a reaction of the students to their survival in the institution, preferring to go unnoticed. This is therefore one of the aspects that should be developed if we want to satisfactorily respond to the premise of the goodness of transversal competencies and especially of entrepreneurial competencies.

Inmate students should reconstruct their lives based on a rereading of their personal history to define their goals in life and the timeframes and means to achieve them. Entrepreneurial competence is linked to entrepreneurial potential, and both make up the entrepreneurial identity which is one of the dimensions of personal identity. In the moments of transition between prison and freedom, aspects of leadership should be developed. On the other hand, workshops should include a greater dedication to transversal competencies that develop their future employability, not focusing on immediate demands but looking at the long term. Finally, the approach to classes in the different training programs should include achievable challenges and creative and motivating methodologies. All of this is part of a change of mentality in penitentiary institutions, which should prioritize re-educational aspects, improve processes and evaluate procedures.

Among the limitations, the following stand out: only analyzing the entrepreneurial potential of the male group and the study of a single penitentiary center. Therefore, for future research it would be interesting to evaluate the entrepreneurial potential of the female group and of different penitentiary centers as well which would allow for a greater generalization of the results.

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## REFERENCES

- Alba, J. L., Garrido, V., López, M. J., Burgués, M., Alcázar, M., López, J., & Chordi, F. (2005). The prosocial thinking program Short version for young people. *Manual De Intervención Educativa en Readaptación Social*, 2, 95-489.
- Alba, R. J. L. (2008). *The treatment of juvenile offenders under the current juvenile law*. Doctoral Dissertation, Universitat de València.
- American Civil Liberties Union. (2024). *America's addiction to juvenile incarceration: State by state*. Retrieved from <https://www.aclu.org/issues/prisoners-rights>
- Añaños, F. T., Fernández-Sánchez, M. P., & Llopis, J. J. (2013). Approaching prison contexts a socio-educational perspective social pedagogy. *Revista Interuniversitaria*, 22, 13-28.
- Auxilia. (2024). *Auxilia, une nouvelle chance*. Retrieved from <https://www.asso-auxilia.fr>
- Ayuso, A. (2000). Socio-educational intervention in penitentiary treatment *Social Pedagogy: Interuniversity Journal Segunda Epoca*, 6-7, 73-99.
- Azqueta, A., & Sanz, R. (2022). Competencies linked to personal growth. In A. Bernal (Coord.). *Entrepreneurial identity towards an educational model*. In (pp. 237-265). Valencia: Tirant Humanidades.
- Bernal, A. (2015). On the relevance of the personal factor in research on entrepreneurial education. In J. Núñez-Cubero (coord.) *Entrepreneurial culture and education*. In (pp. 127-132). Sevilla: Editorial Universidad de Sevilla.
- Bernal, A. (2021). Conceptual foundation. In A. Bernal (ed.). *Entrepreneurial education foundations and elements for pedagogical transfer and innovation*. In (pp. 17-33). Madrid: Síntesis.
- Bernal Guerrero, A., Cárdenas Gutiérrez, A. R., & Athayde, R. (2021). Entrepreneurial potential test: Adaptation to Spanish (ATE-S). *Bordon-Revista de Pedagogía*, 73(1), 19-37.
- Brink Literacy Project. (2018). *Frames prison programme reporting package*. Retrieved from <http://www.brinklitter.org/wp-content/uploads/2019/02/Frames-Prison-Program-Report-2018.pdf>
- Cantero, F. G. (2010). Pedagogical action in prisons possibilities and limits. *Revista Española de Pedagogía*, 245, 49-64.
- Caride, J., & Gradaílle, R. (2013). Educating in prisons: New challenges for social education in penitentiary institutions. *Revista de Educación*, 360, 36-47. <https://doi.org/10.4438/1988-592X-RE-2013-360-219>
- Contreras, M., & Frías, M. (2015). Evaluating the effectiveness of the prosocial thinking program. *Psicumex*, 5(2), 93-108. <https://doi.org/10.36793/psicumex.v5i2.283>
- Dantas, A., Leite, C., & Reis, A. M. (2023). Education policies in prisons: An analysis of the 10 largest prison populations. *Revista Brasileira de Educação*, 28, 1-22.
- De Alós-Moner, R., Esteban, F., Jódar, P., Miguélez, F., Alcaide, V., & López-Roldán, P. (2011). *The employment of former inmates of penitentiary centers in Catalonia*. Barcelona: Generalitat de Catalunya.
- Del Pozo, F. J. (2017). Education in Spanish prisons: Training and socio-educational action with drug-addicted inmates. *Educación XX1*, 20(2), 343-363.
- Downes, P. (2014). *Access to education in Europe: A framework and agenda for system change*. London: Springer.
- European Commission. (2013). *Communication from the commission entrepreneurship 2020 action plan. Reviving entrepreneurship in Europe, COM. (2012) 795 final, 9 January 2013*. Brussels: European Commission.
- García, L. S. (2016). Educational intervention in prison: Memory and desire. *Revista de Educación Social*, 22, 159-173.
- Gobierno. (1966). *Royal decree 190/1996 approving the penitentiary regulations. (BOE, 15 February 1996)*. Madrid: Ministry of Justice and Home Affairs.
- Grench, E. (2020). *Summer reading list: Book drive helps teens behind bars in the bronx the city*. Retrieved from <https://www.thecity.nyc/2019/07/16/summer-reading-list-book-drive-helps-teens-behind-bars-in-the-bronx/>
- Guerrero, A. B., & Gutiérrez, A. R. C. (2014). Entrepreneurship training at school and its impact on the personal sphere a narrative research focused on the EME program. *Revista Española de Pedagogía*, 72(257), 125-143.
- León, P. D. L., López-Armijos, G., & Camacho, R. (2021). University training programs in penitentiary centers. *Andamios*, 18(45), 487-509.

- Lorenzo, M., Quiroga-Carrillo, A., & García-Álvarez, J. (2022). Transversal skills and employability: A challenge for penitentiary pedagogy. *Revista Complutense de Educación*, 33(2), 191-200. <https://doi.org/10.5209/rced.73712>
- Martín-Solbes, V. M., Vila, E. S., & De Oña, J. M. (2013). Educational research in the field of penitentiary institutions: Overview, challenges and proposals. *Revista de Educación*, 360, 6-35. <https://doi.org/10.4438/1988-592X-RE-2013-360-218>
- Martín, S. V. M. (2006). *Attitudes of prisoners under twenty-one years of age towards the re-educational function of the penitentiary environment in Andalusia*. Doctoral Dissertation, Universidad de Málaga.
- Moledo, M. L., Montolío, C. A., & Robles, J. L. A. (2013). Penitentiary education in Spain: A mixed bag. *Revista de Educación*, 360, 119-139.
- Murillo, L. W. (2019). prison college education: Achievements, difficulties and needs. *Revista Educación*, 43(2), 307-326. <https://doi.org/10.15517/revedu.v43i2.31967>
- Peña, J. V., Cárdenas, A. R., Rodríguez, A., & Sánchez, E. (2015). Entrepreneurial culture as an educational objective: General framework and state of the art. In J. Núñez-Cubero (coord.) *Entrepreneurial culture and education*. In (pp. 19-59). Sevilla: Editorial Universidad de Sevilla.
- Rychen, D. S., & Salganik, L. H. (2003). *Key competencies for a successful life and a well-functioning society*. Göttingen: Hogrefe & Huber.
- Santos-Rego, M. A., & Lorenzo, M. (1996). Penitentiary policy and legislation in Spain. What is the educationalist interested in knowing? *Revista de Educación*, 311, 255-278.
- Secretaría General De Instituciones Penitenciarias. (2022). *Informe general 2021*. Madrid: Ministerio del Interior.
- Storybook Dads. (2023a). *Storybook dads*. Retrieved from <https://www.storybookdads.org.uk/>
- Storybook Dads. (2023b). *Annual review 2022*. Devon, UK: Storybook Dads.
- United Nations. (1976). *International covenant on economic, social and cultural rights*. United Nations: Social and Cultural Rights.
- United Nations. (1990). *Basic principles for the treatment of prisoners*. New York: United Nations.
- United Nations Development Programme (UNDP). (2019). *Juba Central prison vocational training: Impact stories*. Retrieved from <https://reliefweb.int/report/south-sudan/juba-central-prison-vocational-training-impact-stories>
- United Nations Development Programme (UNDP). (2022). *More [than] 251 inmates graduate at Juba and Wau prisons after completing transformative vocational training*. Retrieved from <https://www.undp.org/south-sudan/press-releases/more-251-inmates-graduate-juba-and-wau-prisons-after-completing-transformative-vocational-training>
- Valderrama, P. (2013). The micropolitics of the re-education function in prison. *Revista de Educación*, 360, 69-90. <https://doi.org/10.4438/1988-592X-RE-2013-360-221>
- Vera, E., & Alberto, J. (2010). Imprisonment, its psychological effects and its evaluation. *Academia. Revista Pensando Psicología*, 6(11), 157-166.

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