Recognition of moral values in university students

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Abstract

The importance of encouraging both cognitive and moral development in the classroom is highlighted. To achieve this, 323 students were initially assessed on the values of support (affection), conformity, recognition, independence, benevolence, and leadership using Gordon's Interpersonal Values Questionnaire. The sample was chosen conveniently due to interest in examining the moral growth of young people entering university. Based on the results, a moral development project was conducted during their first semester, utilizing a comic strip featuring real-life situations created by teachers for the tutoring program at the National Polytechnic Institute. Students engaged in group and individual activities weekly, inspired by the comic strip. The findings indicated a significant positive shift in the values of leadership, independence, and benevolence. The work done during the semester appears to have fostered interpersonal values centered on autonomous and prosocial leadership rather than adherence to external norms or seeking approval. The research in the current literature also confirms that educational activities can promote ethical leadership, reinforce benevolence associated with trust, collaboration, and well-being, and encourage autonomy—aligning with shifts toward values focused on personal and social growth.

Keywords: Higher Level, Independence, Leadership, Moral Values.

1. Introduction

1.1. Background to the Study

The education of young people has gone through different stages driven by social needs, focusing on specific aspects. Moral values training has been overlooked during certain historical periods, even at the elementary level. Meanwhile, intellectual development has been emphasized, and the importance of nurturing social and moral judgment has been

minimized or considered outside the scope of school.

Today, it is crucial to revive the values that give society meaning. In the classroom, practicing a value involves decision-making, analysis, synthesis, inductive reasoning, and other activities, as well as experiences that become very important factors in understanding and developing problem-solving strategies. Therefore, the guiding question for this work was: Does collaboration and individual effort through managing real situations help students change their moral values?

The purpose of the study was to identify levels of certain interpersonal values in students beginning higher education at a school of the National Polytechnic Institute in Mexico City. To do this, the tool developed by Gordon [1] called the Survey of Interpersonal Values (SIV), was used. Based on the results, teachers implemented a project within the tutoring program to promote the development of these values in students and, in turn, enhance specific attitudes, cognitive processes, and social skills such as proactivity, creativity, empathy, and more.

Technological and scientific advances have enhanced human life in many ways and brought social changes that influence human behavior. In this regard, Rowland [2] analyzed more than 4,000,000 adults. He found that continuous use of technology significantly lowers the risk of cognitive decline. However, he emphasizes that it is crucial to choose applications that benefit memory, attention, and mental processing. In the field of education, Brodwin [3] notes that specific digital tools strengthen cognitive skills and support ongoing learning. Nevertheless, technological development is primarily reflected in material aspects, such as the tools available to educational institutions, including computers, mobile devices, and audiovisual equipment. Unfortunately, this progress does not translate into the moral development of students.

For Friedrich, et al. [4] morality has been connected to human actions, depicted as a free individual capable of making decisions based on knowledge and willingness. According to Kohlberg [5] education plays a crucial role in moral development throughout the life span, as it encourages students to engage with their social environment, aiming to gradually develop their awareness and judgment in different situations. Kohlberg also introduced a six-stage theory of moral development, where morality is built through logical reasoning and progresses from blind obedience to universal ethical principles. Turiel [6] distinguished among moral, conventional, and personal judgments. He defined morality as norms that protect well-being and human rights, independent of authority or conventions.

In a study conducted by Vera-Estay, et al. [7] they found a positive correlation between the moral reasoning of university students and the development of executive functions, such as cognitive flexibility, conceptual reasoning, and verbal fluency, which raises concerns about a decline in students' moral development. In this era, young people face ethical dilemmas concerning trust, tolerance, self-respect, and mutual respect [8].

Regarding the development of students' moral values, there has been a decline, as pointed out by Yuguero, et al. [9]. Young people are unable to take responsibility for their actions and constantly try to justify their mistakes, which means they have no opportunity to learn from them or to grow, considering the awareness they need to develop in response to the various situations that life presents to them [10].

When it comes to higher education students, values are also connected to developing skills needed at a professional level, since it is not only essential to build intellectual abilities and gain knowledge specific to their careers, but also to develop both personal and interpersonal values, as these will help them perform competently in the workplace [11].

Therefore, the most obvious indicators are low school achievement rates, poor academic performance, and dropout rates, among others. Additionally, there is a growing lack of interest and responsibility, not to mention increasing negativity, violence, and aggression that are becoming more noticeable and tangible Qincho-Apumayta [12]. Hafidhi, et al. [13] also reported that during the pandemic, many secondary school students displayed a decline in values such as justice and responsibility during online learning, which was linked to disinterest and lower academic performance.

Faced with this problem, teachers, regardless of their assigned role [14] must be much more creative to break away from traditional teaching methods and seek alternatives that incorporate different aspects, such as stimulating interest (motivation and feelings) and promoting respectful behavior (ethics). They should also use active methodologies that foster intellectual development, as there is a strong need to connect students with their reality and help them recognize their strengths and weaknesses. This approach ensures that their academic growth aligns with their human development. One of the many goals of competency-based education can be achieved [15]. Integrating these different aspects also requires teachers to have a clear and objective understanding of the environment they are in, the goals they aim for, and the tools available to them. With this knowledge, they can develop a work plan that guides them toward achieving those goals [16]. To accomplish this, it is crucial to challenge traditional patterns that often lead to failure in these contexts. Therefore, this work begins with transparent and objective observation of the situation, helping us to move beyond preconceived judgments that blind us to the actual reality [17, 18].

1.2. Theoretical Aspects

This section discusses theories related to both the cognitive and moral aspects of individuals. It also describes the instrument used to measure specific moral values in students, along with its validation by some researchers.

Various theories support each other so that everyone can build their knowledge. The most influential is Piaget's theory [19] which relates to the parallel development of intellectual and moral growth. The first pertains to a maturation process that children must go through to move from one stage to another. In contrast, the second relates to moral development, based on the idea of justice, evolving from the heteronomous stage to autonomy, involving feelings, values, and a transcendental understanding of life. Although Piaget [20] presented his theory as an integrated whole, the intellectual and moral areas have often been analyzed separately. The theories of Ausubel [21] and Rigopouli, et al. [22]

are also considered because of their support for developing areas that are "dormant," and this highlights the need to focus on them.

Ausubel [21] argues that meaningful learning arises from internal motivations, leading to knowledge that remains more durable over time. Goleman [23] contends in his theory that acknowledgment, acceptance, management, and expression of emotions are crucial for people's performance in various developmental areas. He also expands his model of emotional intelligence to include organizational leadership. In accordance with Piaget's theory, he suggests human development occurs through the maturation of cognitive and moral processes, driven by an adaptive cycle of assimilation, accommodation, and equilibration. Perception, a key element in the construction of thought, is heavily influenced in today's society by an overload of information, which highlights models serving as frames of reference—models to be copied—stemming from the creation of needs that seem fundamental yet are not actually essential.

Returning to authors such as Babakr, et al. [19], Piaget [20], Goleman [23], Ausubel [21] and Rigopouli, et al. [22] serves as a reference point for understanding both psychological and sociological flaws or weaknesses, as well as alternative solutions to these shortcomings. Based on our current reality, which requires us to begin with the "real" perception of observed events until societal needs impose their influence, this proposal is grounded within that framework. It visualizes the current social reality and aims to help young people discover and build an integrated, non-fragmented self that can utilize its abilities based on knowledge and recognition of its intellectual and emotional potential. By developing these skills, individuals can improve themselves and find transcendent meaning through awareness of their personal path.

The work proposal takes into account the observations of Piaget, Ausubel, Vygotsky, and Gordon, who emphasize that understanding is shaped by processes related to collaborative learning. In this way, we aim to encourage students to analyze real-life situations through comics that illustrate how they encounter problems and the effects of using or not using universal values, so they can consciously develop skills and abilities that help their understanding of science.

Regarding the instrument used to measure specific values, Gordon [1] comments that values can serve as a means of understanding what subjects do and how they do it; many of their immediate decisions or long-term plans are influenced, both consciously and unconsciously, by the value system they choose to adopt. Personal satisfaction mainly depends on how well these values are expressed in daily life. Values such as support, conformity, acknowledgment, independence, benevolence, and leadership in students shape their personality and attitudes toward various demands of school life.

Gordon [1] proposed the Survey of Interpersonal Values (SIV), which measures the six values mentioned above, defined below.

- Support (S): refers to the desire to be helped, supported, or protected. The person prefers relationships where they receive care, affection, or guidance.
- Acknowledgement (A): This involves seeking approval, praise, status, or admiration from others—the desire to be noticed or recognized.
- Conformity (C): This refers to the desire to adhere to social norms, rules, or expectations. It emphasizes obedience, order, and discipline.
- Independence (I): focuses on the desire for personal freedom, making decisions independently and acting without relying on others.
- Benevolence (B): pertains to the desire to help others, to be generous, fair, and understanding. It includes altruism and compassion.
- Leadership (L): The desire to influence others, direct, organize, or take control. It involves assertiveness and decision-making.

The Gordon Survey of Interpersonal Values (SIV) has been validated in various Latin American settings and has empirical evidence supporting both its factorial and external validity. It was translated and adapted by Higueras and Pérez [24] demonstrating factorial validity and external validity, with high correlations to other measures like the Gordon Personality Inventory. SIV is used to assess interpersonal values in adolescents and young adults.
Another study supporting the psychometric properties of the instrument was conducted by Merino, et al. [25].

1.3. Use of SIV in Educational Research

López González, et al. [26] explored the relationship between emotional intelligence and ethical leadership skills in university students from three countries—Chile, Mexico, and Spain. The hypothesis was that higher emotional intelligence is linked to better leadership skills. Sánchez-Queija, et al. [27] used the SIV and concluded that interpersonal values can develop significantly during adolescence, especially in structured educational environments. Thien, et al. [28] examined how leadership based on values—such as benevolence, care, and compassion—improves the preparation of school leaders. They support the findings on the connection between benevolence and leadership. Gardner and Wickramasinghe [29] demonstrated that the benevolent dimension—genuine concern for others—is a key factor in promoting prosocial behaviors in organizational settings.

Ortega and Hernández [30] examined the relationship between interpersonal values (measured with SIV) and learning styles. They identified a moderate presence of interpersonal values and a strong positive correlation with active learning styles, which formed the basis for designing pedagogical interventions. Flores Morales and Huamani [31] linked interpersonal values (SIV) to levels of critical thinking and found that over 60% exhibited high levels of values, with critical thinking mainly at the medium level. They suggest that fostering interpersonal values can improve academic critical thinking. Navarro Olivares [32] studied the connection between interpersonal values and social skills. He

discovered a high prevalence of Independence (81%), Support (79%), and Acknowledgement (63%), but a low level of Benevolence (24%). He observed positive correlations between social skills and values such as Benevolence, Conformity, and Leadership, and negative correlations with values like Independence and Acknowledgement.

2. Methods and Materials

The study was exploratory and descriptive in scope, according to Hernández-Sampieri and Mendoza [33]. Its nature was mixed because the variables were quantified and allowed for describing qualitative aspects of the students' work.

2.1. Participants/Sampling Technique/Procedure

A convenience sample was used because the study focused on students in their first semester of university, aged 18 to 19. The goal was to understand the values they had developed at that time, which were linked to their family and academic backgrounds, before they identified with their new school. Therefore, the aim was to determine the values students express in their relationships with others and their social adaptation, helping to identify areas for improvement. For this purpose, first-semester students from an academic unit of the National Polytechnic Institute (IPN) were invited to participate.

First, a meeting was held with the institution's administrators and the Ethics Committee, who were informed of the research goal and that student participation would be voluntary. They were also told that responses to the Survey of Interpersonal Values would remain anonymous and confidential. The data would be analyzed collectively, without identifying any individual. It was emphasized that the study would provide valuable insights for developing teaching strategies that include fostering specific moral values.

The students were informed about the purpose of the research, that their participation would be completely voluntary, and that they could choose not to answer any questions or withdraw at any time without penalty. They were told about the confidentiality of their data and given instructions on how to complete the questionnaire. A total of 323 students participated voluntarily, signing their informed consent.

2.2. Survey of Interpersonal Values

The SIV consists of 90 items or statements, arranged in groups of three. These items evaluate six values: support, conformity, recognition, independence, benevolence, and leadership. Since the 90 items are grouped in threes, the person must select the item they find most important or feel most connected to, as well as the one they consider least important or feel least affinity with. They should leave one item in each group of three unselected. The choices are made in the three columns to the right of the statements. The first column has a (+) sign, the second is empty, and the third has a (-) sign. A cross (x) in the column with the (+) sign indicates the statement is considered the most important of the three. A cross in the (–) column shows that the statement is the least important. The statement not chosen as either most or least important should remain unmarked.

2.3. Implementation of the SIV

Each of the 323 students received a printed questionnaire. The questionnaire was administered on a school day and took between 20 and 25 minutes to complete. The data was collected in an Excel spreadsheet. The questionnaire is scored as follows: the most important item selected is awarded 2 points, the least important item gets no points, and the unselected items receive 0 points. Each item assesses one of the following values: support (S), conformity (C), acknowledgment (A), benevolence (B), independence (I), and leadership (L).

2.3.1. Project Performance

According to the test results, strategies and activities were developed to help teachers record observations in the classroom over a full semester (August-December 2024). This aimed to monitor student behavior and development, to recognize, teach, and promote specific values that could enhance their academic, professional, and daily life performance. At this stage, the goal was to understand how students responded to being taught specific values introduced through a project called "Transforming the World and Achieving a Dream," which was a comic strip created by teachers at the school where the study took place. Through the comic strip, students engaged in a series of teacher-guided activities once a week for 15 minutes. These activities aimed to help students practice observation, description, inductive reasoning, awareness, application, analysis, and synthesis through reading. By analyzing the situations in the comic strip, students could express their ideas in writing, which would then be discussed in class. This activity encouraged students to think critically by teaching them to observe—an essential skill for learning (whatever it is being taught) and for integrating the reviewed values into their daily lives. These values come from both theoretical knowledge and reflection on personal experience. Additionally, inquiry (or research) relies on observation (without interpretation) of what is perceived. This represents a common challenge, as both students and teachers tend to interpret what they see instead of simply observing.

The values focused on during the semester were: Benevolence, demonstrated through group participation and interaction among students; Independence, shown through individual effort; Conformity, reflected in discipline, timely submission of assignments and projects; Leadership, expressed through group involvement; Support, conveyed through respect and honesty; and Acknowledgment, through integration and identification as a university student. In the classroom, these values were assessed based on the teacher's observations of students' behavior, the professionalism of their work submissions, the quality of their assignments, their classroom participation, and other relevant factors.

3. Results and Analysis

3.1. Data Analysis

This section presents the results from the Survey of Interpersonal Values, which are organized into tables. The scores for each value were recorded for each student and categorized into three levels: low, medium, and high. Table 1 displays the classification. High scores reflect what the student values most in interpersonal relationships. Lower percentages may suggest that the student values certain attitudes or social motivations less or even rejects them.

Table 1.

Classification of values into three levels.

Interpersonal value	Low Level	Medium	High Level
S (support)	≤ 12	13 – 15	> 15
A (Acknowledgement)	≤ 16	17 – 19	> 19
C (Conformity)	≤ 11	12 – 14	> 14
I (Independence)	≤ 14	15 – 17	> 17
B (Benevolence)	≤ 13	14 – 16	> 16
L (Leadership)	≤ 15	16 – 17	> 17

Table 2 presents statistical data for each value, the mean, standard deviation, minimum, and maximum values.

Table 2.

Statistical values of the SIV results

Interpersonal value	Mean	Standard Deviation	Min.	Median	Max.
S (support)	13.42	3.13	5	13	22
A (Acknowledgement)	17.48	3.37	8	17	25
C (Conformity)	12.56	2.94	4	13	22
I (Independence)	15.72	3.28	6	16	26
B (Benevolence)	14.76	2.78	8	15	23
L (Leadership)	16.06	3.17	7	16	25

Based on the average values obtained (Table 2), most students were at an intermediate level among the three levels used to classify the six interpersonal values. However, to gather more information, and using the classification of values by level shown in Table 1, a count was conducted, with the data summarized in Table 3.

Table 3.

3-level classification.

Interpersonal value	Low	Medium	High	Total%	Low	Medium	High
S (support)	125	115	83	323	38.70%	35.60%	25.70%
A (Acknowledgement)	121	110	92	323	37.50%	34.10%	28.50%
C (Conformity)	123	123	77	323	38.10%	38.10%	23.80%
I (Independence)	111	118	94	323	34.40%	36.50%	29.10%
B (Benevolence)	109	128	86	323	33.70%	39.60%	26.60%
L (Leadership)	136	87	100	323	42.10%	26.90%	31.00%

- Regarding the support value, which refers to the desire to be treated with understanding and consideration, the highest percentage (38.7%) was at a low level. This may indicate that students at this level do not see it as essential to treat or be treated with consideration. In contrast, 35.6% of students were at a medium level, and 25.7% were at a high level, showing that most students believe receiving kind treatment is essential and expect their teammates, the group overall, and the teacher to treat them with kindness and regard.
- • The value of acknowledgment was higher at the low level (37.5%), indicating a low tendency not to seek approval or social prestige. However, a group of students (28.5%) finds it necessary. They see it as essential to be approved by their peers and for the teacher to recognize them in the classroom, which means they feel the need to be acknowledged during various school activities.
- Regarding the conformity value, the low and medium levels both had the same percentage (38.1%), indicating that they are generally not comfortable following rules and regulations, and seem to be resistant to authority.
- The highest percentage (36.5%) of the independence score corresponded to the medium level, which may be related to the fact that students demonstrate initiative and autonomy. When combined with the percentage of students who are at a high level of the independence score (29.15%), it shows that independence is a value that is relatively highly regarded among the student sample.

The value of benevolence had a higher percentage (39.6%) at the secondary level, indicating that students consider supporting their classmates a moderately significant value.

- Many students did not prioritize the Leadership value, as 42.1% were at a low level, although a portion (31%) still regarded it as necessary.

A summary of the results by level for each value is shown in Table 4.

Table 4.
Trends found in the SIV.

Observed trends	Highlighted values
Higher proportion of low levels	Leadership (L), Support (S)
Higher proportion of elevated levels	Independence (I)
Value with a more balanced distribution	Acknowledgment (A), Benevolence (B)
Value with fewer students at a high level	Conformity (C)

Table 4 shows a trend among students to be independent, working at their own pace, with few rules to follow. They exhibited a moderate tendency to support their peers and seek recognition for their work, but these young people can find it frustrating to go unnoticed by classmates or the teacher. Conversely, they did not show much interest in becoming team leaders; that is, they did not see leadership as a pressing need. This suggests that they lack the desire to influence their groups, nor did they show any intention of leading a project or assigned task. The need to be understood was also moderate. Principal components analysis (PCA), using a simple form of exploratory factor analysis (EFA), was also conducted on the Gordon Questionnaire scores. The results are shown in Table 5.

Table 5.
PCA analysis using EFA.

Interpersonal value	Component 1	Component 2
S (Support)	13.42	3.13
A (Acknowledgement)	17.48	3.37
C (Conformity)	12.56	2.94
I (Independence)	15.72	3.28
B (Benevolence)	14.76	2.78
L (Leadership)	16.06	3.17

Note: PCA (Principal Component Analysis). EFA (Exploratory Factor Analysis).

Component 1 was found to be primarily influenced by the values of acknowledgement (A) and conformity (C), which are in opposite directions. Component 2 is influenced mainly by the values of independence and leadership, also with loadings in opposite directions. This indicates that values could be arranged into two underlying dimensions, potentially related to social norms orientation versus autonomy, and affiliation/dependence versus leadership/self-affirmation.

According to the results found, a project was conducted during the August-December 2024 school semester to help students reflect on the importance of developing values such as respect, honesty, discipline, and those related to what Goleman [23] describes. The teachers of the groups noted on their lists the timely submission of homework and tasks left unfinished during the semester. They also observed class participation and collaboration with their team in developing the assigned work, regular class attendance, and participation in discussions that took place after working with the comic. At the beginning of the project, the teachers of the students who had participated in answering the SIV were approached, and they were provided with a rubric featuring a 3-level scale: low, medium, and high, for each of the six values, with descriptions of activities corresponding to each value. Based on their observations and interactions with their students during the August-December 2024 semester, teachers completed an Excel table, tracking activities such as whether students submitted assigned tasks on time, participated with their teammates in developing the work, treated their classmates with respect and kindness, listened during discussions of the situations reviewed in the comic, and showed interest in the topics raised.

Table 6.
Rubric for assessing students' daily work

Interpersonal value	How to evaluate it	Low level	Medium level	High level
Support (desire to be treated with understanding)	Demonstrate interest in their colleagues' work	The student did not seem to need to be understood.	The student showed a moderate desire to be understood by his classmates and teacher.	The student demonstrated a strong desire to be better understood by his classmates and teacher.
Conformity (the desire to act in a socially acceptable manner)	Formalities for submitting assignments and tasks	The students often submit assignments late or of poor quality.	Most of the time, he submitted assignments and projects on time and of good quality.	The students consistently submitted assignments and projects on time.
Acknowledgement of being accepted by others	Express a desire to be recognized.	The student showed little interest in being acknowledged by his peers.	The student showed interest in being acknowledged by their peers and teacher.	The student showed a strong interest in being acknowledged by his peers and teacher.
Independence (being able to act according to one's criteria)	Demonstrate creativity, initiative, and the ability to work independently.	The student relied heavily on his teammates, demonstrating limited creativity and initiative in his work and classroom performance.	The student demonstrated moderate creativity and initiative in completing assignments and participating in the classroom.	The student did not rely on his peers to meet requirements. He demonstrated high creativity and initiative when developing assignments and performing in school.
Benevolence (interest in helping others)	Engagement and interaction with your team	Minimal interaction with peers	Moderate engagement with peers.	High level of interaction and engagement with classmates
Leadership	Assume the role of a team leader and make decisions.	The student did not organize tasks for the team members, failed to take responsibility for timely delivery, and did not make decisions.	The student made some decisions for the team, but he couldn't organize his teammates.	The student organized the tasks for the team members and ensured they were completed on time. He also made decisions.

Source: Own elaboration with the support of the participating teachers.

Table 7 presents the frequency and percentage data derived from the lists created by the teachers based on the rubric.

Table 7.
Summary of the data provided by teachers based on the rubric.

Interpersonal value	Low (f)	Low (%)	Medium (f)	Medium (%)	High (f)	High (%)
S (Support)	102	33.4%	141	41.8%	80	24.8%
A (Acknowledgement)	133	35.0%	119	41.2%	71	23.8%
C (Conformity)	108	41.5%	130	35.3%	85	23.2%
I (Independence)	64	19.8%	132	35.9%	127	44.3%
B (Benevolence)	47	14.2%	159	48.3%	117	37.5%
L (Leadership)	67	22.0%	103	27.9%	153	50.2%

Note: Low (f): low level expressed in frequency. Medium (f): medium level expressed in frequency. High (f): high level expressed in frequency.

Table 8 shows the percentages for both the SIV resolution and the corresponding heading.

Table 8.
Comparative table between the results of the SIV questionnaire and the work carried out after one semester.

Interpersonal value	High (before)	Medium (before)	Low (before)	High (after)	Medium (after)	Low (after)
S (Support)	25.7%	35.6%	38.7%	24.8%	41.8%	33.4%
A (Acknowledgement)	28.5%	34.1%	37.5%	23.8%	41.2%	35.0%
C (Conformity)	23.8%	38.1%	38.1%	23.2%	35.3%	41.5%
I (Independence)	29.1%	36.5%	34.4%	44.3%	35.9%	19.8%
B (Benevolence)	26.6%	39.6%	33.7%	37.5%	48.3%	14.2%
L (Leadership)	31.0%	26.9%	42.1%	50.2%	27.9%	22.0%

When comparing the conformity score from the values questionnaire taken at the start of the semester with the one taken afterward, it was observed that more students are at a low level, indicating a strong tendency among students not to follow rules. It appears they are uncomfortable being told what they must submit for the course and what they have to do. In terms of leadership, there was a significant positive change, as it shifted from a low level in the SIV to a high level. It seems they have become aware that they are now in their careers and that making decisions and managing a group are necessary steps, thus preparing themselves for working life. Regarding benevolence and independence, the highest percentage remained at a medium level, which demonstrates their creative, independent spirit and that they feel comfortable supporting their peers.

In terms of support, the percentage increased from a low to a medium level, suggesting that students have recognized the importance of being treated with kindness and understanding by others, and that they should reciprocate by treating others the same way.

Regarding the value of acknowledgment, it increased from a low to a medium level, indicating that classmates and teachers should consider it in activities. The McNemar test was used because it is a nonparametric test suitable for comparing changes in responses that are dichotomous and is also applicable for paired data [34] meaning data collected from the same sample. In this case, the same sample was used, as the teachers reported on the work of the same students who completed the SIV questionnaire. Table 9 compares the 323 students' results between their SIV scores and the teachers' assessments after the semester's work, using the McNemar test. The comparison focused on high-level and non-high-level categories (including low and medium levels) for each of the six values.

Table 9.
Data obtained using the McNemar test.

Interpersonal value	2×2 matrix (before vs. after)	Chi²	p-value	Significant Change?
S (Support)	[[187, 53], [56, 27]]	0.04	0.8481	No
A (Acknowledgement)	[[177, 54], [69, 23]]	1.59	0.2068	No
C (Conformity)	[[190, 56], [58, 19]]	0.01	0.9254	No
I (Independence)	[[127, 102], [53, 41]]	14.86	0.0001	Sí
B (Benevolence)	[[146, 91], [56, 30]]	7.86	0.005	Sí
L (Leadership)	[[104, 119], [57, 43]]	21.14	< 0.0001	Sí

Table 9 shows a significant change in the levels of independence, benevolence, and leadership between the results of the SIV questionnaire and their post-semester outcomes. Specifically, more students reached the high level of these values after working during the semester.

4. Discussion

A review of specific interpersonal values was conducted among university students using the SIV questionnaire, and the results were compared with data obtained by teachers after working with the students for a semester. The value of leadership experienced a significant change, rising from a low to a high level, indicating that initially, the students were hesitant to take responsibility and accept others' opinions. However, over time and through the work done during the semester, the students generally gained confidence, especially when they were made to realize that their professional future would involve decision-making that leads to success—not only for themselves but also for their work team and the company they represent. Proper use of emotions fosters ethical leadership, and teachers should include activities that develop emotional intelligence, as suggested by López González, et al. [26]. In this regard, these researchers found that ethical leadership in students is related to emotional intelligence, particularly the ability to manage and utilize one's own emotions, thus emphasizing the need to incorporate emotional development into university education to improve leadership.

Regarding the value of benevolence, a notable improvement was also observed. Part of the progress in both leadership and benevolence can be attributed to the work done by the teachers during the semester as part of the project. This involved both group and individual work, as well as group discussion sessions where situations from the comic strip were discussed, emphasizing the support, respect, and commitment that should exist among group members.

This result resembles what Thien, et al. [28] found when applying the SIV to university students, as they examined how leadership based on values (benevolence, care, and compassion) improves the preparation of school leaders. It also aligns with the findings of Flores Morales and Huamani [31] who linked interpersonal values (SIV) to levels of critical

thinking and suggested that fostering interpersonal values can boost academic critical thinking. Regarding the value of independence, although students initially showed a moderate level, this increased as they developed creativity and initiative in their work and classroom performance, allowing students to take control of their futures. This finding is similar to Navarro Olivares [32] who analyzed the relationship between interpersonal values and social skills, noting a high prevalence of independence (81%).

Regarding the value of conformity, 41% of students disagreed with specific rules set by teachers, such as assignment deadlines and assessment methods. This was reflected in a decline in the value of conformity, as most now ranked it at a low level. This suggests that students are in a stage of exploring or questioning rules and norms, which means it is necessary to continue working with them. If this value keeps declining, students might start to see breaking rules as usual, which is not the case, and they could develop behavioral problems that impact their academic performance and later their work performance. As Ranjbar, et al. [11] point out, it is essential to acquire both personal and interpersonal values, as these will help them perform competently in the workplace.

The desire to receive support and to prefer relationships where they get attention also changed. At first, being treated kindly was not important to them, but they realized it is essential to belong to groups where understanding and respect are fundamental. This aligns with what Goleman [23] said about the importance of recognition, acceptance, management, and expression of emotions in people's performance.

Despite being in higher education, it is still difficult for them to envision their future. Some do not know if they have chosen the right career path, and others are there because their parents decided it for them. In short, there are various situations that teachers focus on when talking to them about making the most of every moment and opportunity to learn, since everything is knowledge. As this knowledge becomes more prosperous and more diverse, it will help them improve, broaden their perspective, and enable them to make better decisions. Nothing will stop them from reaching their goals.

5. Conclusion

Group dynamics, active roles, and activities carried out by teachers as part of the school's tutoring program during the first semester fostered autonomy in decision-making. The semester's work appeared to enhance students' self-efficacy, making them more confident in making decisions for themselves. This change is positive, especially in educational settings that aim to develop critical and responsible students. Additionally, the activities promoted empathy, collaboration, and ethical reflection, aligning with modern pedagogy focused on cultivating positive leaders. The decline in attitudinal values (responsibility, commitment, justice) is linked to low performance, failure, dropping out of school, decreased motivation, and reduced self-efficacy. Educational interventions that strengthen these values have shown improvements in academic performance, particularly at the primary and university levels. Therefore, it is recommended to reinforce a sense of community, respect for others, and prosocial attitudes, and encourage the development of social and ethical skills.

References

[1]   L. Gordon, *Manual for survey of interpersonal values*, 1st ed. Chicago: Science Research Associates Inc, 1993.
[2]   T. Rowland, "Study links technology use to lower risk of cognitive decline," 2025. https://www.washingtonpost.com/wellness/2025/05/26/seniors-digital-technology-cognitive-impairment/
[3]   E. Brodwin, "All in the mind? The surprising truth about brain rot. The Guardian," 2025. https://www.theguardian.com/lifeandstyle/2025/jan/29/all-in-the-mind-the-surprising-truth-about-brain-rot
[4]   O. Friedrich, K. Hemmerling, K. Kuehlmeyer, S. Nörtemann, M. Fischer, and G. Marckmann, "Principle-based structured case discussions: Do they foster moral competence in medical students?-A pilot study," *BMC Medical Ethics,* vol. 18, p. 21, 2017. https://doi.org/10.1186/s12910-017-0181-1
[5]   L. Kohlberg, *Psychology of moral development*. Bilbao: Desclée de Brouwer S.A, 1992.
[6]   E. Turiel, *The development of social knowledge: Morality and convention*. Cambridge: Cambridge University Press, 1983.
[7]   E. Vera-Estay, J. J. Dooley, and M. H. Beauchamp, "Cognitive underpinnings of moral reasoning in adolescence: The contribution of executive functions," *Journal of Moral Education,* vol. 44, no. 1, pp. 17-33, 2015. https://doi.org/10.1080/03057240.2014.986077
[8]   S. E. Hodge, J. Taylor, and J. McAlaney, "It's double edged: The positive and negative relationships between the development of moral reasoning and video game play among adolescents," *Frontiers in Psychology,* vol. 10, p. 28, 2019. https://doi.org/10.3389/fpsyg.2019.00028
[9]   O. Yuguero, M. Esquerda, J. Viñas, J. Soler-González, and J. Pifarre, "Ethics and empathy: The relationship between moral reasoning, ethical sensitivity and empathy in medical students," *Revista Clínica Española (English Edition),* vol. 219, no. 2, pp. 73-78, 2019. https://doi.org/10.1016/j.rceng.2018.09.009
[10]   E. S. de Souza, M. C. Serafim, and L. S. Santos, "The contribution of ethics teaching to the development of moral competence in public administration students," *Education Policy Analysis Archives,* vol. 27, p. 104, 2019. https://doi.org/10.14507/epaa.27.4088
[11]   H. Ranjbar, S. Joolaee, A. Vedadhir, A. Abbasszadeh, and C. Bernstein, "An evolutionary route for the moral development of nursing students: A constructivist grounded theory," *Journal of Nursing Research,* vol. 26, no. 3, pp. 158-167, 2018. https://doi.org/10.1097/jnr.0000000000000224
[12]   R. Qincho-Apumayta, "University dropout: A systematic review of the main determinant factors (2020–2024)," *Frontiers in Education,* vol. 9, pp. 115–130, 2024.
[13]   N. M. Hafidhi, Y. Hanafi, S. Hadi, S. R. Kusumaningrum, and R. S. I. Dewi, "The decline of elementary school students' attitudinal values," *Journal of Education Research and Evaluation,* vol. 8, no. 4, pp. 602-610, 2024. https://doi.org/10.23887/jere.v8i4.76700

[14]   G. Muñoz, "The valuation of knowledge and its relationship to education," Master's Thesis. Monterrey Institute of Technology and Higher Education (ITESM), Monterrey, Nuevo León, Mexico, 2000.

[15]   L. Ploum, V. Blok, T. Lans, and O. Omta, "Educating for self-interest or-transcendence? An empirical approach to investigating the role of moral competencies in opportunity recognition for sustainable development," *Business Ethics: A European Review,* vol. 28, no. 2, pp. 243-260, 2019. https://doi.org/10.1111/beer.12214

[16]   F. Rahnama, M. Mardani-Hamooleh, and M. Kouhnavard, "Correlation between moral sensitivity and self-esteem in nursing personnel," *Journal of Medical Ethics and History of Medicine,* vol. 10, p. 16, 2017.

[17]   J. Vihos, F. Myrick, and O. Yonge, "Socializing for authentic caring engagement in nursing practice: Nursing student moral development in preceptorship," *Canadian Journal of Nursing Research,* vol. 51, no. 2, pp. 63-71, 2019. https://doi.org/10.1177/0844562118809258

[18]   C.-C. Wang, F. Chia, and C.-M. Chang, "The study of college athletes' moral self-concept and sport-related moral development," *Life Science Journal,* vol. 10, no. 4, pp. 2361-2367, 2013.

[19]   Z. H. Babakr, P. Mohamedamin, and K. Kakamad, "Piaget's cognitive developmental theory: Critical review," *Education Quarterly Reviews,* vol. 2, no. 3, pp. 517-524, 2019. https://doi.org/10.31014/aior.1993.02.03.84

[20]   J. Piaget, *The moral judgment of the child (M. Gabain, Trans.).* New York: Free Press, 1965.

[21]   D. P. Ausubel, *Educational psychology: A cognitive view*. New York: Holt, Rinehart & Winston, 1968.

[22]   K. Rigopouli, D. Kotsifakos, and Y. Psaromiligkos, "Vygotsky's creativity options and ideas in 21st-century technology-enhanced learning design," *Education Sciences,* vol. 15, no. 2, p. 257, 2025. https://doi.org/10.3390/educsci15020257

[23]   D. Goleman, *The emotionally intelligent leader*. Boston, MA: Harvard Business Review Press, 2019.

[24]   L. Higueras and W. Pérez, *Adaptation of Gordon's interpersonal values questionnaire*. Lima: UNMSM, 1972.

[25]   C. Merino, D. W. Wichern, and K. Rivas, "Evaluation of the factorial structure of the interpersonal values questionnaire (SIV)," *Revista de Psicología,* vol. 22, no. 1, pp. 6–28, 2004.

[26]   J. López González, J. M. Martínez, M. Lomboy, and L. Expósito, "Study of emotional intelligence and leadership competencies in university students," *Cogent Education,* vol. 11, no. 1, p. 2411826, 2024. https://doi.org/10.1080/2331186X.2024.2411826

[27]   I. Sánchez-Queija, I. García-Moya, C. Moreno, and P. Ramos, "Development of personal values in adolescence: Results from a longitudinal study in Spain," *European Journal of Developmental Psychology,* vol. 12, no. 2, pp. 201–216, 2015.

[28]   L. M. Thien, D. Adams, S. H. Kho, and P. L. Yap, "Exploring value-driven leadership: Perspectives from school leaders," *Journal of Research on Leadership Education,* vol. 18, no. 3, pp. 534-551, 2023. https://doi.org/10.1177/19427751221097988

[29]   D. G. Gardner and V. Wickramasinghe, "Relationships between leadership styles and prosocial motivation depend on cultural values: a case study in Sri Lanka," *Merits,* vol. 3, no. 3, pp. 445-458, 2023. https://doi.org/10.3390/merits3030026

[30]   A. N. R. Ortega and L. R. Hernández, "Development of interpersonal values as drivers of student learning styles," *Entrelíneas,* vol. 1, no. 2, pp. 140-155, 2002. https://doi.org/10.56368/Entrelineas124

[31]   J. A. Flores Morales and L. N. Huamani, "Interpersonal values and critical thinking among students at a university in Lima, 2020," *Horizontes. Revista de Investigación en Ciencias de la Educación,* vol. 5, no. 18, pp. 447 - 461, 2021. https://doi.org/10.33996/revistahorizontes.v5i18.187

[32]   M. E. Navarro Olivares, "Interpersonal values and social skills in first- and second-year students at the Federico Villarreal National University," 2021.

[33]   R. Hernández-Sampieri and C. Mendoza, *Research methodology: Quantitative, qualitative and mixed routes*. Ciudad de México, México: McGraw-Hill Education, 2018.

[34]   J. H. Sundjaja, R. Shrestha, and K. Krishan, *McNemar and Mann–Whitney U tests. In StatPearls*. Treasure Island, FL: StatPearls Publishing, 2023.