Neutrosophic Delphi method to analyze the impact of Internships on the comprehensive development of university students

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Abstract

Internships play a crucial role in the comprehensive education of university students as they provide practical experience and promote the development of technical and soft skills. These practices not only promote personal development but also ease the transition into the world of work. The study aims to use a Neutrosophic Delphi method to analyze the extent to which work practices influence the comprehensive education of university students in Ecuador in 2023. A descriptive study was conducted with a sample of 410 students from academies and universities in Ecuador. Country Ecuador. Center of the country This method uses structured surveys to collect qualitative and quantitative data about the experiences, advantages, and skills acquired during internships. The results are presented in the form of data tables and statistical graphics that illustrate the close connection between professional experience and the overall educational level of students. Emphasis was placed on acquiring skills such as teamwork, leadership, and problem-solving. In summary, internships are a valuable learning tool for university students as they provide the opportunity to apply knowledge, develop skills, and improve their employability.

Keywords: work practice; skills; competencies; Neutrosophic Delphi-

1. Introduction

Higher education around the world adapts to the needs of society and promotes economic activity and the constant increase in production and services in the country of residence. It is important to promote the development of highly qualified professionals and this process is necessary to meet this need. Pre-professional practice (internships) plays an important role in solving professional problems increasing professional efficiency and allowing students to integrate knowledge and skills. In this way, the university fulfills its social obligation to train competent specialists through the development of work practices. [1].

The process of "learning to learn" can be compared to a stream of water in which different experiences, knowledge, and situations from different jurisdictions such as universities and educational institutions flow together. These locations offer the necessary space and resources for student internships. Therefore, it is important to establish closer collaboration between these contexts so that students and teachers can continuously learn, explore, and build knowledge together [2].

Participating in an academic career means working on personal development and social integration. This holistic development process aims to have a positive impact on society by enabling young people to acquire skills and competencies. These skills include the ability to recognize and manage personal emotions, which are necessary to establish adequate interpersonal relationships, make progress in one's environment, and contribute to the improvement of that environment [3].

In higher education, the development of emotional intelligence is a priority in the acquisition of these skills, as is the case with student recruitment practices. This is believed to be crucial for students to master this skill that focuses on

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interpersonal relationships. and internal relationships. Empathy is particularly important because it impacts students' growth and social-emotional development [4].

The methodology used in applied professional practice combines the case method with evaluative questions, thus developing critical thinking in students, an important skill for their professional careers. Given the availability of information in modern society, it is time to develop this competency component and it is important to include these practices in academic programs to formalize these skills in the educational environment; In addition, technological advances and new forms of communication support these changes in teacher preparation [5].

Pre-professional practice serves as a bridge between academic, scientific, and social processes and creates comprehensive preparation for future specialists. This process promotes reflection, self-esteem, and social engagement by creating identity-forming connections to the profession. The development of working methods and their impact on global learning is based on students' participation and experience in identifying and solving real-world problems and improving quality in the manufacturing and service sectors. This integration of theory and practice is achieved through the use of real-life situations, allowing students to contribute to mastering professionally relevant topics and areas [6].

According to the Judicial Council of Ecuador, the pre-professional internship regime applies to students in the last two years of their studies who have graduated from universities and higher technical colleges and who began their studies on March 9, 2019. These internships aim at the "application of acquired knowledge and/or the development of professional skills". They are carried out in an institutional environment related to the professional field of activity. [7]

At the national level, recruitment often requires professional experience, which limits opportunities for inexperienced candidates and creates uncertainty among students in higher education. In this context, pre-professional practice can make a significant contribution to professional implementation by creating a strong link between the academic world and practical experience, contributing to the consolidation and integration of theoretical knowledge and practice, and giving students the necessary preparation for the challenges they will face. for example, working in the market overcoming the barrier of inexperience [8].

These and other publications published in professional journals and other media emphasize the importance of pre-qualification training of students, as it allows them to enter future work and identify and define their skills, abilities, and theoretical and technical competencies. ; acquire the so-called "work experience", which allows you to choose a job with a higher level of knowledge certainty about the practice associated with the comprehensive training of university students in the center of the country. Research

The purpose of the study is to demonstrate that: 1) Work practice influences the cognitive training of students, 2) This type of practical experience has a positive and motivating effect on the professional image and 3) This requirement in higher education is practical experience after completing higher education. A hypothesis is put forward: "Work practice influences the overall training of university students in the central region of the country." Ecuador 2023."

There are studies on this subject, which increases the importance of this study since there is interest in knowing how the work practices of the organizations they represent are evolving and whether their objectives are being achieved.

2. Related Work

Internships, a pivotal component in the education of university students, are experiences that blend theoretical learning with practical applications in real-world work environments. These experiences enable students to acquire field-specific skills and develop transversal competencies such as teamwork, effective communication, and problem-solving. Beyond being mere steps towards graduation, internships represent opportunities for students to explore the professional world, establish connections, and chart future career paths[9].

The definition of internships encompasses a wide range of activities, from placements in companies to collaborative research projects with academic institutions. These experiences can vary in duration, ranging from a few weeks to several months, and may be paid or unpaid. Regardless of their specific form, the primary goal of internships is to provide students with practical insights into their field of study and prepare them to enter the job market with the necessary skills and knowledge[10,11].

When considering the dimensions of internships, it is important to recognize both their tangible and intangible aspects. From a tangible perspective, internships offer students the opportunity to apply classroom knowledge in real-world situations, leading to deeper and more meaningful learning. Additionally, these experiences allow them to develop specific technical skills related to their field of study, enhancing their employability and their ability to contribute effectively in a work environment.

However, internships also have intangible dimensions that are equally important but not easily measurable. For instance, these experiences can contribute to students' self-confidence and improve their ability to adapt to new

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situations and creatively solve problems. Furthermore, internships provide students with the opportunity to network with professionals and explore different areas within their field of study, which can influence their future career decisions.

Ultimately, internships are an integral part of the educational experience for university students, offering them the chance to merge theory and practice in a real-world work setting. By providing them with practical insights into their field of study and helping them develop relevant skills and competencies for the job market, these experiences play a crucial role in preparing students to successfully enter the professional world. Therefore, educational institutions and businesses need to collaborate in offering meaningful and enriching internship experiences that benefit both students and society at large[12].

2.1. **Fuzzy Sets**

Fuzzy sets, a concept pioneered by Lotfi A. Zadeh, represent a departure from traditional set theory by introducing degrees of membership rather than strict membership. In essence, a fuzzy set allows elements to belong to a set to a certain degree, rather than being simply in or out. This flexibility in defining membership enables fuzzy sets to model real-world phenomena more accurately, particularly those that involve imprecision or uncertainty[13].

The definition of fuzzy sets lies in their ability to capture and represent vague or ambiguous concepts that are prevalent in many domains. Unlike crisp sets, which have a clear boundary between elements that belong and those that do not, fuzzy sets acknowledge the gradation of membership, reflecting the inherent fuzziness of human perception and language. This makes them particularly useful in fields such as artificial intelligence, where precise categorization may be challenging due to the complexity of human reasoning[14].

Fuzzy sets possess dimensions that extend beyond traditional set theory, offering a richer framework for modeling uncertainty and ambiguity. One dimension is the degree of membership, which quantifies the extent to which an element belongs to a fuzzy set. Another dimension is the concept of linguistic variables, which allows fuzzy sets to represent qualitative or subjective attributes, such as "tall" or "hot," in addition to quantitative ones.

Furthermore, fuzzy sets can be combined through operations such as union, intersection, and complementation, enabling the representation of complex relationships among uncertain or imprecise concepts. This flexibility in operations distinguishes fuzzy sets from crisp sets and enhances their applicability in modeling real-world systems where precise boundaries may be elusive.

Additionally, fuzzy sets offer a mechanism for handling uncertainty in decision-making processes by providing a formal framework for reasoning under vagueness. This aspect is particularly valuable in fields such as control systems, where precise measurements may be difficult to obtain, but approximate reasoning can still lead to effective outcomes.

In summary, fuzzy sets represent a paradigm shift in set theory, offering a more flexible and nuanced approach to modeling imprecise and uncertain concepts. By allowing for degrees of membership and incorporating linguistic variables, fuzzy sets provide a powerful tool for representing and reasoning about real-world phenomena in a way that aligns more closely with human cognition and perception. Their multidimensional nature and ability to handle uncertainty make them indispensable in various fields, from artificial intelligence and control systems to decision analysis and pattern recognition.

Suppose that U is a universe of discourse and M is a set contained in U. An element x of U is denoted by x(T, I, F) concerning a set M . Statistically, T, I, and F are subsets, but dynamically, T, I, F are functions or operations that depend on many unknown or known parameters [15].

To facilitate practical application in decision-making and technical problems, Single-valued neutrosophic set (SVNS) have been proposed, allowing the use of linguistic variables. This increases the explanatory power of recommendation models and the exploitation of uncertainty[16].

Let X be the universe of discourse. SVNS A of X is[17]:

$$A = \{\langle x, u_A(x), r_A(x), v_A(x)\rangle : x \in X\}d \quad (1)$$

Where $u_A(x)$: $X \rightarrow [0,1]$, $r_A(\ x)$, : $X \rightarrow [0,1]$ and $v_A(x)$: $X \rightarrow [0,1]$ with $0 \leq x_x) + r_A(x) + v_A(x)$: ≤ 3 for all $x \backslash X$. The values $u_A(x)$, $r_A(x)$, and $v_A(x)$ represent the true, indeterminate, and false values, respectively. For simplicity, the SVN number is expressed as A = (a ,b,c) , where a , b ,$c\varepsilon$ [0,1] and + b + $c \leq 3$.

For cooperation with DELPHI, aspects and their indicators were identified that form the basis for developing criteria for assessing the universal rights of citizens, assessed by impartial judges, and presented to selected experts as a proposed solution to the research problem[18,19]

Application of the Neutrosophic Delphi method

The Neutrosophic Delphi method represents[20] an innovative extension of the traditional Delphi method by incorporating neutrosophy, a branch of philosophy that deals with the concept of indeterminacy, into the decision-making process. At its core, the Neutrosophic Delphi method aims to address uncertainties and contradictions that may

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arise during the forecasting or decision-making process by allowing participants to express their opinions in terms of truth, falsehood, and indeterminacy.

The definition of the Neutrosophic Delphi method lies in its ability to accommodate diverse perspectives and uncertainties in a structured and systematic manner. Unlike the traditional Delphi method, which typically relies on crisp distinctions between opinions, the Neutrosophic Delphi method acknowledges the inherent indeterminacy in human judgments and provides a framework for quantifying and managing such uncertainty. One dimension of the Neutrosophic Delphi method is the incorporation of neutrosophic logic, which extends classical logic to encompass indeterminacy as a third truth value alongside truth and falsehood. This allows participants to express their opinions in a more nuanced manner, reflecting the uncertainty and ambiguity that often accompany complex decision-making processes[21].

Furthermore, the Neutrosophic Delphi method allows for the aggregation of opinions through various fusion techniques, such as averaging or weighting, to derive a consensus or forecast. This aggregation process takes into account not only the degree of agreement or disagreement among participants but also the degree of indeterminacy associated with each opinion, providing a more comprehensive understanding of the underlying uncertainties.

Additionally, the Neutrosophic Delphi method can be applied across a wide range of domains, from business and economics to healthcare and engineering, where uncertainties and contradictions are common[22,23]. By embracing indeterminacy and ambiguity, the Neutrosophic Delphi method offers a more robust and flexible approach to decision-making that can adapt to the complexities of real-world situations. Moreover, the Neutrosophic Delphi method emphasizes the importance of reflexivity and iteration in the decision-making process, allowing participants to revisit and revise their opinions based on feedback from other participants or new information. This iterative nature fosters a deeper understanding of the underlying issues and promotes consensus-building over time.

In summary, the Neutrosophic Delphi method represents a significant advancement in decision-making theory by integrating neutrosophy into the traditional Delphi method framework. By embracing indeterminacy and ambiguity, this method offers a more nuanced and flexible approach to forecasting and decision-making that is well-suited to the complexities of the modern world. Its multidimensional nature and emphasis on reflexivity make it a valuable tool for addressing uncertainties and contradictions across a wide range of domains.

The Delphi method is a technique for collecting and processing information that makes it possible to obtain an assessment from a group of experts through consultation]. This qualitative method is recommended when necessary to collect the expert, consensus, and representative opinion of a group of highly specialized people and to form an important reference for confirming the theoretical validity of intervention proposals [24]
To select experts for this study, a total of 15 experts were recruited, selected from university professors and students from different regions of the country. They were asked to complete a cognitive test and all invited experts kindly agreed This technique assesses the following cognitive factors to determine competence in the counseling topic [25]:

- Kc: the level of relevant information and knowledge available to experts in the field.
- Ka**:** Coefficient of expert argumentation based on a critical analysis of the topic.
- K: Determine the qualification coefficient of the consulted expert. Use the formula according to the DELPHI method, where K= 0.5 x (Kc+Ka).

3. Case Study.

After determining the information content (Kc) and the level of argumentation of each expert on the subject under study, his or her expertise is determined, resulting in the following results.
The features are rated using the following linguistic scale (Table 1). These notes are saved for inclusion in the database.
Table 1: Linguistic terms used.

linguistic term	SVN numbers
Extremely high(EH)	(1,0,0)
Very very high (VVH)	(0.9, 0.1, 0.1)
Very high (VH)	(0.8,0,15,0.20)
High (H)	(0.70,0.25,0.30)
Medium-high (MH)	(0.60,0.35,0.40)
Medium(M)	(0.50,0.50,0.50)
Medium-low (ML)	(0.40,0.65,0.60)
Low (L)	(0.30,0.75,0.70)

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Very low (VL)	(0.20,0.85,0.80)
Very very low (VVL)	(0.10,0.90,0.90)
Extremely low (EL)	(0,1,1)

Table 2 summarizes the results of the expert selection process and describes the recognition of knowledge quotients or transparency information in public administration and the mechanisms that facilitate their effective implementation.

Table 2: Results of the expert selection process.

Experts	Kc.	Ka.	K.	**Category**
1	(0.30,0.66,0.60)	(0.60,0.60,0.60)	(0.36,0.60,0.60)	Medium-low (MDM)
2	(1, 0, 0)	(0.8,0.16,0.20)	(0.9, 0.1, 0.1)	Extremely high(EB)
3	(0.9, 0.1, 0.1)	(1, 0, 0)	(0.96, 0.1, 0.1)	Very very high (MMB)
4	(0.8,0.16,0.20)	(0.9, 0.1, 0.1)	(0.86,0.16,0.20)	Very high (MB)
5	(1, 0, 0)	(0.9, 0.1, 0.1)	(0.96, 0.1, 0.1)	Extremely high(EB)
6	(0.8,0.16,0.20)	(0.9, 0.1, 0.1)	(0.86,0.16,0.20)	Very high (MB)
7	(0.70,0.26,0.30)	(0.9, 0.1, 0.1)	(0.8,0.16,0.20)	Very high (MB)
3	(0.8,0.16,0.20)	(0.9, 0.1, 0.1)	(0.86,0.16,0.20)	Very high (MB)
9	(0.30,0.66,0.60)	(0.60,0.60,0.60)	(0.360,0.60,0.60)	Medium-low (MDM)
10	(1, 0, 0)	(0.9, 0.1, 0.1)	(0.96, 0.1, 0.1)	Extremely high(EB)
11	(0.30,0.66,0.60)	(0.60,0.60,0.60)	(0.360,0.60,0.60)	Medium-low (MDM)
12	(0.9, 0.1, 0.1)	(0.8,0.16,0.20)	(0.86,0.16,0.20)	Very very high (MMB)
13	(1, 0, 0)	(0.9, 0.1, 0.1)	(0.96, 0.1, 0.1)	Extremely high(EB)
14	(0.8,0.16,0.20)	(1, 0, 0)	(0.9, 0.1, 0.1)	Very high (MB)
15	(0.30,0.66,0.60)	(0.60,0.60,0.60)	(0.360,0.60,0.60)	Medium-low (MDM)
			12.65/15=0.84	**ALT**

Table 3 presents a systematization of the values of the competencies of state transparency experts and mechanisms that facilitate their effective implementation.
Table 3: Results of coding the experts' competence values.

From	Worth	Until	Competence
0.8 <	K	≤ 1.0	High
0.5 <	K	≤0.8	Half
	K	≤ 0.5	Low

As a result, it was decided to select 11 experts with high and average ratings. Selected experts assessed a proposal to assess the universal rights of citizens, judged by impartial judges.
To review the proposal, five inclusion criteria for the proposal were established and carefully reviewed and evaluated by experts.

1. **Professional Skills Development:** Evaluate how the internship contributes to the development of specific skills related to the student's career or field of study, such as B. technical skills, communication, leadership, teamwork, and other skills.
2. **Personal and professional development:** Analyse the impact of internships on students' personal and professional development, taking into account aspects such as self-confidence, problem-solving skills, adaptability, responsiveness to the work environment, and clarity of career goals.
3. **Application of theoretical knowledge:** The assessment of the level of professional experience enables students to apply the knowledge acquired in class to real-life situations in the working world, thus contributing to a comprehensive learning process. How about you?
4. **Networking and career opportunities:** Consider how internships make it easier to network and gain access to job opportunities, internships, or career-related projects. Future.

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5. **Impact on work ethics and values:** Analyse the impact of internships on the development of students' work ethics, professional values, and social responsibility, taking into account aspects such as respect, honesty, punctuality, commitment, and solidarity in the workplace.

After careful consideration, it was determined to convene a panel of 11 experts, carefully selected based on their high and average ratings in relevant fields. These experts were tasked with evaluating a proposal aimed at assessing the universal rights of citizens, a task to be scrutinized under the impartial gaze of these seasoned judges. Their collective wisdom and expertise were deemed crucial in navigating the complexities of such a multifaceted endeavor.

To ensure a comprehensive review of the proposal, five inclusion criteria were meticulously delineated and rigorously examined by the panel of experts. These criteria served as guiding principles in the assessment process, shedding light on various dimensions of the proposed evaluation framework. From professional skills development to the impact on work ethics and values, each criterion offered a distinct vantage point from which to evaluate the proposal's merits.

Firstly, the panel delved into the realm of professional skills development, scrutinizing how the proposed evaluation framework would contribute to enhancing specific skills pertinent to students' careers or fields of study. Technical prowess, communication acumen, leadership finesse, and teamwork proficiency were among the attributes under scrutiny, underscoring the holistic approach adopted in assessing the proposal's efficacy.

Moreover, the assessment extended beyond mere technical proficiency, delving into the realm of personal and professional development. The panel meticulously analyzed the proposal's potential impact on students' self-confidence, problem-solving acumen, adaptability, and clarity of career goals. These intangible yet invaluable facets of growth were deemed integral to fostering well-rounded individuals prepared to navigate the complexities of the professional landscape.

Table 4: Results by absolute frequency.

ITEMS	***C1 Very Suitable***	***C2 Quite Suitable***	***C3 Suitable***	***C4 Inappropriate***	***C5 Not Suitable***	**TOTAL**
1	8	3	0	0	(0,1,1)	11
2	8	3	1	0	(0,1,1)	11
3	5	6	0	0	(0,1,1)	11
4	6	4	1	0	(0,1,1)	11
5	7	4	0	0	(0,1,1)	11

Table 5: Results of calculating the total cumulative frequencies.

ITEMS	***C1 Very Suitable***	***C2 Quite Suitable***	***C3 Suitable***	***C4 Inappropriate***	***C5 Not Suitable***
1	(0.8, 0.1, 0.1)	(0.30,0.85,0.80)	(0,1,1)	(0,1,1)	(0,1,1)
2	(0.8,0.15,0.20)	(0.20,0.85,0.80)	(1, 0, 0)	(0,1,1)	(0,1,1)
3	(0.50,0.65,0.60)	(0.60,0.25,0.30)	(0,1,1)	(0,1,1)	(0,1,1)
4	(0.60,0.25,0.30)	(0.40,0.75,0.70)	(1, 0, 0)	(0,1,1)	(0,1,1)
5	(0.70,0.35,0.40)	(0.40,0.50,0.50)	(0,1,1)	(0,1,1)	(0,1,1)

Table 6 presents the experts' assessments of the criteria on issues related to the analysis of the influence of work practice on the comprehensive development of higher education students.

Table 6: Results from the process of evaluating the professional criteria for validation factors.

Items	Value	**Category**
1	(0.8, 0.1, 0.1)	Very very high (VVH)
2	(0.8,0.15,0.20)	Very high (VH)
3	(0.60,0.25,0.30)	High (H)
4	(0.8, 0.1, 0.1)	Very very high (VVH)
5	(0.7,0.15,0.20)	Very high (VH)

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The results show that the evolution of work practices can be divided into four categories:

a) Location according to profile (82%),

b) different but related places (14%),

c) False documents (3%),

d) Other (0%).

Most have completed internships in their area of expertise, demonstrating collaboration between organizations and companies to identify relevant and worthwhile opportunities.

Undergraduate students reported a significant improvement in their subject knowledge during the internship, with 44% receiving a grade of 5 (maximum improvement). 38% showed moderate improvement (4 points). Only 1% saw no improvement, demonstrating the positive and far-reaching impact of professional development activities at the undergraduate level.

Most agreed or strongly agreed that pre-professional practice would benefit students' overall development, compared to 19% who disagreed or strongly agreed. 7% have a Neutrosophic opinion; this shows that the majority of participants are aware of the positive impact their work practices have on the overall development of their studies.

The completion of internships within their respective fields of expertise stands as a testament to the collaborative efforts between organizations and companies, that diligently strive to identify and offer meaningful opportunities for aspiring professionals. This symbiotic relationship not only fosters the acquisition of practical skills but also cultivates a deeper understanding of industry dynamics, thereby enriching the educational experience of undergraduate students.

An insightful revelation emerges from the feedback provided by undergraduate participants, indicating a substantial enhancement in their subject knowledge throughout the internship period. Remarkably, a staggering 44% of students reported experiencing maximum improvement, underscoring the efficacy of hands-on learning experiences in bolstering academic proficiency. Furthermore, an additional 38% acknowledged moderate improvement, affirming the transformative impact of professional development initiatives at the undergraduate level.

The consensus among the majority of participants regarding the benefits of pre-professional practice on overall student development echoes resoundingly, with a notable 81% either agreeing or strongly agreeing with this sentiment. Conversely, a minority comprising 19% expressed dissenting views. Notably, a fractional 7% espoused a Neutrosophic stance, underscoring the nuanced nature of opinions surrounding the perceived impact of work practices on academic advancement.

In summation, the empirical evidence gleaned from participant feedback underscores the pivotal role of internships in fostering holistic development among undergraduate students. As the vast majority attests to the transformative effects of pre-professional practice, it becomes evident that these experiential learning opportunities serve as catalysts for personal and academic growth, thereby enriching the educational landscape and empowering aspiring professionals to navigate the complexities of the modern workforce with confidence and competence.

The proposed initial hypothesis addresses how work practice affects the overall learning of students who practice it.

A comprehensive education for students includes their intellectual, emotional, social, and moral development. An effective curriculum must connect knowledge with reality and integrate theory and practice to address social problems and needs. Learning strategies such as employability are crucial to graduates' success and enable them to apply their knowledge in practice. Taking into account social realities and solving specific problems are essential for preparing competent professionals who want to make a positive contribution to society.

Internships play an important role in students' overall education by combining theoretical concepts with professional experience. This combination equips them with practical and emotional skills that enable them to overcome challenges and make a competent and positive contribution to society.

When entering the job market after graduation, students are faced with the need to learn certain technical skills, known as hard skills. However, to fully develop, you must have additional skills such as communication, self-control, and confidence, known as soft skills. Today, employers are looking for professionals who combine both skills, striking a balance between technical knowledge and soft skills, and thus succeed in the modern workplace.

When students enter the workforce after college, they must have both technical skills, also known as hard skills, and additional skills, known as soft skills. Employers are now looking for professionals who can strike a balance between the two, allowing them to stand out from the crowd and thrive in the modern workplace. This balance is essential to stand out and succeed in today's demanding professional environment.

Higher education is strengthened by promoting the arts, humanities, social work, networking, and professional practice. These activities and other strategies aim to integrate theory and practice and provide comprehensive learning

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that meets the needs of society and its people. By strengthening connections with reality and solving specific problems, education is enriched, benefiting both students and society [9].

Internships and other activities that connect students to the real world strengthen higher education by integrating theory and practice, thus providing a well-rounded education. Responding to the needs of society, these experiences primarily benefit students and communities by developing future professionals with relevant skills that contribute to social progress.

The bibliographic review carried out by the authors cited above confirms that practical training plays a fundamental role in the preparation of students in general. By combining theory and practice, students acquire the technical and social skills necessary to solve the problems of today's workplace. Experience in your professional field allows you to develop critical thinking and apply your knowledge to real-world situations. Furthermore, promoting the arts, humanities, and professional practice in higher education will enrich students' well-rounded education, benefiting them and society. University programs must integrate these strategies to produce competent professionals who are ready to successfully enter the workforce.

Therefore, trainable practitioners are needed to prepare future professionals. represents the first step towards professional development; the university must ensure that these experiences are effective in attracting graduates with good professional status.

The study reflects the need to monitor work practice and its positive and negative outcomes to promote the comprehensive development of students and subsequently properly engage them in work. Identifying positive outcomes can be useful for future research. These results can be used to address potential problems facing future generations of professionals. For example, future research would benefit from following up on the 28% of respondents who expressed uncertainty about their role after completing the training.

4. Conclusion

The use of the neutrosophical Delphi method provides a rigorous and systematic approach to assessing the impact of work practices on the comprehensive development of university students in the central region of the country. Incorporating industry criteria ensures that assessments are based on knowledge and experience in the field, helping to improve the validity and reliability of the results achieved. This approach allows us to accurately and comprehensively identify how work practices influence various aspects of student development, from professional development to the formation of ethical values, thereby providing a global overview of their impact on the education of future professional students.

By demonstrating the impact of internships using this approach, their relevance in the educational and professional context of the central region of the country was highlighted. The results not only confirm the importance of these practical experiences in the educational process of university students but also provide valuable information for improving and adapting textbook programs and policies to more effectively promote comprehensive development. In conclusion, the implementation of expert consultation using the Neutrosophic Delphi method not only confirms the impact of work practice but also provides a solid foundation for understanding and improving students' educational experience in this area.

Work practice is the basis of students' cognitive and holistic training and combines theoretical knowledge with practical practice; Students acquire practical skills and develop a deeper understanding of their field of study, are better prepared for challenges in the world of work, and their academic preparation increases their overall strength.

In addition, the first work experience is positive and motivating, as future professionals have previously worked in areas corresponding to their profile and held relevant positions taking into account their future job title, which gives them a competitive advantage in acquiring relevant experience in your future career. Therefore, industrial practice is necessary for the comprehensive education of university students in Ecuador.

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