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Emotions in University Research Training: Student Experiences and Faculty Perspectives

Emociones en procesos de formación investigativa universitaria: experiencias estudiantiles y perspectiva docente

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Abstract:

This study analyzes the emotional factors associated with research training processes among undergraduate students in the Department of Education and Humanities at UNAN-Managua/CUR-Estelí, while also incorporating the faculty perspective on these experiences. It was conducted using a mixed-method, descriptive, cross-sectional approach, involving a questionnaire administered to 395 undergraduate students enrolled in research courses and semi-structured interviews with 34 faculty members responsible for methodological and research components. The results show that students experience emotions such as stress, anxiety, frustration, and insecurity, especially during stages related to goal setting, data analysis, and meeting academic deadlines, while positive emotions such as motivation, satisfaction, and pride emerge in response to significant progress and achievements. From the faculty perspective, factors such as pedagogical guidance, feedback, and emotional support directly influence self-regulation and academic retention. It is concluded that emotions constitute a central component of university research training; therefore, integrating strategies for emotional and pedagogical support is essential for strengthening student well-being, academic resilience, and the quality of research processes in higher education.

Keywords:

Emotions, research, college students, emotional support

Resumen:

El presente estudio analiza los factores emocionales asociados a los procesos de formación investigativa en estudiantes universitarios del Departamento de Ciencias de la Educación y Humanidades de la UNAN-Managua/CUR-Estelí, incorporando además la perspectiva docente sobre dichas experiencias. Se desarrolló bajo un enfoque mixto, descriptivo y de corte transversal, aplicando un cuestionario a 395 estudiantes de pregrado vinculados a asignaturas de investigación y entrevistas semiestructuradas a 34 docentes responsables de componentes metodológicos e investigativos. Los resultados evidencian que los estudiantes experimentan emociones como estrés, ansiedad, frustración e inseguridad, especialmente en etapas relacionadas con la formulación de objetivos, el análisis de datos y el cumplimiento de plazos académicos, mientras que emociones positivas como motivación, satisfacción y orgullo emergen ante avances significativos y logros alcanzados. Desde la perspectiva docente, factores como el acompañamiento pedagógico, la retroalimentación y el apoyo emocional influyen directamente en la autorregulación y permanencia académica. Se concluye que las emociones constituyen un componente central en la formación investigativa universitaria, por lo que integrar estrategias de apoyo emocional y pedagógico resulta fundamental para fortalecer el bienestar estudiantil, la resiliencia académica y la calidad de los procesos de investigación en educación superior.

***Palabras Clave**:*

Emociones, investigación, estudiantes universitarios, apoyo emocional

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INTRODUCTION

Scientific research involves not only methodological rigor but also an emotional dimension that influences the development of projects. In the academic sphere, students face various challenges that generate emotions such as enthusiasm, anxiety, or frustration, which affect how they approach and complete their research processes (García & Ruiz, 2021).

In the Department of Educational Sciences and Humanities at UNAN-Managua/CUR-Estelí, the influence of emotions on the research process is significant, since factors such as academic pressure and uncertainty can generate emotional responses that affect learning, while achievements strengthen motivation and creativity (Gutiérrez & Karam, 2024; Criollo, 2024).

Although emotions in research have been addressed in various contexts, their influence on students of Education and Humanities, especially in Nicaragua, remains understudied in a comprehensive manner. A gap persists in methodological approaches focused on emotional management during the research process, as most existing studies concentrate on isolated emotions rather than the emotional complexity present at different stages. This limitation highlights the need for research that strengthens research training from both an emotional and academic perspective.

Internationally, various studies have shown that emotions significantly influence educational and work contexts, impacting performance, well-being, and personal development. In the workplace, emotional competencies foster effective environments and organizational achievement (Castro-Paniagua et al., 2023), while in the academic context, it is recognized that emotions such as stress and anxiety can affect learning, in contrast to motivation and empathy, which strengthen academic success and holistic development (Anzelin et al., 2020; Barrios & Gutiérrez de Piñeres, 2020)

In Nicaragua, studies conducted at UNAN-Managua/CUR-Estelí and UNAN-León show that competencies such as self-motivation and emotional regulation strengthen academic performance and student well-being (Pinell & Chavarría, 2024; Triminio-Zavala et al., 2024; Rodríguez, 2019; Miranda & Muñoz, 2012). However, these studies address emotions in a general way, without delving into how they vary in specific stages of the research process, such as the formulation of objectives, data analysis, or the writing of results.

Emotional competencies in higher education

Emotional competencies are essential in higher education, as they strengthen well-being, emotional management, and academic achievement (Gordillo, 2023). Their integration into university education fosters resilience, inclusion, and professional development (Valenzuela & Miño, 2021), while emotional self-regulation and self-efficacy enhance educational success and the ability to face challenges (Huamani De la Cruz et al., 2024). In accordance with the WHO, emotional well-being is a key factor for self-confidence and a positive attitude toward learning.

Triggers of emotions in research

Emotions in academic research vary according to the stages of the research process. During the formulation of objectives, methodological design, data analysis, and meeting deadlines, students may experience uncertainty, pressure, anxiety, or demotivation, while progress and achievements strengthen satisfaction and motivation. In this context, emotional self-regulation, self-efficacy, and institutional support are fundamental for facing challenges, managing failure as a learning experience, and fostering a more balanced research development (Huamani De la Cruz et al., 2024; Gordillo, 2023).

Justification and contributions of the study

This research addresses the impact of emotions on university research training, a key aspect for understanding how emotional factors influence the academic experience and the development of research skills. Its relevance lies in its ability to generate strategies aimed at strengthening student training and improving the quality of research processes, contributing to the professional development of future teachers and professionals in the fields of Education and Humanities (Triminio-Zavala et al., 2024; Rodriguez-Barboza et al., 2023; Salinas & Gamboa, 2024).

This research addresses the impact of emotions on university research training, a key aspect for understanding how emotional factors influence the academic experience and the development of research skills. Its relevance lies in its ability to generate strategies aimed at strengthening student training and improving the quality of research processes, contributing to the professional development of future teachers and professionals in the fields of Education and Humanities (Triminio-Zavala et al., 2024; Rodriguez-Barboza et al., 2023; Salinas & Gamboa, 2024).

METHOD

Type of study

The research was conducted using a descriptive, mixed-methods, and cross-sectional approach. The descriptive design allowed for the characterization of the phenomenon under study without establishing causal relationships (Fonseca, 2023; Valle et al., 2022), while the mixed-methods approach was applied from a complementary perspective, integrating quantitative data obtained from students to

identify general emotional trends and qualitative data from teachers to delve into pedagogical, contextual, and relational factors associated with research training (Sánchez et al., 2022; Itcara, 2014). The cross-sectional design, in turn, made it possible to analyze these experiences within a specific context and timeframe, allowing for the identification of relevant patterns in the studied population (Manterola et al., 2023).

Study area

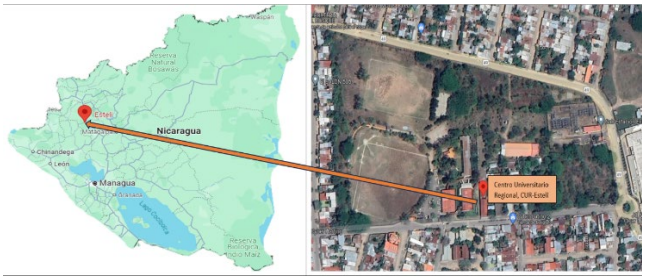

Figure 1. Geographical area of the research development

As shown in Figure 1, the UNAN-Managua/CUR-Estelí campus is located in the urban center of the city of Estelí, in a strategic area with easy access and connectivity. Its location favors the availability of essential services, proximity to institutions, and access to public transportation, conditions that facilitate the participation of students and academic staff, in addition to providing a suitable environment for the development of research (Herrera, 2022).

Study sample

The sample, understood as a partial but significant representation of the population under analysis (Condori-Ojeda, 2020), consisted of 395 undergraduate students from the Department of Education and Humanities, enrolled in courses, seminars, or research training components, as well as 34 faculty members responsible for methodology courses, tutorials, or academic spaces related to formative research. A non-probability convenience sampling method was used, selecting participants according to accessibility and relevance criteria established by the researcher, without resorting to random procedures. Consequently, the findings should be interpreted within the specific context of the study, recognizing its limitations for generalization to broader populations (Hernández, 2021).

Compliance with ethical principles was ensured through the application of informed consent that included study objectives, voluntary participation, confidentiality, and data protection.

Instruments for collecting information

As shown in Table 1, two main techniques were used to collect information: a survey, administered to students via an online guide, and a semi-structured interview, conducted with teachers. This methodological combination allowed for the integration of quantitative and qualitative data to gain a broader understanding of the emotional experiences associated with research training (Sánchez, 2022).

Table 1.
Techniques, instruments and sources of information

Technique	Definition	Instrument	Sources
The survey	This data collection technique allows for establishing contact with the observation units through pre-designed questionnaires (Tamayo & Silva, 2012).	Online Survey Guide	Students
The interview	The interview is a situation of interrelation or dialogue between people, the interviewer and the interviewee (Tamayo & Silva, 2012).	Online semi-structured interview guide	Teachers

Phases of the investigative process

The study was developed in four stages: design and planning, which included the delimitation of the problem, theoretical review and formulation of objectives; collection of information through interviews and questionnaires; processing and analysis of data through quantitative and qualitative techniques; and dissemination of results, aimed at the socialization of findings and academic feedback.

RESULTS

In Figure 2, female participation (300) predominated over male participation (95), demonstrating a greater representation of women in the studied sample.

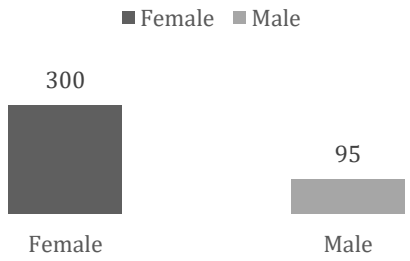

Figure 2. Gender of student participants

Figure 3, most students exhibit moderate to high levels of stress during the research process, with categories 3 and 4 predominating, which shows that research represents an emotionally demanding experience for a considerable proportion of participants.

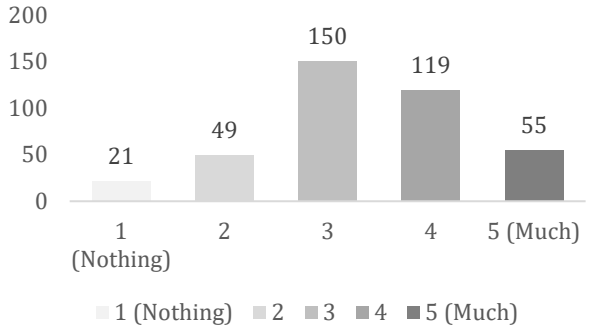

Figure 3. Stress level in research processes

According to Figure 4, academic stress is mainly concentrated at intermediate and high levels, confirming that the demands of the research process generate a significant emotional burden in most students.

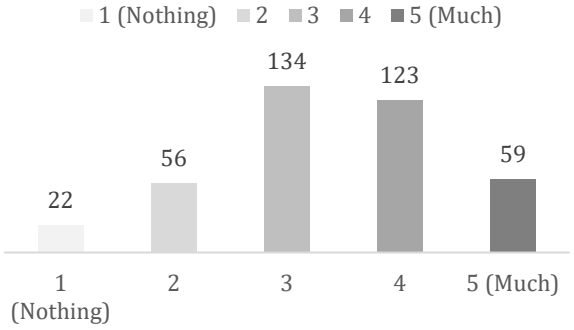

Figure 4. Stress during research processes

Figure 5 shows that delivery deadlines are a significant source of emotional pressure, as moderate and high levels of stress associated with meeting deadlines predominate.

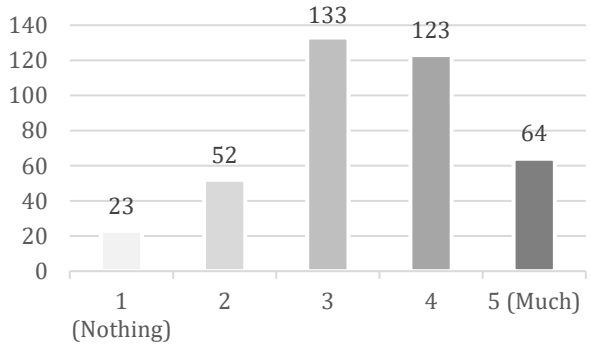

Figure 5. Stress due to delivery deadlines

As Figure 6 indicates, the feeling of being overwhelmed is frequently present in the research process, with the category "Sometimes" predominating, followed by "Frequently", reflecting that feeling overwhelmed is a recurring part of the student academic experience.

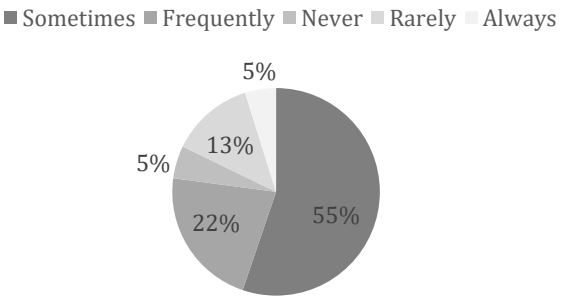

Figure 6. Overwhelming frequency

Students' emotions

As can be seen in Figure 7, anxiety manifests itself mainly occasionally and frequently, which confirms its presence as a recurring emotion during the different stages of the investigative process.

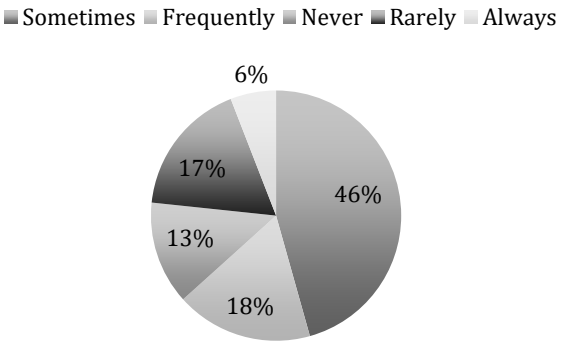

Figure 7. Anxiety Level in Research Processes

According to Figure 8, frustration is a frequent emotion in students, mainly associated with methodological and interpretation difficulties, reflecting relevant emotional challenges in research development.

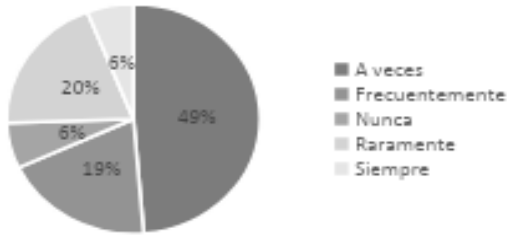

Figure 8. Level of Frustration in Research Processes

Figure 9 shows a predominance of high levels of motivation, especially in the categories "Always" and "Frequently", demonstrating that, despite emotional difficulties, students maintain a positive disposition towards research.

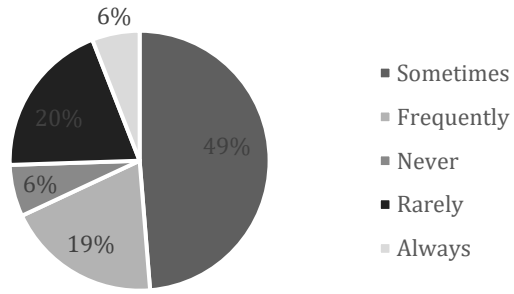

Figure 9. Level of Motivation in Research Processes

As Figure 10 shows, the concern occurs mainly on an occasional and frequent basis, reflecting a moderate emotional burden linked to the demands of the investigative process.

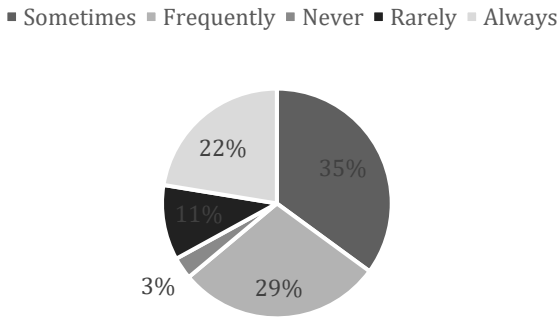

Figure 10. Level of Concern in Research Processes

Teachers' opinions

From the teacher's perspective, as shown in Figure 11, students' emotions fluctuate throughout the research training process, shifting from initial enthusiasm, curiosity, and motivation to anxiety, stress, frustration, and insecurity in stages of greater methodological complexity. One teacher noted that "at the beginning they show enthusiasm, but when faced with defining the problem or analyzing data, a lot of anxiety and insecurity appear" (Teacher 7), while another expressed that "frustration tends to increase when they feel they are not making progress or do not understand certain methodological procedures" (Teacher 12). These observations demonstrate that the research process represents a dynamic emotional experience, conditioned by the academic, technical, and personal demands that students face.

Figure 11. Emotions that teachers perceive in the context of the research

As shown in Figure 12, emotional and pedagogical support fosters well-being, group cohesion, motivation, and personal development, strengthening environments of trust, empathy, and collaboration. Teachers emphasize that constant support, feedback, and assertive communication are key factors in strengthening emotional self-regulation and reducing the impact of academic stress. In the words of one participant, “when students feel supported and guided, they are better able to manage pressure and regain confidence in their process” (Teacher 4). Thus, teacher support not only facilitates the completion of projects but also fosters the development of more resilient students in their research experience.

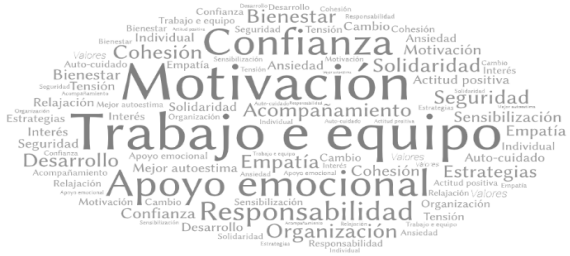

Figure 12. Teachers' perceptions of changes associated with emotional support

DISCUSSION

The results show that research training processes for university students are emotionally complex experiences, characterized by a coexistence of negative and positive emotions that vary according to the academic and methodological demands of each stage. As shown in Figures 3, 4, and 5, moderate and high levels of general stress, academic stress, and deadline pressure predominate, suggesting that formative research represents a significant demand for undergraduate students enrolled in methodology courses. These findings align with previous studies indicating that academic pressure, uncertainty, and technical complexity can generate intense emotional responses during demanding educational processes (Castro-Paniagua et al., 2023). Therefore, rather than interpreting these emotions as exclusive to "researchers," the results should be understood within the context of university research training experiences.

Furthermore, the frequency of anxiety, frustration, and worry reported in Figures 7, 8, and 10 confirms that negative emotions do not occur in isolation, but rather as part of an emotional framework linked to decision-making, goal setting, information analysis, and academic evaluation. The teacher's perspective complements these findings by noting that these emotions tend to intensify during moments of greater methodological complexity, as one participant expressed: "At the beginning, they show enthusiasm, but when faced with defining the problem or analyzing data, a lot of anxiety and insecurity appears" (Teacher 7). This complementarity between quantitative and qualitative data strengthens the coherence of the mixed-methods approach, demonstrating how students' emotional tendencies are explained by specific pedagogical experiences.

However, alongside these emotions, positive responses associated with academic progress also emerge. Figure 9 shows high levels of motivation, indicating that, despite the difficulties, students maintain a favorable disposition toward research when they perceive progress, achievement, or support. This finding coincides with Gordillo Caicedo (2023) and Huamaní de la Cruz et al. (2024), who maintain that emotional self-regulation and self-efficacy strengthen resilience and academic performance. Therefore, formative research should not be understood solely as a source of stress, but also as a space for growth, personal development, and the consolidation of professional skills.

From an institutional perspective, the findings suggest that teacher guidance, constant feedback, and emotional support are relevant pedagogical factors for mitigating the negative impact of emotions such as anxiety, frustration, and insecurity. As shown in Figure 12, emotional support fosters confidence, group cohesion, and well-being—elements that contribute to the retention and successful completion of research processes. However, it is important to avoid absolute generalizations about contextual factors not directly measured in the student questionnaire; in this case, these elements should be interpreted primarily from the teacher's perspective and not as universal statements.

Taken together, these results reaffirm that emotions are a central component of university research training, not a secondary element of methodological learning. Therefore, it is essential to strengthen comprehensive institutional strategies that integrate emotional support, methodological guidance, and the development of self-regulation skills, with the aim of reducing negative emotional burdens, fostering more balanced research experiences, and improving the quality of higher education.

CONCLUSION

The study shows that emotions are a central component in the research training processes of university students, directly influencing their motivation, academic performance, and retention in research-related experiences. Among undergraduate students in the Department of Education and Humanities, emotions such as stress, anxiety, frustration, and worry predominate, especially during stages associated with formulating objectives, analyzing data, and meeting deadlines. This confirms that formative research represents an academically demanding and emotionally challenging experience.

However, the findings also show that positive emotions such as motivation, satisfaction, and pride emerge in response to significant progress, academic achievements, and mentoring experiences, demonstrating that research training not only involves emotional challenges but also opportunities for personal growth, resilience, and the consolidation of professional skills. In this sense, the coexistence of negative and positive emotions confirms the dynamic and multifactorial nature of the student's emotional experience during research processes.

From a teaching perspective, pedagogical support, constant feedback, and emotional support are identified as relevant factors for strengthening self-regulation, confidence, and academic retention. However, the contextual, technical, and relational factors mentioned should be interpreted primarily from the teachers' perspectives and not as absolute generalizations for the entire student population, given that the methodological design prioritized a descriptive and complementary approach.

Finally, it is concluded that strengthening comprehensive institutional strategies for university research training requires combining emotional support, methodological

guidance, and trusting learning environments to reduce negative emotional burdens, foster more balanced academic experiences, and improve the quality of higher education. These findings provide relevant evidence for rethinking research training from a more humane, contextualized, and emotionally sustainable perspective.

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