

Burnout syndrome during the development of pre-professional practices in university students

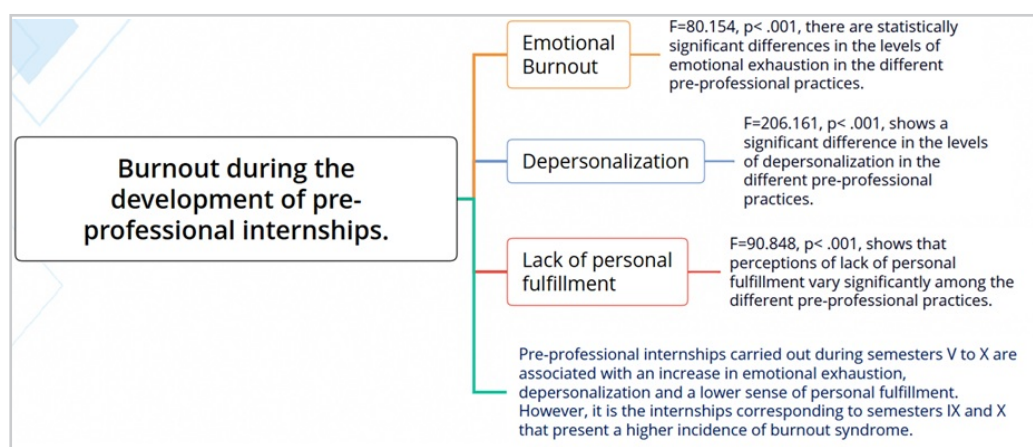
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Highlights

- Students who participated in pre-professional internships focused on the development of Didactic Units I and II experienced higher levels of emotional exhaustion;
- Students who engaged in other types of internships experienced lower levels of emotional exhaustion;
- The results suggest that the nature and demands of internships centered on guiding learning processes may increase emotional strain in future professionals.

Graphical abstract



Abstract

Burnout is a highly impactful issue among university students. The objective of this study was to compare the dimensions of burnout during the development of pre-professional practices among Secondary Education students at the Universidad Nacional del Altiplano de Puno. The study employed a quantitative approach with a comparative design and included 230 students. To assess burnout syndrome, the MBI instrument, composed of 22 items, was used. The results of the analysis of variance (ANOVA) indicate significant levels of burnout across the three dimensions analyzed: Emotional Exhaustion ($F = 80.154$, $p < 0.001$), Depersonalization ($F = 206.161$, $p < 0.001$), and Low Personal Accomplishment ($F = 90.848$, $p < 0.001$). The pre-professional practices carried out during semesters V, VI, VII, VIII, IX, and X are associated with higher emotional exhaustion, increased depersonalization, and a lower sense of personal accomplishment. This phenomenon may be related to the increasing burden of responsibilities and the direct exposure to complex and stressful situations in the work environment, which generate progressive psychological strain. Furthermore, the continuous exposure to emotional demands and pressure to meet professional standards may negatively affect motivation and the sense of accomplishment—key factors for overall well-being.

Keywords: Exhaustion. Burnout. Depersonalization. Pre-Professional Practices. Mental Health.

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INTRODUCTION

The International Labor Organization (ILO) and the World Health Organization (WHO) have recognized that the work environment and organizational structure are psychosocial risk factors that can negatively affect health¹. As a result, the concept of burnout has been expanded and studied on a global scale². This issue is not limited to workers; it has also been observed among university students from various academic fields, with reports of moderate levels of burnout syndrome³. The WHO defines burnout as a significant concern in both academic and professional contexts, manifesting symptoms such as anxiety, frustration, low self-esteem, loneliness, depression, and other related problems that are increasingly evident in educational settings⁴.

Given these findings, it is important for universities to implement comprehensive prevention and care programs for burnout, considering its growing prevalence and the negative impact it has on students' mental health. These programs should include strategies for the early identification of symptoms such as anxiety, frustration, low self-esteem, loneliness, and depression, as well as promote emotional support spaces, stress management techniques, and activities that foster overall well-being³.

The relationship between pre-professional practices and burnout syndrome among university students in Administration, Accounting, and Tourism is increasingly evident, as these students face several contextual demands that make them vulnerable to emotional exhaustion⁵. Factors such as socioeconomic status, travel time to practice locations, the dynamics between supervising instructors and students, the overload of parallel activities, frequent assessments, and competition among peers contribute significantly to this vulnerability⁶. Moreover, these pressures may lead to poor emotional regulation, further aggravating feelings of stress and exhaustion⁷.

A critical aspect of burnout is depersonalization, characterized by a negative and impersonal attitude that fosters emotional distancing from others⁴. Students involved in Pre-Professional Practices often display cynicism and indifference toward their academic responsibilities, which is reflected in high rates of absenteeism⁸, decreased motivation in classes, and reduced academic engagement⁹.

Furthermore, the impact of pre-professional practice development on students is reflected in decreased academic performance and increased symptoms of anxiety and depression¹⁰. A factor

that significantly contributes to this phenomenon is the lack of personal accomplishment¹¹, which manifests as a reduction in feelings of competence and success, accompanied by a tendency toward negative self-evaluation, especially in interpersonal interactions¹².

Students beginning their pre-professional practices often face a marked discrepancy between real-world work experiences and the theoretical knowledge acquired in the classroom¹³. This gap may lead them to feel that their academic training does not sufficiently equip them to confront the real challenges encountered in professional practice. As a result, they may experience uncertainty and frustration, highlighting the need to strengthen the integration of theory and practice within the educational curriculum, as well as to provide continuous support throughout the formative stages to facilitate a more effective transition into the workplace¹⁴. Consequently, they may feel incompetent and believe their efforts are futile, leading to frustration and a profound sense of dissatisfaction¹⁵. The demands associated with pre-professional practices, combined with the increasing incidence of burnout syndrome, underscore the urgent need for universities to implement targeted support strategies to address these challenges^{13,16}. Such actions could significantly contribute to improving students' emotional well-being and strengthening their academic performance, while also promoting a more enriching and fulfilling educational experience.

In Peru, pre-professional practices are integrated into the academic curriculum¹⁶ and function as an educational strategy aimed at developing the skills and competencies essential for success in professional life¹³. Moreover, Law 31396¹⁷ in Peru explicitly recognizes pre-professional practices as valid work experience. However, the implementation of these practices has produced adverse effects on students' personal and academic lives, highlighting the increasing relevance of burnout as a subject of study¹⁸. This phenomenon is particularly significant, as the dimensions of burnout typically observed in professional environments also manifest among university students who experience it as a result of the demands imposed by their mandatory pre-professional practices¹⁹. University students are exposed to similar factors found in professional contexts, including everyday physical environments, academic pressures, workload, and specific performance objectives.

A recent study conducted at the Universidad Nacional del Altiplano revealed that 46% of the students evaluated were diagnosed with burnout syndrome, while 54% did not exhibit this condition. The findings indicate that ninth-semester students show the highest level of emotional exhaustion, reaching 83%. Furthermore, 81% of eighth-semester students demonstrated a high degree of depersonalization, and 4% reported low personal accomplishment. These results point to a significant

concern regarding students' mental health, as burnout syndrome manifests through symptoms such as exhaustion, negative attitudes, and a growing sense of devaluation toward daily activities²⁰.

In this context, the objective of this study was to identify the levels of burnout syndrome present among students of the Professional School of Secondary Education at the Faculty of Education of the Universidad Nacional del Altiplano, in Puno, during the course of their pre-professional practices.

METHOD

This study was conducted using a cross-sectional, comparative-descriptive design involving students from the Professional School of Secondary Education, part of the Faculty of Education Sciences at the Universidad Nacional del Altiplano de Puno, during the period from April to June 2024. During the ad-

ministration of the instruments, the study's objective was clearly and transparently communicated to all participants. Additionally, the informed consent process was thoroughly explained, ensuring that each student fully understood their rights and the voluntary nature of their participation in the research.

Table 1 - Characteristics of Secondary Education Students from the Faculty of Education Sciences at the Universidad Nacional del Altiplano de Puno, 2024.

Variable	n	%
Age	21.3 +-2.8	
< 20 years	66	28.7
Between 20 and 25 years	145	63
> 25 years	19	8.3
Sex		
Female	181	78.9
Male	49	21.1
Works and studies		
No	2128	55.8
Yes	102	44.2
Lives with parents		
With both	92	40.1
With neither	88	38.4
With one of them	50	21.5
Type of housing		
Rented	129	56.0
Owned	101	44.0
Pre-professional practices completed		
Curricular Planning Practice (6 th semester)	61	26.52%
Simulated Session Practice (7 th semester)	41	17.83%
Innovation and Teacher Training Practice (10 th semester)	28	12.17%
Diagnostic Practice (5 th semester)	43	18.70%
Development of Didactic Units I (8 th semester)	30	13.04%
Development of Didactic Units II (9 th semester)	27	11.74%

Note: \bar{x} : mean; SD, standard deviation.

A total of 230 university students participated in this study, with a mean age of 21.3 ± 2.8 years. Of the sample, 181 (78.9%) were women and 49 (21.1%) were men. Regarding employment status, 128 students (55.8%) were exclusively dedicated to their studies, while 102 (44.2%) were both working and studying. In terms of housing arrangements, 92 students (40.1%) lived with both parents, 88 (38.4%) lived with neither, and 50 (21.5%) lived with one parent. Concerning housing type, 129 students (56%) lived in rented accommodation, while 101 (44%) lived in owned homes. These data provide a comprehensive view of the participants' demographic and social context, which is essential for better understanding the dynamics that may influence their academic and personal experiences.

With regard to the completion of pre-professional practices, a varied distribution is observed across the different semesters. The Curricular Planning Practice, corresponding to the sixth semester, was the most frequent, with 26.52% participation. This was followed by the Simulated Session Practice, from the seventh semester, with 17.83%. In the eighth and ninth semesters, the Practices in the Development of Didactic Units I and II accounted for 13.04% and 11.74%, respectively, reflecting a focus on the practical application of pedagogical strategies. Additionally, the Diagnostic Practice, in the fifth semester, represented 18.70%, highlighting its relevance in the assessment and analysis of educational contexts. Lastly, the Innovation and Teacher Training Practice, in the tenth semester, although accounting for only 12.17%, emphasizes the importance of innovation in education (Table 1).

The level and variation of burnout syndrome were assessed using a German version of the Maslach Burnout Inventory (MBI), a widely recognized instrument in occupational burnout research¹. This questionnaire consists of 22 items that measure the three core dimensions of burnout: Emotional

Exhaustion (EE, 9 items), Depersonalization (DP, 5 items), and Reduced Personal Accomplishment (PA, 8 items)¹. The internal consistency of the instrument showed a Cronbach's alpha coefficient of 0.982. This result indicates excellent reliability, suggesting that the questionnaire items are highly interrelated and effectively measure the intended construct. The scale was applied to a total of 230 university students from the Professional School of Secondary Education who were undergoing pre-professional practices, thus allowing for a clear understanding of the impact of these experiences on their emotional well-being.

The use of the MBI is particularly relevant in this context, as it provides valuable data on how academic and work demands affect students. By assessing these dimensions, the study not only identifies the prevalence of burnout among participants but also makes it possible to observe changes in burnout levels over time.

In this study, descriptive statistical procedures were used, including measures of central tendency such as means, frequencies, and standard deviations, to summarize and characterize the collected data. In addition, a univariate analysis of variance (ANOVA) was conducted to explore specific differences between groups regarding each dimension of burnout. Subsequently, Tukey's HSD (Honest Significant Difference) test was applied, a statistical method used for multiple comparisons of burnout levels based on the pre-professional practices completed, following the ANOVA.

All statistical analyses were performed using SPSS version 27.0 for Windows, a widely used tool in social and psychological research that facilitates complex analyses. The level of statistical significance was set at $p < 0.05$, indicating that results with less than a 5% probability of occurring by chance were considered statistically significant.

RESULTS

Table 2 - Analysis of Variance (ANOVA) of Burnout in Relation to the Completion of Practices by Secondary Education Students at the Faculty of Education Sciences, Universidad Nacional del Altiplano de Puno, 2024.

		Sum of Squares	df	Mean square	F	Sig.
Emotional Exhaustion	Between groups	4427.618	5	885.524	80.154	.000
	Within groups	2485.741	225	11.048		
	Total	6913.359	230			
Depersonalization	Between groups	7039.753	5	1407.951	206.161	.000
	Within groups	1536.611	225	6.829		
	Total	8576.364	230			
Personal Accomplishment	Between groups	3326.334	5	665.267	90.848	.000
	Within groups	1647.648	225	7.323		
	Total	4973.983	230			

This study provides initial evidence regarding the levels and variations of burnout symptoms among students engaged in pre-professional practices at the Professional School of Secondary Education of the Faculty of Education Sciences, Universidad Nacional del Altiplano de Puno. Table 2 presents the ANOVA results, which indicated that burnout levels are manifested across the three analyzed dimensions: Emotional Exhaustion ($F = 80.154$, $p < 0.001$), De-

personalization ($F = 206.161$, $p < 0.001$), and Low Personal Accomplishment ($F = 90.848$, $p < 0.001$).

The pre-professional practices carried out during the 5th, 6th, 7th, 8th, 9th, and 10th semesters may trigger emotional exhaustion, depersonalization, and a sense of reduced personal accomplishment. This variable is also associated with various circumstances and activities that generate anxiety and discomfort among university students¹⁴.

Table 3 - Tukey's HSD Comparison of Pre-Professional Practices in Relation to Emotional Exhaustion Among Secondary Education Students at the Faculty of Education Sciences, Universidad Nacional del Altiplano de Puno, 2024.

Tukey HSD ^{a,b}		Emotional Exhaustion		
Type of pre-professional practice	N	Subconjunto para $\alpha = 0,05$		
		1	2	3
Curricular Planning Practice (6 th semester)	61	5.76		
Simulated Session Practice (7 th semester)	41		8.37	
Innovation and Teacher Training Practice (10 th semester)	28		9.04	
Diagnostic Practice (5 th semester)	43		9.16	
Development of Didactic Units I (8 th semester)	30			16.77
Development of Didactic Units II (9 th semester)	27			18.11
Sig.		1.000	.915	.533

University students who completed the pre-professional practices in the Development of Didactic Units I and II (learning facilitation) reported a high level of emotional exhaustion, with HSD = 16.77 and HSD = 18.11, respective-

ly, compared to students who completed the Curricular Planning Practice (HSD = 5.76), Simulated Session Practice (HSD = 8.37), Personal Training Practice (HSD = 9.04), and Diagnostic Practice (HSD = 9.16) (Table 3).

Table 4 - Tukey's HSD Comparison of Pre-Professional Practices in Relation to Depersonalization.

Depersonalization				
Tukey HSD ^{a,b}				
Type of pre-professional practice	N	Subset for $\alpha = 0.05$		
		1	2	3
Curricular Planning Practice (6 th semester)	61	4.84		
Simulated Session Practice (7 th semester)	28	5.46	5.46	
Innovation and Teacher Training Practice (10 th semester)	43	5.84	5.84	
Diagnostic Practice (5 th semester)	41		6.95	
Development of Didactic Units I (8 th semester)	27			18.37
Development of Didactic Units II (9 th semester)	30			18.40
Sig.		.596	.164	1.000

The mean values and standard deviations of students in relation to pre-professional practices concerning depersonalization are presented in Table 4. On average, university students in the 9th and 10th semesters, who completed the Development of Didactic Units I and II practices, reported high levels of depersonalization

(18.37 and 18.40, respectively), compared to students in the 5th and 6th semesters who completed the Curriculum and Professional Training practices, with scores of 4.84 and 5.46, respectively—values that were statistically lower than the depersonalization reported by students in the more advanced semesters ($p < 0.05$).

Table 5 - Tukey's HSD Comparison of Pre-Professional Practices in Relation to Personal Accomplishment.

Lack of Personal Accomplishment				
Tukey HSD ^{a,b}				
Type of pre-professional practice	N	Subset for $\alpha = 0.05$		
		1	2	3
Curricular Planning Practice (6 th semester)	28	14.5714		
Simulated Session Practice (7 th semester)	43	14.6047		
Innovation and Teacher Training Practice (10 th semester)	61	16.0806		
Diagnostic Practice (5 th semester)	41	16.2683		
Development of Didactic Units I (8 th semester)	30		22.9333	
Development of Didactic Units II (9 th semester)	27			25.3333
Sig.		.093	1.000	1.000

The data indicate that, on average, university students who participated in the pre-professional practices of Development of Didactic Units I and II reported high levels of dissatisfaction regarding their personal accomplishment, with scores of 22.94 and 25.34, respectively (Table 5). These groups showed the highest levels of lack of personal accomplishment. Furthermore, it was observed that

the perception of personal accomplishment is statistically lower in the upper semesters ($p < 0.05$).

In the 5th, 6th, 7th, and 8th semesters, personal accomplishment scores were 14.5714; 14.6047; 16.0806; and 16.2683, respectively, reflecting lower values compared to the dissatisfaction observed in the more advanced semesters ($p < 0.05$).

DISCUSSION

Overall, higher scores in Emotional Exhaustion ($F = 80.154$, $p < 0.001$), Depersonalization ($F = 206.161$, $p < 0.001$), and Low Personal Accomplish-

ment ($F = 90.848$, $p < 0.001$) were observed among students in the 9th and 10th academic semesters compared to those beginning their pre-profession-

al practices in the 5th and 6th semesters. This study contributes to the existing literature documenting the negative impact of pre-professional practices on students' mental health globally^{18,21,22,23}. Research in this area highlights the critical role of specific personal and psychosocial factors in the onset and development of burnout among university students^{12,18,20}.

The demands faced by students during pre-professional practices often result in considerable mental and physical exhaustion, primarily due to task overload, insufficient time for completing academic activities, and inadequate preparation for assessments⁴. This highlights the urgent need for educational institutions to recognize these stressors and implement support measures capable of mitigating the mental health challenges faced by students in high-pressure learning environments.

The significant disparity in emotional exhaustion levels among students engaged in different types of pre-professional practice has profound theoretical implications for understanding the dynamics of teacher education and emotional well-being. Students who participated in the Development of Didactic Units I and II practices reported notably high emotional exhaustion scores (HSD = 16.77 and HSD = 18.11), which may reflect the intense emotional labor required in direct instructional roles, consistent with existing theories of emotional labor in educational contexts²⁴.

On the other hand, the lower exhaustion levels observed in curriculum-related practices (HSD = 5.76) and other modalities suggest that theoretical engagement may mitigate the emotional demands typically associated with practical teaching experiences. This phenomenon can be understood through the lens of the interactionist model of teacher well-being, which posits that the interplay between contextual factors and individual coping mechanisms shapes educators' emotional states^{25,26}.

Consequently, these results underscore the need for teacher education programs to integrate support structures aimed at strengthening emotional resilience, thereby promoting both the well-being of future educators and the quality of educational outcomes.

The data presented in Table 4 reveal a marked contrast in depersonalization levels among university students engaged in pre-professional practices. Participants in the Development of Didactic Units I and II reported significantly higher means (18.37 and 18.40, respectively) compared to their peers involved in Curriculum and Professional Training

practices (4.84 and 5.46). This statistically significant difference ($p < 0.05$) highlights relevant theoretical implications regarding students' emotional experiences at different stages of their teacher training²⁷.

The elevated levels of depersonalization among students in more advanced semesters suggest that the intensity and demands of direct instructional roles may foster emotional distancing from learners, potentially impacting their professional identity and teaching effectiveness²⁸. This finding aligns with theories on burnout and emotional labor, which suggest that prolonged exposure to high-pressure educational environments can lead to adverse psychological consequences²⁹. For this reason, it is essential that teacher education programs incorporate strategies to address these emotional challenges, fostering resilience and encouraging a healthier educational climate capable of mitigating the risks of depersonalization and exhaustion among future teachers.

The data also indicate that university students involved in the Development of Didactic Units I and II pre-professional practices show significantly elevated levels of dissatisfaction with personal accomplishment, with mean scores of 22.94 and 25.34, respectively. This difference, also statistically significant ($p < 0.05$), highlights theoretical implications concerning the development trajectory of satisfaction and self-efficacy among students in teacher education programs.

The higher perception of dissatisfaction among students in the final semesters may reflect the increasing pressures and expectations associated with direct teaching roles, which can undermine their sense of achievement and hinder the consolidation of their professional identity^{30,31}. This perception is consistent with self-determination and motivation theories, which emphasize the importance of supportive educational environments that foster a sense of competence and belonging among students³².

While addressing these challenges is essential to optimizing the educational experience and ensuring that future teachers feel competent and fulfilled in their roles, it is important to acknowledge that the proposed solutions may be limited by contextual factors and the availability of resources within each institution. Moreover, individual differences and external conditions may influence the effectiveness of interventions, thus requiring a flexible approach that is sensitive to the specificities of each educational setting.

CONCLUSIONS

The pre-professional practices conducted during the 5th, 6th, 7th, 8th, 9th, and 10th semesters are associated with higher levels of emotional exhaustion, depersonalization, and a lower sense of personal accomplishment. This variable is compounded by various circumstances and activities that contribute to anxiety and discomfort among university students. These findings underscore the urgent need for institutions to implement support measures aimed at mitigating the risks associated with burnout.

The higher scores related to the Didactic Units suggest that these practices may impose more intense emotional demands on students, possibly due to the complexities involved in effectively fa-

cilitating learning outcomes. In light of this, it is imperative that educational institutions recognize such variations and implement targeted interventions to alleviate exhaustion, particularly among those engaged in practices with greater emotional demands.

These results suggest that, as students progress in their academic programs and face increasingly complex and demanding tasks, they may experience more intense feelings of depersonalization. This phenomenon may be attributed to the heightened emotional labor involved in teaching practices, which require not only pedagogical skills but also a significant emotional investment in students' learning outcomes.

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Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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