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Distance education psychosocial learning environment and graduate students' academic satisfaction during the pandemic

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***Abstract*---**The closure of universities in the year 2020 caused by the pandemic that originated the COVID- determined the Peruvian government to impose distance19 The closure of the universities in the year caused by the pandemic that originated the COVID determined the Peruvian government to impose distance education. This required the enactment of regulations to ensure continuity of services and access to quality education adaptable to the distance learning modality. However, the psychosocial learning environment of this study modality has a social structure that differs from that of a face-to-face class, which could have a considerable impact on learning outcomes and therefore on students' academic satisfaction. For this reason, the objective of the study was to determine the relationship between the psychosocial learning environment of distance education and the academic satisfaction of graduate students during the pandemic. The methodology used was a quantitative approach with correlational design. The sample consisted of 123 The sample consisted of graduate students of a public university, who were administered two questionnaires; the first to measure their perception of the psychosocial factors affecting their psychosocial learning environment of distance education during the pandemic, using the

Sp-DELES scale; and the second to measure academic satisfaction using the SA scale. The results demonstrated a perfect positive relationship with a $rs = .935$. determining a relationship between the psychosocial learning environment of distance education and the academic satisfaction of graduate students during the pandemic.

Keywords ---psychosocial learning environment, distance education, academic satisfaction, social climate.

Introduction

In the year 2020, Peru, like other countries in the world, faced with the high level of transmission and contagion of the COVID-19 disease, adopted the recommendations of the World Health Organization as a sanitary measure. (*OMS)* the recommendations of the World Health Organization by instituting mandatory confinement or quarantine. Due to this fact, the normal development of activities was interrupted. Education, for example, was carried out through distance learning. This challenge was compounded by the desire to preserve the right to higher education. (IIESAC, 2020). Likewise, suddenly and without further preparation, the educational community had to adapt to this modality of study. (Cóndor-Herrera, 2020). However, it is important to point out that distance education in Peru is not a recent development. According to the University Law, it was allowed to be developed in postgraduate and adult education programs, although only in a complementary percentage to the face-to-face modality. (SUNEDU, 2014).

At first, the implementation of distance education caused difficulties at the beginning because students were not prepared, due to the fact that for most of them the choice of the study modality for their professional training was the face-to-face modality, so for many this form of study was a novelty. (Nair y Radhakrishnan, 2021) and there were doubts as to whether this service could be of high quality. (Stankovska et al., 2021). On the other hand, the Peruvian government published the RV N° 085 "Orientations for the continuity of the university higher education service", which provided recommendations for the continuity of the university higher education service. (SUNEDU, 2020a) which provided recommendations for the use of synchronous-asynchronous connectivity platforms and media, empowering the National Superintendence of University Higher Education (SUNEDU, 2020b) to monitor the adaptation to distance learning environments; the use of materials, resources and appropriate methodologies in order to achieve the academic objectives proposed in the professional training of students. (SUNEDU, 2020b).

The development of virtual classrooms also brought about the limitation and reduction of interaction among students, who were used to socializing in university classrooms; likewise, it also affected the relationship between teacher and student. teacher. Both Goh y Khine (2002) described that university students spend most of their time in university classrooms; thus, their social interactions turn out to be as important as their academic performance. For this reason, the

quality of the psychosocial learning environment in which students learn may play a critical role in what is desired for education. (Soria, 2022).

According to the above, the first study variable was the psychosocial learning environment of distance education, which is in line with the environmental psychology approach, whose subject of study deals with the interrelationship between people and their physical and social environment through its temporal and spatial dimensions (Moser, 2003). In addition, it is framed in the theory of social ecology, which explains the relationships generated between individuals according to the environment in which they develop. This includes the aspects of the social ecology of Moos (1976) according to which authors such as Moos (1974), RH (2002) and Walker (2003) mentioned that these represent the most representative domains of a large number of psychosocial environments considering the relational aspect, the aspect of personal development and, finally, the aspect of maintenance and change of the system. Likewise, it also integrates the theory of web-based (asynchronous) distance education which is framed in the general field of distance education. The psychosocial learning environment variable of distance education was dimensioned taking into account the contributions of Scott L. Walker (2003; 2020) who enunciated six psychosocial learning factors: 1) teacher support, which takes into account the interest that the teacher shows for the students by providing formative feedback; 2) interaction and collaboration among students, which contemplates communication and collaboration among students in the context of distance education due to the pandemic; 3) personal relevance, which takes into account the students' level of connection around experiences in the classroom and outside the classroom; 4) authentic learning, which takes into consideration the opportunity for students to address real-world problems; 5) active learning, where students regulate their learning and construct their learning by taking an active role in it; and 6) student autonomy, where students assume proactive behaviors by taking initiative and making decisions about their learning. To effectively measure the perception of the psychosocial learning environment of distance education, we used the Spanish version of the DELES scale; Sp-DELES, which was adapted by Fernández-Pascual et al. (2015) to Spanish.

The second variable was academic satisfaction which; around the approach of ~~to the~~ quality management of the educational service, this contemplates the level of pleasure felt by the user of a service. One way to measure the perception is by consulting the users of the service (Álvarez et al., 2014). In this context, it is the students who evaluate the learning experiences in terms of teacher performance and other attributes related to the management of the institution. (Franco et al., 2013). Students are satisfied when the expectations they had were met. (González-Peiteado et al., 2017)Therefore, "quality is a function of meeting pre-established expectations; this is the degree of coherence between intention, action and achievement". (Montenegro Ordoñez, 2020, p.3)This variable, academic satisfaction, took the contributions of Bernal et al. (2016)This variable, which can be described as the delight, liking or pleasure felt by the student for his academic activities with respect to a career or academic program chosen for his professional training, was dimensioned according to the contributions of the authors of the study. This variable was dimensioned in terms of: 1) teaching activity, 2) academic planning and 3) educational services.

According to the above, as an objective we sought to determine the relationship between the psychosocial learning environment of distance education and the academic satisfaction of graduate students during the pandemic. This research was considered important because it consulted the perception of one of the main actors of the educational system; the students, when higher education was affected by the pandemic caused by COVID-19. This will contribute to the knowledge of the influence of psychosocial factors on academic satisfaction and, therefore, on the teaching and learning process at the higher education level. Likewise, this research will allow future researchers to make comparisons of post-emergency health effects in higher education. Finally, the results of the research constitute fundamental inputs for the design of educational policies.

Methodology

A basic quantitative approach was used, and the method used in this study was the hypothetical-deductive and correlational design. The sample consisted of 123 students belonging to the postgraduate program of a public university, in which 93.5 % were men (115) y 6.5 % women (8) and the predominant age was between the ages of 25 a 34 years (42.30 %) and most of them work and study (98.40%), have children (62.60 %) and are of Peruvian nationality (99.20 %). The technique used was the survey and the instrument was two questionnaires: the first was the Sp-DELES scale with items that measured the perception of the psychosocial learning environment of distance education and the second the SA scale that measured the perception of academic satisfaction with distance education. 34 items that measured the perception of the psychosocial learning environment of distance education and the second the SA scale that measured the perception of academic satisfaction with items; both instruments were subjected to reliability through pilot tests. 25 items; both instruments were subjected to reliability through pilot tests.

Table 1
Cronbach's Alpha reliability scales (α)

	Cronbach's alpha	N° of elements
Sp-DELES Scale		
	.982	34
Scale SA	.977	34

Table 1 showed that both instruments were highly reliable for the application.

Because the study was carried out in the context of the health emergency, it was administered virtually using the *Google Forms*. The inclusion criterion considered that the participants gave their informed consent and were enrolled in the chosen specialties; the exclusion criterion was to exclude the participation of students who did not give their approval to participate. The instrument was applied in October 2021.

Results

The data obtained were processed using IBM SPSS v26 software, from which the following information corresponding to descriptive statistics was obtained.

Table *2*
Distribution of frequencies of responses grouped by levels of the distance education psychosocial learning environment variable measured by the Sp-DELES scale

		Frequency	Percentage	Valid percentage	Cumulative percentage
Valid	Under	3	2.4	2.4	2.4
	Medium	41	33.3	33.3	35.8
	High	79	64.2	64.2	100.0
	Total	123	100.0	100.0	

According to table 2, it is evident that the perception of the participants was positioned at the high level with 64.2 %. This means that students feel satisfied with the psychosocial learning environments for the development of their training their learning.

Table 3
Frequency distribution of responses grouped by levels of the dimensions of the psychosocial learning environment variable of distance education

Levels	Teacher support		Interaction and collaboration among students		Personal relevance		Authentic learning		Active learning		Student autonomy	
	fi	po%	fi	po%	fi	po%	fi	po%	Fi	po%	fi	po%
Under	4	3.3	5	4.1	2	1.6	0.0	0.0	0.0	0.0	1	0.8
Medium	21	17.0	22	17.9	20	16.3	12	9.8	19	15.4	14	11.4
High	98	79.7	96	78.0	101	82.1	111	90.2	104	84.6	108	87.8
Total	123	100.0	123	100.0	123	100.0	123	100.0	123	100.0	123	100.0

Table 3 showed that all six psychosocial subscales have high levels of perception. The highest scoring one was authentic learning with 90.2 % and the lowest scoring was collaboration among students with 78.0 %. This suggests that students have adapted positively with psychosocial learning environments in distance education however social isolation reduced interaction and collaboration among them.

Table 4
Frequency distribution of the responses grouped by levels of the academic satisfaction variable

		Frequency	Percentage	Valid percentage	Cumulative percentage
Valid	Under	14	11.4	11.4	11.4
	Medium	27	22.0	22.0	33.3
	High	82	66.7	66.7	100.0
	Total	123	100.0	100.0	

Table 4 showed that the participants' perception of their academic satisfaction was at a high level with a high level of satisfaction with the services they have

been receiving during distance education. 66.7 %. In this sense, students were pleased with the services they have been receiving during distance education.

Table 5
Frequency distribution of the responses grouped by levels of the dimensions of the academic satisfaction variable

Levels	Teaching activity		Academic planning		Educational services	
	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
Under	7	5.7	5	4.0	12	9.7
Medium	20	16.3	29	23.6	27	22.0
High	96	78.0	89	72.4	84	68.3
Total	123	100.0	123	100.0	123	100.0

Table 5 showed that the subscales of academic satisfaction were located at the highest levels of perception of the participants, the best positioned being teaching activity with a 78.0 % and the lowest rated educational services with 68.3 %. This showed that the teaching activity and academic planning received by the students were positive, but not the educational services. Rawal et. al (2021), Poongodi M et. al(2022), Poongodi M et. al (2021), Dhiman P et.al (2022), Sahoo S.K et.al (2022), K.A et. al(2022) , Dhanraj R.K et. al (2020), Yan Zhang et.al (2020), Md Hossain et. al (2021), Md Nazirul Islam Sarker et. al (2021) ,Y. Shi et. al (2020), Guobin Chen et. al (2020), Poongodi M et. al (2019), Poongodi M et. al (2020)

Table 6
Level of nonparametric correlation between the variables psychosocial learning environment of distance education and academic satisfaction

			Psychosocial learning environment distance education.	Academic ofsatisfaction
Spearman's Rho	Psychosocial learning environment of distance education.	Correlation coefficient	1.000	.935**
		Sig. (bilateral)	.	.000
		N	123	123
	Academic satisfaction	Correlation coefficient	.935**	1.000
		Sig. (bilateral)	.000	.
		N	123	123

**. Correlation is significant at the 0.01 significance level (bilateral).

Table 6 shows that a significance value was obtained that is less than the significance level of $Sig. = 0.000$ which is lower than the significance level 0.010 ($Sig. < 0.010$) in addition to reaching a perfect positive correlation level with an $rs = .935$** In summary, it was possible to demonstrate that the relationship

between the psychosocial learning environment variables of distance education and academic satisfaction is quite high.

Discussion

The results obtained allow inferring that the psychosocial learning environment of distance education is related to the academic satisfaction of graduate students during the pandemic because they presented a level of correlation $rs = .935, Sig. < .010$. These findings are different from those presented in the work of Nair y Radhakrishnan (2021) in India, who, using the DELES scale of Walker y Fraser (2005) scale, explored the level of satisfaction with online learning in India in the setting of the coronavirus pandemic. The authors concluded that distance education has resulted in less teacher-student interaction. From another perspective, in Bulgaria, Stankovska et al. (2021)They found that, from the students' point of view, the inclusion of collaborative activities according ~~to~~ their interests helps online learning and student satisfaction with online courses. In the study of Boullosa y Bustamante (2017)study, the findings showed a significant positive relationship between the variables online learning, measured through the Sp-DELES psychosocial scale, and student satisfaction, coinciding with those obtained in this study. However, it is important to point out that Boullosa y Bustamante (2017) The research was applied to students who had voluntarily chosen the study modality. These results also coincided with Zapata (2020) who, in the same way, used the Sp-DELES scale and showed that the perception of the quality of university teaching service was significantly related to virtual learning environments.

Conclusions

It is concluded that there is a relationship between the psychosocial learning environment of distance education and the academic satisfaction of graduate students during the pandemic; moreover, this relationship was quite high according to the statistical processing. One of the explanations that allowed inferring these results was the context in which the study was conducted. In the second year that Peru faces the COVID-19 pandemic, it went through an adaptive process during 2020, which was then adjusted in 2021. In fact, at the beginning, multiple difficulties were revealed, such as lack of connection, lack of technological resources and emotional conditions resulting from the stress they had to face due to the new modality of non-classroom education, and to this was added the uncertainty caused by the appearance of the new variants of the virus. 2021, unlike the previous year, allowed the educational community to become more resilient and better prepared for the development of academic activities~~,~~ allowing learning in the psychosocial learning environment of distance education to be able to adapt to the spaces provided by non-face-to-face education.

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