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Professors' didactic performance and students' didactic performance in psychology classes at a Peruvian university

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The teaching-learning of the psychological discipline involves teacher-student interactions, which are structured under different criteria of didactic performance in the various practices of psychological teaching. The present research was conducted under the interbehavioral model of didactic performance that includes seven didactic criteria of teacher performance and six criteria of student didactic performance. Forty-nine regular teachers and 541 students from the Faculty of Psychology of a public university in Lima participated. The teachers answered an online self-assessment questionnaire about their performance on seven didactic criteria, and the students also answered an online self-assessment questionnaire about their performance on six didactic criteria. The results showed significant but negative correlations between the teacher's didactic performance in Illustration and Evaluation with all the students' didactic performances, and a significant and positive relationship of the teacher's didactic performance in Didactic Planning with all the students' didactic performances. Likewise, it was found that the didactic performance of the self-assessed students was significantly predicted by the level of studies in which the subject is taught (basic or initial, intermediate or advanced), by the teacher's performance in Didactic Planning, Competence Exploration, Evaluation, and by the teacher's experience in teaching psychology.

KEYWORDS

teacher performance, didactic criteria, psychology classes, self-report, university students

1 Introduction

The study of teaching in higher education has constituted in the last decade an increasingly influential field of study to understand didactic teacher-student interactions. However, the identification of teacher actions in teaching-learning situations has received greater attention from educational researchers, e.g., teaching methods, approaches and content; planning and organization of teaching; functional and cognitive complexity of teaching-learning; formative assessment, feedback and application; teacher-student interactions, self-regulation and classroom management, among other fundamental

aspects in the teaching-learning process in the context of university education (Arroyo-Barriguete et al., 2023; Bazán-Ramírez et al., 2021; Bell et al., 2019; Chan, 2018; García-Gómez et al., 2017; Grácio et al., 2023; Jellicoe and Forsythe, 2019; König et al., 2017; Kreitzer and Sweet-Cushman, 2022; Krijgsman et al., 2019; Nasser-Abu, 2017).

These criteria or fields of teacher performance in didactic interactions can come from different theoretical models on teaching. Some of these performance categories have been derived from psychological models in the educational field, for example, Carrol's psycho-pedagogical model (1963, 1989), the educational interbehavioral field model (Kantor, 1975), the interbehavioral model of didactic performance (Carpio et al., 1998; Irigoyen et al., 2011; Silva et al., 2014), the Transactional model (Dees et al., 2007), the Teaching Functions model (Borges et al., 2016; Hernández-Jorge, 2005), among others.

Similarly, Chan (2018), from semi-structured interviews with 72 Chinese associate degree students in Hong Kong on effective teaching and good teacher, derived three main categories of teacher performance: teaching approaches and content, teacher-student relationship with teacher personal characteristics and roles. Although there are various ways of defining and classifying the performances of teachers and also of students when they interact in teaching and learning situations in the university context, studies on teacher performance have focused more on teacher performance and its effect on student learning.

Dughi et al. (2023) with a sample of Romanian university students reported that, students' perceived comfort in the classroom and perceived faculty support significantly mediated sequentially the relationship between teachers' cognitive presence (triggering events, exploration, integration and resolution, knowledge validation through cooperation and reflection in a community of inquiry), and students' determination and learning. The authors conclude that, student success and satisfaction have consistently improved in educational situations where instructors and students connect frequently and meaningfully. Sarder and Haider (2023) demonstrated the effect of pedagogical practice on the academic performance of Bangladeshi university students as perceived by the students themselves. In this study, teachers' communication skills, subject matter knowledge, and teaching strategies significantly influenced students' academic performance in the course. Likewise, the authors reported that the personal attributes of the students, their interest in the course and the total hours of study were also determinants of academic performance. Likewise, in a study with Peruvian university students, Bazán-Ramírez et al. (2023) reported the functional correspondence between six pairs of didactic performance criteria of the teacher and the students in biological sciences classes.

Although this interest in collecting evaluative evidence on how teachers and their students perform in didactic interactions in university education has considered various methods and instruments ranging from naturalistic observations, systematized records of classes, focus groups or semi-structured interviews on performance in didactic interactions, it is the measurement instruments and self-report scales that have prevailed in the literature on assessment of didactic performance, particularly focusing on teacher performance evaluated by the student body.

The use, abuse and limitations of student evaluation with questionnaires on the behavior and progression of teaching performance have had important criticisms (Arroyo-Barriguete et al., 2023; Blömeke et al., 2015; Hornstein, 2017; Quansah et al., 2024; Rolph et al., 2023; Weenink et al., 2024).

Rolph et al. (2023) note that, because of this, many institutions have developed their own internal multimodal approach to faculty evaluation and professional advancement review that eliminates the underlying bias associated with survey results and questionnaire application. Thus, models of teaching evaluation have been derived based on a philosophy of mentoring, guidance, and self-reflection; as well as the use of external evaluations to review overall institutional academic quality (Rolph et al., 2023). Likewise, Metsäpelto et al. (2022) developed a multidimensional model of teaching processes based on a panel of experts from universities in Finland that included: teaching competencies (referring to teachers' effective job performance), competencies (knowledge, skills and other individual competencies that underlie and enable effective teaching performance) and situation-specific skills to perceive, interpret and make decisions in situations involving teaching and learning.

In this way, didactic performance evaluation systems have also included teachers' own assessment of their conceptions and practice of university teaching (Grácio et al., 2023); discussions with focus groups of students and teachers on teaching centered on learning and students, constructive feedback, content, evaluation, cultural environment and the time dedicated to teaching vs. the time dedicated to their professional practice (Findyartini et al., 2023).

In the specific case of the teaching of psychology, this occurs in interbehavioral fields (Kantor, 1975) and means much more than the exchange of didactic information, since teaching can also serve as an agent of change (Knappe, 2023), as it teaches and learns about specific and historical topics of the psychological discipline, its pedagogy and as a scientific practice (Carpio et al., 1998; Morris, 2022; Silva et al., 2014; Steinebach, 2023). Therefore, the behavior of the agents and the educational processes in a teaching/learning situation can be experimentally described and analyzed (Bazán-Ramírez et al., 2022; Ibáñez, 1999, 2007), under the perspective that learning involves the reorganization of behavioral systems, which demands that behavioral analyses should have a more ecological orientation (Silva et al., 2019), for example, the various forms of organization of course delivery, the quality of teaching, evaluation and feedback of learning in psychology (Henriquez et al., 2023), among other criteria of didactic performance.

Teaching-learning practices in the university context, and specifically in the teaching of psychology, can be improved if there is information regarding how these didactic interactions are, regardless of the theoretical model implicit in teaching. Observational methodology could offer more precise approaches to this functional correspondence between didactic teacher-student behavior in the context of higher education (Bazán-Ramírez et al., 2022; Bell et al., 2019; Borges et al., 2016; Brocca, 2024; Sergienko et al., 2021; Velarde and Bazán, 2019). That is, in a didactic interaction, the teacher's didactic performance and the student's didactic performance correspond functionally. Therefore, the teacher self-reports about his or her didactic performance as a teacher, and student ratings about his or her own didactic

performance as a student, can also provide evidence of functional correspondence between teacher-student didactic performances and can provide important insights for the feedback of both performances and for the improvement of teaching and learning in the university context.

Given the scarce literature on the correspondence between teachers' didactic performances self-rated by teachers themselves and students' didactic performances self-rated by the students themselves, in the teaching and learning of psychology, the present study was proposed based on the didactic performance model developed by interbehavioral psychologists (Bazán-Ramírez et al., 2022, 2023, 2025; Carpio et al., 1998; Irigoyen et al., 2011; Silva et al., 2014; Velarde and Bazán, 2019). Two research questions were posed. (1) Are there significant relationships between didactic performance criteria of teachers self-evaluated by teachers and didactic performance criteria of students self-evaluated by students, in the context of teaching psychology at a university in Lima, Peru? For this first question, indexes were taken of seven criteria of teaching performance self-evaluated by the teachers and six criteria of student didactic performance evaluated by the students.

The second question was: What are the variables that best predict students' evaluation of their own performance in a teaching interaction? For this second question the predictors were: the teaching performance of the teacher self-assessed by the teacher, the level of studies to which the subject being evaluated corresponds, and the teacher's years of experience. As a dependent variable, an index of students' self-evaluation of their performance in a didactic interaction (student didactic performance).

There were two objectives for this study: (1) To determine the correlations between the self-reported assessments of the teacher's didactic performance and the student's self-evaluation of their own didactic performance in psychology classes. (2) To test a predictive model to explain the students' self-assessment of their didactic performance as an effect of teachers' self-assessed performance criteria, level of teaching, and years of experience.

2 Materials and methods

2.1 Type and design of research

A basic research study was conducted with a non-experimental design with cross-sectional measurement using previously validated self-reports. This corresponds to the simple correlational predictive and cross-sectional predictive designs (Ato et al., 2013). The simple correlational design will allow determining the association between the variables of the teacher's didactic performance criteria and the student's didactic performance criteria. The cross-sectional predictive design will allow determining the functional relationship by predicting the student's didactic performance criterion variable based on predictor variables (teaching performance criteria and teaching experience).

2.2 Population and sample

The study population includes 83 teachers and 818 students from the psychology faculty of a public university in the city of Lima

and corresponds to the first academic semester of the year 2023 (May–September). The sample consisted of teachers and students. There were 49 regular teachers from the School of Psychology, 20 with a master's degree and 29 with a doctoral degree; the age of the teachers ranged from 37 to 74 years (mean age = 59.92, SD = 8.86) and 25 teachers were women. Of the students, 541 participated, being 400 females and 141 males; belonging to the following levels of study: basic (361), intermediate (127), and advanced (53).

The type of sampling in this study was non-probability purposive. It is non-probabilistic because not all participants have the possibility of being part of the sample, and it is purposive because only those subjects were selected in which the teacher accepted that his or her classroom would be part of the research. Likewise, the criteria for the selection of the sample were: one subject per teacher, and the minimum number of students was 10, who had more than 85% attendance at the end of the academic cycle.

2.3 Instruments for data collection

Sociodemographic sheet. Collects necessary information on students: age, sex, level of studies (basic, cycles I and III, intermediate (V cycle); and advanced (IX and XI cycles). Teacher: sex, age, years of experience, academic degree, subject, and section.

To collect teachers' self-assessment of their teaching performance, we used the Self-assessment Questionnaire of Teacher's Didactic Performance, constructed and validated with university teachers of psychology and educational sciences in Mexico and Peru by Bazán-Ramírez et al. (2025). This scale was designed for the self-evaluation of teaching performance in seven categories or performance criteria, consisting of 28 statements (items), on a response scale: 0 = Never, 1 = Almost Never, 2 = Almost Always, and 3 = Always. The seven didactic performance criteria for teacher self-evaluation are: (1) Didactic planning, (2) Exploration of competencies, (3) Explanation of criteria (Explaining achievement criteria), (4) Illustration, (5) Supervision of practices, (6) Feedback, (7) Evaluation. Appendix A shows the scale for self-evaluation of the teacher's didactic performance; is presented in English and Spanish.

To evaluate the didactic performance of students according to the student body, we used the Student Didactic Performance Self-Assessment Scale validated with Peruvian students of biological sciences by Bazán-Ramírez et al. (2023). This scale evaluates students' self-evaluation of their own didactic performance, and has good convergent and divergent construct validity, as well as good factorial invariance indices considering the sex and level of studies of the respondents. It is composed of 24 items, four for each of six dimensions of teacher didactic performance: Precurrent for learning, Identification of criteria, Illustration—Participation, Relevant Practice, Feedback—Improvement, Evaluation—Application. Responses are evaluated on a Likert-type scale: 0 = Never, 1 = Almost Never, 2 = Almost Always, and 3 = Always. Appendix B shows the scale of evaluation of teaching performance according to the student body.

TABLE 1 Fit estimates of confirmatory models of teacher performance and students' performance.

Model	χ^2	gl	<i>p</i>	CFI	TLI	RMSEA	SRMR
Teacher self-evaluation (factors seven)	383.124	329	0.021	0.967	0.962	0.059 (0.02, 0.08)	0.07
Student assessment (factors six)	885.893	237	<0.001	0.977	0.973	0.071 (0.06, 0.76)	0.038

TABLE 2 Factor loadings of the self-assessment model of teacher performance.

Factor	Items	Estimated	SE	IC 95%		Load	<i>z</i>	<i>p</i>
				Inferior	Superior			
Didactic planning	i1	1.000	0.000	1.000	1.000	0.817		
	i2	1.182	0.154	0.881	1.483	0.966	7.700	<0.001
	i3	1.042	0.146	0.757	1.328	0.852	7.150	<0.001
	i4	1.099	0.137	0.831	1.368	0.898	8.030	<0.001
Competence exploration	i5	1.000	0.000	1.000	1.000	0.856		
	i6	1.076	0.082	0.916	1.236	0.922	13.160	<0.001
	i7	1.072	0.070	0.936	1.208	0.918	15.430	<0.001
	i8	0.805	0.129	0.552	1.057	0.689	6.240	<0.001
Explanation of criteria	i9	1.000	0.000	1.000	1.000	0.935		
	i10	1.043	0.046	0.953	1.132	0.975	22.860	<0.001
	i11	0.872	0.089	0.698	1.046	0.816	9.830	<0.001
	i12	0.865	0.065	0.738	0.992	0.809	13.380	<0.001
Illustration	i13	1.000	0.000	1.000	1.000	0.834		
	i14	1.038	0.131	0.781	1.295	0.866	7.920	<0.001
	i15	1.049	0.123	0.807	1.290	0.875	8.500	<0.001
	i16	0.971	0.134	0.708	1.235	0.810	7.240	<0.001
Practices supervision	i17	1.000	0.000	1.000	1.000	0.848		
	i18	1.146	0.183	0.787	1.505	0.972	6.260	<0.001
	i19	0.912	0.186	0.548	1.276	0.774	4.920	<0.001
	i20	0.934	0.157	0.626	1.241	0.792	5.950	<0.001
Feedback	i21	1.000	0.000	1.000	1.000	0.644		
	i22	1.559	0.296	0.978	2.140	0.964	5.260	<0.001
	i23	1.387	0.286	0.826	1.948	0.893	4.840	<0.001
	i24	1.529	0.338	0.867	2.191	0.985	4.530	<0.001
Evaluation	i25	1.000	0.000	1.000	1.000	0.489		
	i26	1.457	0.397	0.680	2.234	0.712	3.670	<0.001
	i27	2.000	0.568	0.888	3.113	0.978	3.520	<0.001
	i28	1.562	0.439	0.701	2.423	0.764	3.550	<0.001

SE, standard error; *p*, significance.

2.4 Validity and reliability analysis of didactic performance questionnaires

As part of the analyses, evidence of validity of the two questionnaires was obtained from two confirmatory factor analysis models. This process was carried out using the robust WLSMV estimator of the R package in the RStudio environment. The results allowed us to verify the adequacy of the fit measures of

both confirmatory models in terms of representation by structural equation modeling (SEM) as can be seen in Table 1.

Based on the evidence shown in Table 1, the factor loadings of the model for the evaluation of the didactic performance of the self-evaluated teacher were estimated, which are shown in Table 2. These measures were >0.49, so it is considered that each of the loadings contributed a large range of variance for each of the factors that were represented by the items, reaching values close to unity.

TABLE 3 Factorial loadings of the student' didactic performance measurement model as rated by the student.

Factor	Items	Estimated	SE	IC 95%		Load	z	p
				Inferior	Superior			
Precurrent for learning	e1	1.000	0.000	1.000	1.000	0.830		
	e2	1.104	0.028	1.049	1.158	0.916	39.700	<0.001
	e3	1.134	0.027	1.082	1.186	0.941	42.400	<0.001
	e4	1.043	0.032	0.980	1.106	0.865	32.500	<0.001
Identification of criteria	e5	1.000	0.000	1.000	1.000	0.791		
	e6	1.073	0.034	1.007	1.139	0.849	32.000	<0.001
	e7	1.113	0.031	1.051	1.174	0.880	35.500	<0.001
	e8	1.145	0.030	1.086	1.203	0.906	38.400	<0.001
Illustration-participation	e9	1.000	0.000	1.000	1.000	0.888		
	e10	0.992	0.020	0.953	1.030	0.881	50.000	<0.001
	e11	1.028	0.018	0.994	1.063	0.914	57.900	<0.001
	e12	0.992	0.021	0.951	1.034	0.882	47.000	<0.001
Relevant practice	e13	1.000	0.000	1.000	1.000	0.888		
	e14	1.010	0.018	0.974	1.046	0.897	55.300	<0.001
	e15	1.024	0.019	0.987	1.060	0.909	54.600	<0.001
	e16	0.956	0.019	0.918	0.994	0.849	49.300	<0.001
Feedback-improvement	e17	1.000	0.000	1.000	1.000	0.886		
	e18	1.008	0.018	0.972	1.043	0.893	55.800	<0.001
	e19	1.021	0.017	0.988	1.055	0.905	60.000	<0.001
	e20	1.003	0.018	0.967	1.039	0.889	54.400	<0.001
Evaluation-application	e21	1.000	0.000	1.000	1.000	0.892		
	e22	1.016	0.012	0.992	1.040	0.907	81.900	<0.001
	e23	0.966	0.016	0.934	0.998	0.862	59.200	<0.001
	e24	0.953	0.018	0.917	0.988	0.850	52.600	<0.001

SE, standard error; p, significance.

In the same way, we proceeded with the scale of self-evaluation of student performance evaluated by the student body. The analysis represented in Table 3 showed the great contribution of the factor loadings in each of the items that constituted the 6 factors. These loadings were higher than 0.79, reaching values of up to 0.94, which reflects the relevance of each item within the measure for each factor of the scale.

Thus, the analyses provided evidence of the validity of the measurement of both instruments prior to the development of the study through confirmatory factor analysis. In turn, the covariance between the factors of both measurement models continued to support the evidence of validity, adding this time to that of concurrent validity by demonstrating the relationships obtained between the factors of each of the scales. This is represented in Table 4, which shows moderate to high covariances.

Based on the confirmatory factor analyses, internal consistency reliability measures were obtained through the ordinal alpha and McDonald's omega coefficients. To these were added those derived from the consistency obtained through the weighted mean line (AVE), for which values above 0.50 were expected. Reliability

estimates were high for both coefficients as shown in Table 5. This supported the accuracy of the factor measures in each of the instruments.

2.5 Procedure

The study was carried out from April to November 2023. It has been coordinated with the authorities of the Faculty of Psychology in order to obtain updated data on teachers and students enrolled in the 2023-I academic period. Likewise, a web domain linked to the research project was acquired, and the research data, the informed consent documents, the two self-report scales and a short questionnaire with socio-demographic data that have been designed by the research team, in agreement with the authorities of the Faculty of Psychology, were uploaded (see Appendix C).

The two self-report instruments have been adapted in Google Forms with application to teachers and students. The layout in Google Forms and the application to the participants has been

TABLE 4 Covariance between factors of teaching performance according to the teacher and the student body.

Model	Factor	D1	D2	D3	D4	D5	D6	D7
Teachers	D1	0.669	-	-	-	-	-	-
	D2	0.548	0.734	-	-	-	-	-
	D3	0.703	0.707	0.877	-	-	-	-
	D4	0.358	0.413	0.482	0.697	-	-	-
	D5	0.509	0.261	0.471	0.286	0.728	-	-
	D6	0.294	0.188	0.400	0.439	0.305	0.377	-
	D7	0.261	0.227	0.199	0.254	0.259	0.146	0.244
	Factor	E1	E2	E3	E4	E5	E6	
Students	E1	0.688	-	-	-	-	-	
	E2	0.511	0.626	-	-	-	-	
	E3	0.568	0.645	0.789	-	-	-	
	E4	0.527	0.592	0.681	0.789	-	-	
	E5	0.527	0.608	0.690	0.709	0.786	-	
	E6	0.619	0.621	0.717	0.661	0.723	0.796	

TABLE 5 Internal consistency estimates of the two scales of teacher didactic performance.

Model	Factors	Reliability coefficients				
		Ordinal α	ω_1	ω_2	ω_3	AVE
Teachers	D1	0.921	0.850	0.850	0.880	0.784
	D2	0.897	0.865	0.865	0.884	0.725
	D3	0.926	0.896	0.896	0.910	0.787
	D4	0.890	0.820	0.820	0.866	0.717
	D5	0.897	0.818	0.818	0.829	0.723
	D6	0.898	0.879	0.879	0.963	0.798
	D7	0.837	0.738	0.738	0.712	0.572
Students	E1	0.934	0.893	0.893	0.899	0.790
	E2	0.906	0.846	0.846	0.868	0.736
	E3	0.928	0.878	0.878	0.901	0.794
	E4	0.933	0.882	0.882	0.887	0.785
	E5	0.939	0.881	0.881	0.884	0.798
	E6	0.929	0.869	0.869	0.872	0.771

carried out with special attention to the ethical considerations of the research; that is why the informed consent has been uploaded online and images of the covers of the questionnaires can be seen (see [Appendix C](#)).

During the months of July and August, coordination was carried out to obtain the sample of participants according to the established criteria. During this period, with the pre-selected teachers and prior informative meetings, pilot applications were made in order to adjust the research design, the evaluation instruments and the process of online application of these instruments.

In September, 1 week before the beginning of the final evaluations, the official conclusion of the 2023-I cycle, some visits were made in person to the classrooms and also by mail, to inform the students about the research and its importance for the faculty, the purposes, characteristics and ethical considerations of the research; if they accepted to participate in the study, they continued with the resolution of the self-reports, after reading the informed consent. The institutional e-mail addresses of all students and teachers were used to send invitations and links to answer the scales online. Up to three simultaneous meetings were held in the two shifts that the faculty has in its academic formation. A pre-participation list was prepared in order to send reminders to students.

Students had 1 week from the conclusion of the 2023-I cycle to complete the online instruments. The researchers monitor the process of filling out the online instruments. In the following week and in case the students who expressed their willingness to participate in the study did not complete the self-report scales, the researchers were in contact with the students to have them complete the instruments. The same was done until a third attempt and in case the student had not responded or completed the resolution of the instruments, he/she was excluded from the sample of participants.

The data analyses were developed according to the objectives set. Initially, we proceeded to the robust analysis of the validity and reliability measures of the instruments used for the research using confirmatory factor analysis with the WLSMV estimator of the free software R version 4.3.1 and the RStudio package version 2023.06.2.

The relationships between teachers' self-evaluations of their own teaching performance and students' self-evaluations of their own teaching performance were established using Pearson's correlation coefficient. Likewise, the analyses were accompanied by descriptive statistics to characterize the self-report of teaching performance, adding to the analyses the generation of generalized linear models (GLM) through the use of multilevel linear regression models to respond to the final objective of the research. All the latter analyses were performed with the SPSS package version 27 for Windows.

3 Results

3.1 Descriptive analysis of teachers' didactic performance

3.1.1 Teacher's self-evaluation of their teaching performance

Regarding the description of the teachers' self-assessment of the teaching performance criteria, the performances with the highest average were, Supervision of practices (10.69), Illustration (10.45), and Feedback (10.35), while the least self-assessed competencies were, Competence exploration (8.49) and Evaluation (10.12). Likewise, the measures of dispersion of the data evidenced greater fluctuations in the mean scores of these didactic performances of the teachers as can be seen in [Table 6](#).

TABLE 6 Descriptive self-report measures of teacher performance criteria.

	<i>M</i>	<i>SD</i>	<i>Me</i>	<i>Var</i>	<i>Min</i>	<i>Max</i>
Didactic planning	10.24	1.66	11	2.77	7	12
Competence exploration	8.49	2.87	8	8.26	0	12
Explanation of criteria	10.20	2.28	11	5.21	4	12
Illustration	10.45	1.71	11	2.92	6	12
Practice supervision	10.69	1.69	11	2.84	4	12
Feedback	10.35	1.61	11	2.61	6	12
Assessment	10.12	1.76	11	3.11	6	12

M, mean; *SD*, standard deviation; *Me*, median; *Var*, variance. Performance criteria with the highest scores are shown in bold.

3.1.2 Student’s assessment of their didactic performance

Regarding the self-assessment measures of student didactic performance, it can be seen in Table 7 that the highest averages were obtained by Improvement (9.68), followed by Identification of criteria (9.58) and Participation (9.59). In contrast, the lowest average score was obtained by Precurrent for learning (8.51).

3.2 Relationships between teacher self-evaluation and student self-evaluation

In response to the general objective of the study, functional relationships were detected between the didactic performance criteria of the teacher self-evaluated by the teachers themselves and the didactic performance criteria of the students self-evaluated by the students. These relationships were characterized in most cases as statistically significant; see Table 8.

3.3 Multilevel predictive model of the author’s report on teacher performance

We sought to establish a model that could explain the students’ evaluation of their own teaching performance. This model was examined with the generalized linear modeling (GLM) technique, derived from linear regression models, in the presence of covariates and factors. The model fit was able to explain up to 28.2% of the student didactic performance assessment for teacher-derived predictors such as teacher level, teacher assessment of didactic planning, evaluation, experience and competency assessment with fixed (direct) effects, as shown in Table 9.

Regarding the adjustment tests of the sources of variance represented by means of the ANOVA Omnibus Test (Table 9), significant measures were obtained through the process of sums of squares type III. This allowed verifying the goodness of fit of the model to predict, in each item, the students’ valuation by means of each of the exogenous variables in modeling; that is, if the variables were sufficiently explanatory of the joint variability products grouped in the 28.2% of variance explained by the model. Since the components were significant in the results, they were

TABLE 7 Descriptive measures of student performance self-assessment.

Factor	<i>M</i>	<i>SD</i>	<i>Me</i>	<i>Var</i>	<i>Min</i>	<i>Max</i>
Precurrent for learning	8.51	2.64	8	6.97	0	12
Identification of criteria	9.58	2.10	10	4.42	0	12
Participation	9.59	2.21	10	4.88	0	12
Relevant practice	9.50	2.38	10	5.64	0	12
Enhancement	9.68	2.24	10	5.03	0	12
Application	9.46	2.27	9	5.13	0	12

M, mean; *SD*, standard deviation; *Me*, median; *Var*, variance. Performance criteria with the highest scores are shown in bold.

included in the process, taking into consideration the teaching didactic planning, competency exploration and evaluation.

Additionally, it was possible to observe in greater detail the different levels of teaching experience that were able to add to the sources of explanatory variance of the regression model, from which it was known how the academic contribution explained by different years of teaching experience made the difference at different moments of the modeling in *post-hoc* contrasts.

In this sense, this model took as the most relevant factors for the students the teacher’s variables such as didactic planning, competency evaluation and teacher evaluation, in addition to their level and experience.

4 Discussion

4.1 Key findings

According to the results obtained, the psychology teachers self-assessed in greater proportion between criteria of didactic performance deployed in their classes, the supervising of practices, illustration, and Feedback. The first criterion of teacher performance involves demonstration and cognitive activation, and corresponds with teaching. The supervision and feedback performances correspond to the formative evaluation of student progress against objectives and achievement of criteria. However, the results of the self-evaluation of Mexican and Peruvian psychology and education teachers with these same seven categories of teacher didactic performance (Bazán-Ramírez et al., 2025), evidenced as the three performances with the highest teacher self-evaluation: Explanation of criteria (Make achievement criteria explicit), Instructional planning, and Practice supervision.

According to the teachers’ own perception, the teaching competencies of organization of educational materials and resources, teacher training and teaching action, are preponderant for teaching (Grácio et al., 2023), which supports our findings. Coincidentally, Sergienko et al. (2021) by means of observational systems of classes of university teachers of a military academy in Russia, found that from the point of view of teachers regarding the use of pedagogical diagnosis, there is greater emphasis on the evaluation of knowledge and skills, and a lower proportion of evaluation of the level of competence developed; and that, in the final evaluation, there is a slight inclination to evaluate more

TABLE 8 Matrix of correlations between didactic performances assessed by different observers.

Teacher self-assessment	Assessment of student' performance					
	Precurr. for learning	Identification of criteria	Illustration— participation	Relevant practice	Feedback— improvement	Evaluation- application
Didactic planning	0.15*	0.10*	0.10*	0.14*	0.10*	0.14*
Competence exploration	0.08	0.09	0.04	0.10*	0.08	0.07
Explanation of criteria	0.08	0.10*	0.08	0.15*	0.12*	0.08
Illustration	−0.15*	−0.11*	−0.09*	−0.14*	−0.12*	−0.13*
Supervision of practices	0.10*	0.08	0.04	0.13*	0.07	0.08
Feedback	−0.09*	−0.08*	−0.04	−0.11*	−0.10*	−0.07
Evaluation	−0.15*	−0.21*	−0.21*	−0.20*	−0.24*	−0.20*

R, Pearson's R.
* $p < 0.05$. Performance criteria with the highest scores are shown in bold.

the level of competencies achieved. This last study highlights the importance of assessment in the teaching and learning process.

On the other hand, our findings are consistent with findings reported on teacher performances in the university context through student evaluation of their teachers' teaching performance, using self-report scales (Bazán-Ramírez et al., 2022, 2023; Henriquez et al., 2023).

For example, Mexican high school students in science perceived among the three didactic performances of the teacher with the greatest presence: supervision of practices and illustration (Bazán-Ramírez et al., 2022). Similarly, according to the perception of Peruvian undergraduate students of biological sciences, the teacher's didactic performances with the highest occurrence are Illustration, and Feedback (Bazán-Ramírez et al., 2023). In both studies, illustration appears as a didactic performance of the teacher of great relevance. It is worth noting that the supervision of practices or judgments in class and feedback are important components of the formative evaluation that accompanies student learning, so our results are consistent with those reported by Bazán-Ramírez et al. (2022, 2023). Likewise, Henriquez et al. (2023) reported a higher preponderance of teaching performances of course organization and teaching quality, followed by assessment and learning feedback performances, as perceived by Mexican social science students, among them psychology majors.

Despite the importance of writing about teachers' didactic performances, either with their own self-evaluations or from the perception of their students, the relevance of classroom studies in the context of university education, regardless of the method of approach, should be to explain how the teacher's didactic performance criteria are associated with the student's didactic performance criteria. In this sense, our study allows us to verify, as an achievement of the first objective, that there are significant differentiated correlations (positive and negative) between the self-assessment of the teacher's didactic performance criteria and the self-assessment of the student's didactic performance criteria.

Considering the three didactic performance criteria most valued by the teachers themselves; supervision of practices, illustration, and feedback on student progress, these had differential relationships with the student didactic performance criteria. The didactic performance Illustration self-assessed by the teacher

had significant and negative relationships with all the didactic performance criteria self-assessed by the student body. Likewise, teacher self-rated Feedback was negatively and significantly associated with four student self-rated didactic performance criteria. These results show the divergence between teacher-student ratings of didactic performance. While teachers perceive that they provide more explanation and cognitive activation (Illustration) and more feedback to their students in psychology classes, their students perceive a lower presence of their didactic performances related to those of the teacher.

For example, higher ratings of teacher performances in illustration and feedback are associated with lower student self-rated didactic performance in Illustration—Engagement and Feedback—Enhancement. On the other hand, the positive association of the teacher's didactic performance in supervision of internships with two didactic performances of the student, speaks of a partial association between the teacher's didactic performance and the student's performance, specifically, the results show that a higher teacher's performance in supervision of internships will have a higher didactic performance of the student in Relevant Practice.

These results with Peruvian undergraduate students in psychology using scales of teacher and student self-assessment of their didactic performance in Illustration and feedback, is similar to the results obtained when analyzing didactic interactions in high school in the area of science with Mexican students (Bazán-Ramírez et al., 2022), in which it was found with observational records, that the pair of performance criteria Illustration (teacher performance) and Adjustment to the linguistic mode and illustration (student performance), as well as the pair of didactic performances Feedback (teacher performance) and Participation and Student adjustment to feedback (student performance). Likewise, these results coincide with the findings of (Bazán-Ramírez et al., 2023) who found that the best associated criteria of teacher and student performance, perceived by Peruvian undergraduate students of biological sciences, are feedback—feedback improvement; supervised practice—relevant practice; and Illustration and—Illustration participation.

These coincidences highlight the importance for didactic interactions of analyzing teacher and student performances with performance categories pertinently derived from some substantive

Planning is positively associated with all the students' didactic performances, while the teacher's didactic performance in Evaluation is negatively associated with all the students' didactic performances.

2. Regarding the second proposed objective, two findings were relevant: (A) The overall assessment of students' self-assessed teaching performance is significantly explained by the teacher's self-assessed teaching performance in Teaching Planning, Competency Exploration and Evaluation. (B) The teacher's experience (number of years teaching that subject or others related to the subject in which this research was conducted) is the variable that best predicts the didactic performance of the students' self-assessed didactic performance. That is, the teacher's years of experience has a positive and significant influence on the didactic performance of students in psychology classes.

Regarding the limitations of the study, an important aspect to point out is the size of the sample of teachers. Due to the fact that studies on teacher performance evaluation could be confused with administrative measurements or to demonstrate some didactic deficiencies that could affect the job stability of university teachers, this type of research still has little support from both the faculty and the institutions themselves.

Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Ethics statement

Ethical review and approval was not required for the study on human participants in accordance with the local legislation and institutional requirements. Written informed consent from the participants was not required to participate in this study in accordance with the national legislation and the institutional requirements.

Author contributions

AB-R: Conceptualization, Data curation, Formal analysis, Funding acquisition, Investigation, Methodology, Validation, Writing – original draft, Writing – review & editing. CH-M:

Formal analysis, Investigation, Project administration, Resources, Supervision, Visualization, Writing – review & editing. GBP-C: Investigation, Writing – review & editing. WC-L: Conceptualization, Formal analysis, Methodology, Validation, Writing – review & editing, Data curation, Writing – original draft. LM-F: Conceptualization, Investigation, Visualization, Writing – review & editing. AB-J: Conceptualization, Data curation, Investigation, Methodology, Resources, Writing – review & editing. FQ-A: Formal analysis, Investigation, Resources, Visualization, Writing – review & editing.

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Supplementary material

The Supplementary Material for this article can be found online at: <https://www.frontiersin.org/articles/10.3389/feduc.2025.1463493/full#supplementary-material>

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