ADAPTATION AND VALIDATION EVIDENCE OF THE QUESTIONNAIRE OF SATISFACTION WITH THE REMOTE ACADEMIC EXPERIENCE (QSEA-R)

ADAPTAÇÃO E EVIDÊNCIAS DE VALIDAÇÃO DO QUESTIONÁRIO DE SATISFAÇÃO COM A EXPERIÊNCIA ACADÊMICA REMOTA (QSEA-R)

ADAPTACIÓN Y VALIDACIÓN DE EVIDENCIAS DEL CUESTIONARIO DE SATISFACCIÓN DE LA EXPERIENCIA ACADÉMICA REMOTA (QSEA-R)

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ABSTRACT: This study investigated the evidence of validity of the adaptation to the pandemic reality of the Academic Experience Satisfaction Questionnaire (QSEA-R). A total of 365 students enrolled in the Emergency Remote Teaching (ERE) of higher education courses at Instituto Federal de Alagoas participated in the quantitative approach study. The results confirmed the metric qualities in terms of validity of the internal structure and reliability of the questionnaire. The COVID-19 pandemic intensified inequalities and aggravated the condition of social vulnerability of students who, despite reporting an unsatisfactory digital infrastructure for remote study, evaluated the adoption of the ERE as positive, believed in the integration of experiences lived in the pandemic context and expressed positive prospects for employability and professional success. It was concluded that the QSEA-R represents an important instrument for predicting academic (dis)satisfaction, thus contributing to the evaluation of institutional efficacy.

KEYWORDS: Higher education. Academic satisfaction. Emergency remote teaching. COVID-19. Academic success.

RESUMO: *O presente estudo investigou a evidência de validade da adaptação à realidade pandêmica do Questionário de Satisfação com a Experiência Acadêmica (QSEA-R). Participaram do estudo de abordagem quantitativa 365 estudantes matriculados no ensino remoto emergencial (ERE) dos cursos superiores do Instituto Federal de Alagoas. Os resultados confirmaram as qualidades métricas em termos de validade da estrutura interna e de fidedignidade do questionário. A pandemia da COVID-19 intensificou desigualdades e agravou a condição de vulnerabilidade social dos estudantes, que, apesar de relatarem*

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ausência de uma infraestrutura digital satisfatória para o estudo remoto, avaliaram como satisfatória a implantação do ERE, acreditavam na integração das experiências vivenciadas no contexto pandêmico e expressaram perspectivas positivas de empregabilidade e êxito profissional. Concluiu-se que o QSEA-R representa um importante instrumento preditor da (in)satisfação acadêmica, contribuindo, desta forma, na avaliação da eficácia institucional.

PALAVRAS-CHAVE: *Ensino superior. Satisfação acadêmica. Ensino remoto emergencial. COVID-19. Sucesso acadêmico.*

RESUMEN: *El estudio investigó las evidencias de validez de la adaptación a la realidad pandémica del Cuestionario de Satisfacción de la Experiencia Académica (QSEA-R). 365 estudiantes matriculados en el Enseñanza remota de emergencia (ERE) de cursos de educación superior en el Instituto Federal de Alagoas participaron en el estudio de enfoque cuantitativo. Los resultados confirmaron las cualidades métricas en términos de validez de la estructura interna y confiabilidad del cuestionario. La pandemia del COVID-19 intensificó las desigualdades y agravó la condición de vulnerabilidad social de los estudiantes quienes, a pesar de reportar una infraestructura digital insatisfactoria, evaluaron como positiva la adopción de la ERE, creyeron en la integración de experiencias vividas en el contexto de la pandemia y expresaron perspectivas positivas de empleabilidad y éxito profesional. Se concluyó que el QSEA-R representa un importante instrumento para predecir la (in)satisfacción académica, contribuyendo así a la evaluación de la eficacia institucional.*

PALABRAS CLAVE: *Educación superior. Satisfacción académica. Enseñanza remota de emergencia. COVID-19. Éxito académico.*

Introduction

In Brazil and worldwide, several studies related to Educational Psychology have pointed their gaze on the investigation of students' satisfaction with the academic experience in Higher Education (HE), in order to identify the factors that may trigger academic failure and dropout propensity (AMBIEL; BARROS, 2018; CAMPIRA; BULAQUE; ALMEIDA, 2021; OSTI *et al.*, 2020a; OSTI *et al.*, 2020b; OSTI; ALMEIDA, 2019; SUEHIRO; ANDRADE, 2018). Considered a multidimensional construct, academic satisfaction is impacted by several areas of the educational experience, such as the quality of teaching, the curriculum, the relationship with teachers and peers, and the facilities and resources offered by the university (OSTI *et al.*, 2020b; SUEHIRO; ANDRADE, 2018). Under these conditions, its investigation presents itself as a key element in the evaluation of institutional effectiveness and the educational contexts involved in the academic adaptation process of HE students.

Traditionally, students who enter the HE are expected to quickly adapt to the new social and academic context they experience, a fact that does not always occur without conflicts and

difficulties (ARAÚJO, 2015; BRITO; CAMPOS, 2019; CASANOVA; BERNARDO; ALMEIDA, 2021; FARIA; ALMEIDA, 2020; NHACHENGO; ALMEIDA, 2020; PEREIRA-NETO; FARIA; ALMEIDA, 2021). In the course of this process, it is up to students to understand the norms and values of the university or institute they attend, develop the ability to deal, often, with the affective separation from family and/or friends from adolescence, acquire greater autonomy in daily decisions and decisions related to their career, manage new interpersonal relationships with colleagues and teachers, and assimilate the new methods of teaching and assessment (ALMEIDA, 2007; BACAN; MARTINS; SANTOS, 2020; CASANOVA; BERNARDO; ALMEIDA, 2021; FARIA; ALMEIDA, 2021; PEREIRA-NETO; ALMEIDA, 2021; PEREIRA-NETO; FARIA; ALMEIDA, 2021, n. d.).

In the search to minimize the difficulties and conflicts of students and promote a successful academic adaptation, HE institutions, over the years, have understood the need to identify the factors - social, personal, interpersonal, emotional and institutional development - that may influence the adaptation process, the satisfaction and, consequently, the permanence or abandonment in the university. This is because when - for the students - policies of insertion, inclusion and accommodation are guaranteed - by the educational institutions - according to their needs, concomitantly the structural conditions for a better adaptation, involvement and academic profitability of these students are promoted (CASANOVA; BERNARDO; ALMEIDA, 2021; OSTI *et al.*, 2020b; OSTI *et al.*, 2020a; OSTI; ALMEIDA, 2019).

Nowadays, with the emergence of the COVID-19 pandemic, the traditional difficulties of academic adaptation have been added to the many others resulting from the restrictions caused by social isolation. Face-to-face classes have suddenly been replaced by online classes, with elements similar to those used in Distance Learning (DL), such as the use of digital platforms and virtual learning environments, e-learning materials, videoconferencing, and synchronous and asynchronous meetings. (GUSSO *et al.*, 2020; PAULO; ARAÚJO; OLIVEIRA, 2020).

With the adoption of the Emergency Remote Learning (ERL) model in the HE institutions in Brazil, the students not only had to adapt to the model of distance classes, but also had to overcome new challenges, once: interpersonal relations started to figure digitally; the evaluation process suffered significant changes and the teaching and learning strategies had to adapt to the relations mediated by the Digital Information and Communication Technologies (AMARAL; POLYDORO, 2020; NONATO; CONTRERAS-ESPINOSA, 2022; OLIVEIRA; SILVA; SILVA, 2020; PEREIRA-NETO; FARIA; ALMEIDA, 2021).

As if that were not enough, many of the students had to live with an unsatisfactory digital infrastructure for the monitoring of remote activities, thus laying bare another major social problem: the digital exclusion of much of the Brazilian population (FARIA; PEREIRA-NETO; ALMEIDA, 2021; PEREIRA-NETO; FARIA; ALMEIDA, 2021). Data from the ICT Households 2019, collected in a period before the pandemic, already indicated that the lack of internet access affected one out of every four people in Brazil. The rate of people without internet access in urban areas was 16%, reaching 50% in rural areas (CGI.BR, 2011; DE SOUZA; GUIMARÃES, 2020; MARCON, 2020). Social, cultural and economic inequality, which has always been a historical reality in Brazil, with the pandemic of COVID-19 has been accentuated and shown to be even more unequal, especially when it comes to digital inclusion (KANASHIRO, 2021; MARCON, 2020; SOUZA; MIRANDA, 2021).

By the way, when talking about digital inequality, it is important to report that, in addition to the need for a quality and stable internet connection, several other economic and social characteristics necessary for the proper monitoring of remote activities are added: the type of technology instrument used (computer, cell phone, tablet), emphasizing the fact that many students owned only a smartphone as a research and study instrument; their time of use, often a single device was shared by several family members; the family environment not conducive to the monitoring of activities, often students had to share the physical space (room, table, lighting) with the other family members and their daily activities; knowledge and skill in handling technological interfaces (digital platforms, software, applications), the change from face-to-face teaching to remote teaching was too fast and did not allow the acquisition of previous skills regarding the use of technological tools and virtual learning environments (OSTI; JUNIOR; ALMEIDA, 2021; PEREIRA-NETO; FARIA; ALMEIDA, 2021; SILVA; FILHO; SILVA, 2021).

This set of difficulties, certainly, generated stress, frustration and dissatisfaction among students, arising, thus, fears about the completion of the semester and the continuity of formative studies (FARIA; PEREIRA-NETO; ALMEIDA, 2021; PEREIRA-NETO; FARIA; ALMEIDA, 2021, n.d.). Basically, given the novelty of the pandemic context and the depth of the changes that occurred, surely the students' experiences and feelings have changed, which triggered the need to adapt the research instrument and subsequently verify its validity in order to meet this new educational reality.

The Satisfaction with Academic Experience Questionnaire (QSEA in the Portuguese acronym), originally designed with 40 items (OSTI; ALMEIDA, 2019), needed to be adapted

to the pandemic reality. The QSEA sought to assess the degree of student satisfaction regarding various situations related to the ES experience. The questionnaire was configured as a multidimensional instrument that proposed to assess academic satisfaction in several areas of the educational experience: (a) Institutional (quality of the institution's equipment and services, satisfaction with and use of bibliographic, laboratory, and computer resources); (b) Professional (having projects for the future, investing in one's career, seeking skills, and preparing for a profession); (c) Interpersonal (socializing, social integration, friendship, parties, discussion of issues); (d) Economic resources (bear course costs, ensure daily living costs, have money for academic activities); (e) Learning and Achievement (class participation, complete assignments, comply with timetables, have good school performance); (f) Teaching (quality of teaching and relationship with teachers, adequacy of assessment methods).

In an attempt to adapt to the reality of students who experienced the pandemic of COVID-19 and the social isolation measures adopted, namely, the adoption of the ERL in HE institutions, it was necessary to adjust, replace or subtract some of the items of the original questionnaire, now calling it Questionnaire of Satisfaction with the Remote Academic Experience (QSEA-R), composed of 36 items.

Thus, the main objective of this study was to investigate the validity evidence based on the internal structure of the QSEA-R and its reliability estimates in a sample of Brazilian students of higher education courses offered by the Federal Institute of Education of Alagoas (IFAL-Campus Maceió). The secondary objective of the research was to analyze the evidence of validity based on the relationship with other variables - concurrent criterion type - in order to relate the dimensions of academic satisfaction assessed by the QSEA-R with variables related to the students' responses to the experience with COVID-19 and remote learning, including: the conditions for remote study (in terms of space, equipment and time); the number of hours per week devoted to studying and performing asynchronous activities; the evaluation of participation (attention) during synchronous meetings; the satisfaction with academic performance during the ERL.

As a hypothesis for the main objective of the research, it was expected to find a structure of dimensions for the QSEA-R that was analogous to those proposed by Osti and Almeida, (2019), in order to corroborate with the interpretation of the scores of this instrument in the ERE. As for the secondary objective, it was conjectured that the variables linked to the context of the ERL would be, to some extent, correlated to the dimensions of academic satisfaction in

the QSEA-R (OSTI; JUNIOR; ALMEIDA, 2021; OSTI; ALMEIDA, 2019; SUEHIRO; ANDRADE, 2018).

Methods

Participants

The study, which is part of a quantitative approach, included 365 students enrolled in the year 2021 (referring to the 2020.1 school semester) in the ERE of higher education courses at the Instituto Federal de Alagoas (IFAL/Campus Maceió), distributed in short term technological courses (n = 240, 65.5%) and long-term undergraduate (n = 92, 25.2%) or graduate (n = 33, 9%) courses. Table 1 describes the frequencies of students distributed by course and area.

Table 1 – Distribution of student attendance by courses and areas

Course Level		Frequency	Percentage
Bachelor's Degree	CIVIL ENGINEERING	24	6.6
	INFORMATION SYSTEMS	9	2.5
Undergraduate	BIOLOGICAL SCIENCES	8	2.2
	PHYSICS	15	4.1
	LANGUAGES	26	7.1
	MATHEMATICS	23	6.3
	CHEMISTRY	20	5.5
Technological	FOOD	40	11.0
	INTERIOR DESIGN	72	19.7
	TOURISM MANAGEMENT	68	18.6
	HOTEL MANAGEMENT	60	16.4
Total		365	100.0

Source: Prepared by the authors

The ages of the students ranged from 17 to 65 years (M = 29.97, SD = 10.25), and could be distributed in two age groups: students aged 17 to 23 years (n = 134, 37.2%) and students older than 23 years (n = 226, 62.8%). Most of the students were enrolled in evening courses (69.6%) and were female (61.3%). Most of these apprentices work and study (65.2%), and have a per capita monthly income of 1.5 minimum wages or less (55.1%).

Instruments

This is an adaptation of the Questionnaire of Satisfaction with the Academic Experience (QSEA), originally developed by Osti and Almeida (2019), to the academic reality of students of HE courses of the Federal Institute of Alagoas-Ifal/Campus Maceió. It should be noted that the original questionnaire was part of the list of research instruments of the doctoral study in Education Sciences at the University of Minho, Braga-Portugal (CEP approval opinion no. 4.338.899) that, due to the adoption of the social isolation measures during the duration of the COVID-19 pandemic, namely, the implementation of the ERE, needed to be adapted, changing its name to Questionnaire of Satisfaction with the Remote Academic Experience (QSEA-R). During the adaptation, some items from the original model were changed. For example, the original item read: To support my food expenses and other basic needs. After the adaptation, it read: Bear the expenses for my food and other basic needs during the pandemic of COVID-19. Other items have been replaced, for example, in the original template, the item classroom furniture and equipment, was replaced by the item 'the asynchronous activities planned by teachers' (assignments, quizzes, texts, videos, links etc.). While others were subtracted, since they did not match the reality of remote teaching, for example: the cleanliness and safety on campus or the public transportation network to access the university.

Thus, from the original questionnaire, which contained 40 items, after being adapted, it ended up with 36 items. Using a 5-point Likert-type response pattern, the questionnaire sought to express the degree of dissatisfaction or satisfaction with the remote academic experience: 1 (very unsatisfied), 2 (unsatisfied), 3 (neither unsatisfied nor satisfied), 4 (satisfied), 5 (very satisfied).

Procedures

The implementation of the ERL, during the pandemic of COVID-19, imposed on the doctoral research the need to adapt the data collection instruments. The items were altered, subtracted or replaced, giving rise to the QSEA-R, an electronic questionnaire developed on the Google Docs platform, hosted on the link: https://forms.gle/uTk19XyGFTi3BShP9. After ensuring confidentiality and anonymity in data processing, the students were informed of the study objectives, invited (by e-mail, by google classroom and by the digital teaching platform adopted by IFAL) to turn on the electronic form and answer the QSEA-R.

Seeking to validate the adaptation of the QSEA-R to the reality of the ERE in the higher education courses of IFAL/Campus Maceió, as well as to prove the six dimensions of academic satisfaction, analogous to the dimensions proposed by Osti and Almeida (2019), statistical

analyses were performed using the program IBM/SPSS, version 27.0. Initially, an analysis of the dimensional structure of the scale was performed using exploratory factor analysis, resorting to the principal components method to determine the grouping of items by factors (validity). Subsequently, the homogeneity of the items within each dimension was assessed using Cronbach's alpha to determine the scale's accuracy. Finally, the correlation analysis was performed, using Spearman's rho test to verify the association between the QSEA-R dimensions and the students' answers related to the experience with COVID-19 and remote teaching.

Results

Based on the 36 items of the QSEA-R remote academic experience satisfaction questionnaire, an exploratory factor analysis was performed, using the principal components method, without previously defining the number of factors to be retained. Table 2 presents the results of the factor analysis that, despite identifying six components with eigenvalue equal to or greater than unity, these did not present themselves analogous to the dimensions proposed by Osti and Almeida (2019), there being clear difficulties in identifying a sixth factor. It should be remembered that, with the adaptation of the original questionnaire to the pandemic reality, 4 items were subtracted and 6 items were changed.

Table 2 – Factor analysis of the items with prior definition of six factors

| | Component | | | | | | |
	1	2	3	4	5	6	h2
Item 3	.98						70
Item 23	.91						.72
Item 14	.88						.70
Item 28	.87						.64
Item 4	.78						.53
Item 11	.76						.63
Item 27	.72						.65
Item 19	.66						.52
Item 21	.63						.64
Item 12	.48					.37	.51
Item 13	.45	.43					.62
Item 5	.40	.34					.58
Item 24	.35						.38
Item 8		.91					.69
Item 35		.87					.65
Item 10		.84					.71
Item 2		.70					.58
Item 18		.63					.69
Item 20		.52					.59
Item 29			.95				.85
Item 33			.92				.81
Item 9			.91				.76
Item 16			.79				.72

	1	2	3	4	5	6	h2
Item 6				.70			.60
Item 26				.31			.49
Item 17					.98		.76
Item 31					.94		.74
Item 34					.85		.68
Item 15			.33		.52		.60
Item 1					.47		.50
Item 25						.89	.80
Item 36						.85	.78
Item 30						.79	.79
Item 7						.76	.69
Item 22							.89	.79
Item 32					.31	.40	.42	.57
Own Value	14.41	2.65	2.14	1.86	1.55	1.05	
% explained variance	40.03	7.35	5.95	5.16	4.31	2.91	

Source: Prepared by the authors

Thus, since the previous analysis did not show consistent factorization, we performed an exploratory factor analysis using the principal components method with a previous definition of five factors to be retained. In order to assess the adequacy of the factorization of the items, we obtained a Kaiser-Meyer-Olkin coefficient (KMO) value of .946 and a Bartlett's sphericity value of 8028.614 (gl = 630, p < .001), in both cases favorable to factor analysis.

Table 3 presents the results of the analysis, which allowed us to identify the five components with eigenvalues equal to or greater than unity, proceeding to a promax rotation, seeking to increase the specificity of each dimension and requiring a minimum saturation of .40 in linking the items to the factor.

Table 3 – Factor analysis of the items of the questionnaire on satisfaction with the academic experience

	Components					
	1	2	3	4	5	h2
29- The sufficiency of my economic resources for my daily expenses	.89					.86
33- To have enough money for my course expenses	.86					.81
9- To be able to support my food expenses and other basic needs during the COVID-19 pandemic	.85					.77
16- To have enough financial resources to participate in events (congresses, seminars, courses, etc.)	.76					.71
6- To get money to defray the expenses with equipment and services needed to follow the remote classes	.68					.61
3- The pedagogical competence of my teachers		.82				.73
23- The way teachers motivate students		.79				.77
14- The evaluation methods used by teachers		.77				.73
28- The relationship of teachers with the students in my course		.75				.68
11- The activities planned by teachers on digital platforms (assignments, quizzes, texts, videos, links, etc.)		.67				.65
8- The way I organize myself to study and learn			.80			.74
10- My academic performance on assignments or assessments			.77			.73
35- My level of participation in online classes			.76			.66
2- My daily level of energy and work capacity			.66			.59

18- The quality of my learning		.61				.66
25- The amount of friends I have in my course, even if remotely				.83		.80
36- Having colleagues to talk to about the decisions I have to make				.80		.77
30- The socializing that I can have with colleagues at the university, even if remotely				.78		.79
7- The number of friends I can turn to in difficult moments				.73		.68
32- Having colleagues from different cultures and social groups at the University				.51		.46
17- The job expectations in the area of my degree					.85	.77
31 - The job opportunities when I finish this course					.83	.75
34 - The possibilities of this course fulfilling me professionally					.76	.68
15- The connection of the subjects with the profession that I want to have					.57	.58
1- The connection of my course with the profession(s) I would like to have in the future					.51	.49
Own Value	10.01	2.39	1.95	1.71	1.39	
% explained variance	40.03	9.57	7.80	6.84	5.58	

Source: Prepared by the authors

After the factor analysis, the questionnaire was reduced to 25 items, distributed in five dimensions (Appendix 1). Some items were excluded from the original questionnaire because they presented a saturation lower than .40 in any of the identified factors. In dimension 4, two items were discarded (item 22 and item 26). In dimension 3, two items were discarded (items 13 and 20) because they were saturated in two factors. Finally, dimension 2 presented a high number of items, most likely due to the fact that we opted for factor analysis with retention of five factors, leading us to discard five items that were decontextualized in the current factor structure (items 4, 19, 27, 21, 12, 5, and 24).

Thus, each of the factors/dimensions included five items, the first factor described the students' satisfaction regarding their economic resources and the impacts triggered by COVID-19, involving the sufficiency of resources to fund the course, their own subsistence, and to maintain a digital infrastructure needed to follow the remote activities, thus opting to designate this factor/dimension satisfaction with economic resources. The second factor described the students' satisfaction regarding the remote learning environment, involving the assessment of the quality of remote learning, the relationship with teachers, adequacy of digital assessment methods, planning of remote activities, thus opting to designate this factor/dimension as satisfaction with remote learning.

The third factor described the students' satisfaction regarding learning and academic performance, involving the organization of studies, learning behaviors during remote classes, participation in online classes (synchronous) and commitment to the performance of remote activities (asynchronous), thus opting to designate this factor/dimension as satisfaction with learning and performance.

The fourth factor described the students' satisfaction with interpersonal relationships in the context of remote learning, namely the establishment and maintenance of friendship relationships, now mediated by digital media. In view of the content of its items, it was decided to designate this factor/dimension satisfaction with interpersonal relationships. Finally, the fifth factor described the students' satisfaction regarding professional achievement, projects for the future, investment in their career, and the perspective of future employability, thus opting to designate this factor/dimension job satisfaction.

It should be mentioned that the first factor explains 40% of the variance of the items, the second factor explains 9.6%, the third factor 7.8%, the fourth factor 6.8%, while the fifth factor explains 5.6% of the variance of the items. Taken together, the five factors explain 69.8% of the variance of the 25 retained items.

Table 4 shows the descriptive analysis of the items that integrate the five dimensions of satisfaction with the remote academic experience, describing the minimum and maximum values, the mean and standard deviation, as well as the skewness and kurtosis indexes of the distribution of the results.

Table 4 – Descriptive analysis of the results in the items distributed over the five dimensions (n = 365)

	Item	N	Minimum	Maximum	Average	Standard deviation	Asymmetry	Curtosis
	29	361	1	5	3.06	1.19	-.12	-.73
	33	360	1	5	3.01	1.23	-.05	-.82
Economic Resources	9	364	1	5	3.07	1.22	-.06	-.89
	16	365	1	5	2.65	1.19	.16	-.83
	6	364	1	5	3.10	1.17	-.11	-.78
	3	365	1	5	4.07	.97	-1.04	.89
	23	361	1	5	3.62	1.11	-.72	-.04
Remote Learning	14	362	1	5	3.64	1.02	-.70	.05
	28	360	1	5	3.89	.98	-.76	.17
	11	365	1	5	3.59	1.03	-.58	.00
	8	364	1	5	3.31	1.08	-.46	-.37
	10	364	1	5	3.38	1.10	-.64	-.20
Learning and Performance	35	360	1	5	3.66	1.10	-.62	-.21
	2	365	1	5	3.32	1.01	-.29	-.30
	18	364	1	5	3.52	1.00	-.78	.37
	25	361	1	5	3.42	1.24	-.40	-.79
	36	361	1	5	3.29	1.24	-.36	-.86
Interpersonal Relations	30	362	1	5	3.31	1.21	-.38	-.67
	7	365	1	5	3.22	1.29	-.17	-1.05
	32	357	1	5	3.76	1.16	-.70	-.29
	17	362	1	5	3.45	1.13	-.54	-.36
	31	360	1	5	3.38	1.09	-.45	-.32
Professional	34	358	1	5	3.85	.99	-.89	.71
	15	365	1	5	3.91	1.01	-1.01	.82

| | | 1 | 365 | 1 | 5 | 3.81 | 1.00 | -.81 | .40 |

Source: Prepared by the authors

It is observed that students presented lower averages of satisfaction in the dimension of economic resources, for example in item 6 "Getting money to defray expenses for equipment and services needed to follow the remote classes", indicating that the COVID-19 pandemic and the measures of social isolation had a significant impact on the economic condition of these students, thus intensifying social inequality and social vulnerability among them. In contrast, higher averages of satisfaction are observed in the dimensions of remote teaching, as occurs in item 3, "The pedagogical competence of my teachers," indicating that students evaluate as satisfactory the implementation of the remote teaching model proposed by ES institutions during the COVID-19 pandemic. High averages of satisfaction were also observed in the professional dimension, as observed in item 34, "The possibilities of this course will fulfill me professionally", indicating that students, despite the economic limitations imposed by the pandemic, believed in the integration of the experiences lived in the context of ERL and expressed positive prospects of employability and professional success.

Table 5 shows the Cronbach's alpha coefficients obtained in the five dimensions of satisfaction, as well as the corrected correlations of the items with the totals of the respective dimensions (ritc). At the same time, we indicate the oscillation in Cronbach's alpha of each dimension if any of its items is eliminated (alpha if).

Table 5 – Cronbach's alphas and correlations of the items with the total in the five dimensions of satisfaction

	Alfa	Item	Ritc	Alfa if
		29	.87	.87
		33	.83	.88
Economic Resources	.91	9	.76	.89
		16	.75	.90
		6	.67	.91
		3	.71	.87
		23	.78	.86
Remote Learning	.89	28	.70	.87
		14	.77	.86
		11	.71	.87
		8	.71	.83
		35	.66	.84
Learning and Performance	.87	10	.75	.82
		2	.64	.85
		18	.68	.84
		25	.78	.82
		36	.77	.82
Interpersonal Relations	.87	30	.78	.82
		7	.68	.84
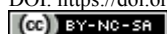
		32	.45	.89
		1	.57	.84
		15	.62	.83
Professional	.85	34	.71	.81
		31	.71	.81
		17	.69	.81

Source: Prepared by the authors

Taking the retained items for each of the five dimensions, despite the discarding of eleven items, the Cronbach's alphas obtained were above .70, qualified as adequate in terms of reliability estimates (DUNN; BAGULEY; BRUNSDEN, 2014). In the economic resources dimension, the alpha value stood at .91, with the correlations of the items with the total ranging between .67 and .87. In the remote learning dimension, the alpha value stood at .89, with the correlations of the items with the total ranging between .71 and .78. In the learning and performance dimension, the alpha value was .87, with the item correlations with the total ranging from .68 to .71. In the interpersonal relations dimension, the alpha value was .87, with item correlations with the total ranging from .45 to .78. And finally, in the professional dimension, the alpha value was .85, with the correlations of the items with the total ranging from .57 to .71.

In order to establish external validity relationships of the QAES-R, correlation analyses were performed using Spearman's rho test to verify the association between the QAES dimensions and the students' responses related to their experience with COVID-19 and the ERL).

Table 6 – Correlations between the dimensions of the QAES-R and the answers related to the experiences in the ERL and COVID-19

	Professional	Interpersonal	Economic Resources	Remote Learning	Learning and Performance
Do you consider that your conditions for remote study (in terms of space, equipment and time) in semester 2020.1 were SATISFACTORY?	-,238**	-,285**	-,356**	-,326**	-,457**
During semester 2020.1, offered in the Remote (online) format, did you consider dropping your course?	,281**	,292**	,229**	,330**	,498**
During the Emergency Remote Learning, on average, how many hours per week did you dedicate to the studies and to the activities planned by the professors on the digital platforms?	-0,02	0,00	-0,01	-0,01	,143**
With the extension of Ifal's offer of Emergency Remote Learning in higher education courses, do you think about continuing your studies in the subjects offered in the 2020.2 semester?	-,184**	-,160**	-0,07	-,162**	-,204**

On a scale of 1 to 10, how would you rate your participation (attention) during synchronous meetings (online)?	,221**	,333**	,200**	,355**	,611**
On a scale of 1 to 5, where 1 = not at all satisfied and 5 = very satisfied, how would you rate your satisfaction with your performance in the course?	,403**	,372**	,337**	,517**	,741**

Key: * $p < .05$, ** $p < .001$

Source: Prepared by the authors

Analyzing the data, we identified that students who had a satisfactory digital infrastructure, in terms of physical space, technological equipment and study time, presented higher levels of satisfaction in the various dimensions identified. These data lead us to conclude that the levels of satisfaction with the remote academic experience by students is related to their socioeconomic status, thereby uncovering a digital inequality among students exacerbated by the COVID-19 pandemic.

We also observed that the highest levels of satisfaction in the five dimensions were presented by students who, even though they experienced the challenge of adapting to the RES model, answered that they did not want to abandon their studies in the academic semester 2020.1 and, consequently, expressed a desire to continue their studies in the academic semester 2020.2. Students who positively evaluated their participation in synchronous meetings (online classes) also presented higher levels of satisfaction in the dimensions studied, a positive correlation also observed in the students' answers when asked about their level of satisfaction with their performance. This data is corroborated when we analyze the students' answers regarding the study hours dedicated to asynchronous activities (activities planned by teachers on digital platforms).

The students who were more satisfied with their learning process and academic performance were those who devoted more time to asynchronous activities, thus revealing that remote academic satisfaction was better understood by students who knew how to self-regulate, reorganize remote studies, and devise strategies to carry out activities on digital platforms.

On the contrary, we did not observe any correlation between the time dedicated to asynchronous studies and professional satisfaction, revealing that the unsatisfactory conditions of monitoring asynchronous activities (physical space, adequate technological equipment and study time) deeply compromised the perspective of these students regarding their future professional fulfillment and perception of employability after completing the course. The personal effort to carry out asynchronous activities was strongly compromised due, in part, to the economic difficulties imposed by the COVID-19 pandemic and, in part, to the limitations of interpersonal interaction caused by the adoption of social isolation measures, thus justifying

the absence of correlation between the time dedicated to asynchronous activities and the dimensions of interpersonal satisfaction and economic resources.

The same lack of correlation was observed between the time devoted to following up on digital activities and the dimension of satisfaction with remote learning. The difficulty in committing to the online activities, planned in the digital platforms, ended up generating interpersonal conflicts between professors and students, as well as compromising their perception of their own academic performance.

Discussion

In this study, we sought to collect data that could contribute to the validation of the QSEA-R, an instrument for assessing institutional effectiveness and student satisfaction with the academic experience in HE. The results confirmed the metric qualities in terms of validity of the internal structure and reliability of the questionnaire, although not analogous to the dimensions originally proposed by (OSTI; ALMEIDA, 2019). The disparity of the results can be explained by the need for adaptation, replacement and subtraction of items from the original questionnaire, due to the changes in academic experiences triggered by the COVID-19 Pandemic, namely, the implementation of the ERE. After the factor analysis, the QSEA-R was reduced to 25 items, distributed by five dimensions: satisfaction with economic resources, satisfaction with remote teaching, satisfaction with learning and performance, satisfaction with interpersonal relations, and job satisfaction.

The results of this research indicated that the students who were most satisfied with the ERL experience were those who had a satisfactory digital infrastructure, leading us to conclude that satisfaction with the remote academic experience was directly related to the socioeconomic status of these students. Corroborating with previous studies, the results pointed out that the COVID-19 pandemic has significantly impacted the financial and economic conditions of Brazilian society, further intensifying the historical social inequality and, particularly, worsening the condition of social vulnerability of a large portion of students (FARIA; PEREIRA-NETO; ALMEIDA, 2021; KANASHIRO, 2021; MARCON, 2020; OSTI; JUNIOR; ALMEIDA, 2021; PEREIRA-NETO; FARIA; ALMEIDA, 2021, n.d.; SOUZA; MIRANDA, 2021).

We also observed as important the result that points out that, despite suffering with the emotional and economic impacts - due to the pandemic - as well as needing to adapt to new interpersonal and learning relationships - imposed by social isolation - the students, in addition

to not expressing a desire to abandon their studies in the academic semester 2020. This fact is corroborated by previous studies, when they state that despite the economic limitations imposed by the pandemic, students evaluate as satisfactory the implementation of the remote teaching model, believe in the integration of experiences lived in the pandemic context, and express positive prospects for employability and professional success (FARIA; PEREIRA-NETO; ALMEIDA, 2021; OSTI; JUNIOR; ALMEIDA, 2021; PEREIRA-NETO; FARIA; ALMEIDA, 2021, 2022).

It is worth noting that, when evaluating their experiences with the remote learning model, students expressed contentment with the synchronous meetings (online classes) and with their own personal performance in the activities performed, leading us to conclude that they have developed appropriate strategies of self-regulation of studies, adapting well to the changes (OSTI; JUNIOR; ALMEIDA, 2021). On the other hand, the absence of a satisfactory digital infrastructure to monitor the activities planned in the digital learning platforms - the asynchronous meetings - compromised the perception of these students as to their personal performance and their future perspectives regarding getting a job and professional performance, pointing to a profound digital inequality among students who, in addition to not having a quality and stable internet connection, added several other social vulnerabilities that overlapped with technological issues, thus compromising the proper monitoring of remote activities (OLIVEIRA; SILVA; SILVA, 2020; SOUZA; MIRANDA, 2021).

Final remarks

Recognizing the sample limitation of this study, a sample expansion is necessary, considering the application of the QSEA-R in other regions of Brazil and including, for such, not only public educational institutions, but also private institutions, in order to add more evidence to support the interpretation of their scores. In this sense, it is also admitted the need to investigate whether the structure of the questionnaire with 25 items, distributed in five dimensions, is corroborated by applying other statistical resources, such as confirmatory factor analysis.

Academic satisfaction, defined as a psychological state resulting from the confirmation, or not, of the student's expectations with the experience in the ES, was presented as a determining factor for a successful academic adaptation. Its absence triggered uncertainties, fears, and stress in the students, significantly impacting their adaptation process, learning levels, and, consequently, their intention to remain or drop out of the university. These conditions

further reinforce the importance of studies investigating satisfaction with the academic experience, especially those experienced during the period of the COVID-19 pandemic and the adoption of the ERL. Since, in addition to serving as a predictor of psychosocial factors that impact the adaptation and permanence of students, they present themselves as a powerful mechanism for evaluating institutional effectiveness.

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