Research Article

Questionnaire Results (QEP) and the socio-economic problems of students in Higher Education in the time COVID-19

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ARTICLE INFO	ABSTRACT
	The gender and economic conditions of students from Higher Education Institutions attending the 1st year, after the COVID-19 pandemic, acquires great importance, especially in terms of study conditions and their emotions. The study, with an international scope and on two continents, aims to use the pandemic questionnaire for students (QEP), with five dimensions under study: conditions for study, emotions, academic performance, teaching strategies and sociability. The QEP was answered by 101 students from a private higher education institution in northern Portugal. The QEP questionnaire is part of a research project that aims to guide specific institutional policies to support students' permanence and completion of courses in Higher Education Institutions, allowing the early identification of intentions to drop out or students at risk. As well as to understand how e-learning teaching influenced teaching, learning and the permanence of students in higher education institutions. **Keywords:** e-Learning; Higher Education, COVID-19, Dropout, QEP, Socio-economic environment.

INTRODUCTION

The socio-economic and political challenges caused by the COVID-19 pandemic in Higher Education students were a factor to consider in their academic path and to which teachers should not be alienated. Among the various economic challenges triggered by the pandemic, according to (Castro et al., 2020), it is possible to highlight: (a) growth in the unemployment rate and reduction in working hours, increasing informal work, reducing the generation of taxes and decreasing purchasing power; (b) retraction in industrial production, with a sharp drop in consumer durables and capital goods; (c) appreciation of the dollar, making the export of goods produced in the country more advantageous than the sale to the domestic market, which contributed to the increase in the prices of food and basic products. As the authors point out, in view of this situation, a series of government measures were taken in an attempt to minimize the economic impacts of the pandemic both for industries and companies (for example, anticipation of individual vacations and granting of collective vacations, monetary aid for micro and small businesses,

measures to facilitate teleworking without the need for an individual or collective agreement, among others), as well as for individuals (such as payment of emergency aid for self-employed and informal workers, payment facilities at Universities, psychological support, among others). However, despite all the governmental measures, there was a reduction in the salary mass, which was smaller than the fall in the number of occupations, since the most affected sectors have an average salary lower than the least affected sectors, which tends to increase inequality (Dweck et al., 2020). Given this scenario, the present study sought to identify the academic and financial concerns triggered by the COVID-19 pandemic in university students. To this end, economic indicators and exposure to COVID-19, changes in academic activities and perception of the main impacts reported students were evaluated.

The dropout in Higher Education Institutions (HEI) and its relationship with public educational policies has deserved the attention of researchers for some decades (Almeida, 2019; Prestes and Fialho, 2018). This phenomenon is complex and manifests itself both internationally and nationally (Almeida, 2002; Casanova et al., 2019), causing damage that affects individuals, families, organizations, and society.

Thus, an international research group was organized from a comparative perspective: Portugal, Brazil, Chile, Uruguay, with the aim of listening to students of various nationalities in Higher Education regarding their learning, their emotions, and their modus vivendi. during the pandemic.

There is no consensus in the international literature regarding the understanding of the term school dropout, especially at the university level. (Tinto, 1975), one of the classics on the subject, defines dropout as the movement of the student leaving the Higher Education Institution (HEI) and never receiving the diploma. Some authors (Almeida et al., 2019; Prestes and Fialho, 2018; Souza et al., 2019) refer to the non-completion of "an educational unit (school, course, training, qualification, specialization, or any other educational modality) that leads the student to specialized knowledge" (Prestes and Fialho, 2018, p. 872).

(Fritsch and Vitelli, 2016) describe school dropout as the loss of students who start their courses, but do not finish their studies, omitting the particularity of obtaining a diploma in that or another course. Thus, school dropout is distinguished as a means of reorienting the training path, from dropout as a definitive abandonment of any higher academic training (Prestes and Fialho, 2018). Abandoning the course may correspond to training reorientation within the same institution, often in similar areas. Or the replacement of one HEI by another. Abandoning the system means giving up and leaving any HEI permanently. (Tinto and Cullen, 1973) highlight types of exits, voluntary and involuntary. In the first case, the cancellation of the course takes place at the request of the student (Almeida, 2015; Scali, 2009). In the second case, dropout occurs due to the intervention of the HEI, for a variety of reasons, among others (Prestes and Fialho, 2018): a) excessive absences; b) non-payment of tuition fees (economic difficulties); c) violent practice. A whole set of personal factors (expectations, self-perceptions, evaluations, goals, study conditions, emotions) and family factors (family environment and perceived parenting style) have an impact on the decision to leave school prematurely (Prego et al., 2019). Could these situations, referenced here, be enhanced by the pandemic?

METHODOLOGY

The Dimensions of the Pandemic Student Questionnaire (QEP)

The QEP questionnaire is a self-report instrument consisting of 39 items with responses on a 5-point Likert scale, from 1 (Disagree) to 5 (Strongly agree). The questionnaire assesses five dimensions of reasons for dropping out, known as academic adaptability: i) Conditions for the study; ii) Emotions; iii) Academic Performance; iv) Teaching strategies; and v) Sociability. It contains 13 questions of a sociodemographic nature and 6 questions of an open nature.

The sociodemographic issues are: i) gender, ii) age, iii) way of life, iv) marital status, v) student typology, vi) mother's education level, vii) father's education level, and viii) economic difficulties. In this study we will only address the relationships between gender, economic difficulties, and academic adaptability.

Application of the PSS pre-test: PSS questions were validated by three recognized experts in this field of academic research. A sample of 32 students attending the 1st year of the master's degree program in Nursery, Pre-School and 1st Cycle of a private Higher Institution in the North of Portugal and 41 students attending the master's degree program of a private university in Brazil answered the survey (PSS). The instruments were applied during class, in the 1st semester of the 2021/2022 academic year, the sum of the two makes up the total (n=73). PSS had 59 questions and took between 12 and 18 minutes to answer.

The QEP, initially with 54 closed questions, was validated as follows, being reduced to 39: It was decided to move towards a factor analysis, eliminating all items that did not reach the required saturation of .50 (Almeida et al., 2019). With the survey reduced to 39 items, we proceeded to a new factorial analysis not so reductive on the survey dimensionality. Thus, we required the criterion of .40, as the minimum value for the saturation of items, fixed five factors according to the original version of the scale, and proceeded to a varimax rotation. Thus, for the homogeneity and sphericity indices of the correlations obtained among items, we obtained a Kaiser-Mayer-Olkim (KMO) coefficient of .861 and a statistically significant Bartlett coefficient of sphericity of 2445.875 (df =496, p < .001), the eigenvalues of the five factors accounting for 46.6% of the variance of items. Item saturations in the five isolated factors, as well as the commonality value (h^2), the eigenvalue of each factor and the percentage of results variance in each item, which is explained by the combination of the isolated factors, as well as all items already left out in the two previous varimax. Finally, it must be said that the analysis was developed with the IBM/SPSS program (Statistics Package for Social Sciences) in version 29.

The questionnaire was sent to (n=101) students in the education area of a Higher Institution in the North of Portugal, out of a total of 119 students in the Education Area, in which (n=84) are girls and (n=17) are boys. The QEP was sent by institutional email to each student, by one of the project researchers and author of this study, after duly clarifying the study, requesting authorization from the institution's management, and guaranteeing the privacy and anonymity of each student.

The questionnaire took, on average, 12 minutes to be answered. It was returned to the researcher by the same means by which they received it.

Empirical verification of the hypothesis

A descriptive analysis of the sociodemographic variables was carried out (gender, age, way of life, marital status, student typology, mother's level of education and father's level of education), the variables of academic adaptation during the pandemic (conditions for the study, emotions, academic performance, teaching strategies and sociability), indicating the minimum and maximum value, the mean, the standard deviation, and the asymmetry of the distribution of results. To verify the hypothesis, correlations between variables were calculated (Marôco, 2010).

Table 1. Difference in academic adaptability according to gender

	Gender	n	Average	S.D.	t	Sig.¹
Conditions for the study	Female	84	71.84	26.98	1.21	.228
	Male	17	68.63	28.17		
Emotions	Female	84	81.22	24.47	1.15	.252
	Male	17	78.40	26.62		
Academic perfomance	Female	84	11.45	1.58	.834	.405
	Male	17	11.31	1.78		
Teaching strategies	Female	84	10.85	3.01	.816	.444
	Male	17	10.62	3.15		
Sociability	Female	84	10.65	2.07	.553	.580
	Male	17	10.54	2.29		

Table 2. Difference in academic adaptability due to economic difficulties

	Gender	n	Average	S.D.	t	Sig.²
Conditions for the study	Female	84	71.84	26.98	1.21	.228
	Male	17	68.63	28.17		
Emotions	Female	84	81.22	24.47	1.15	.252
	Male	17	78.40	26.62		
Academic perfomance	Female	84	11.45	1.58	.834	.405
	Male	17	11.31	1.78		
Teaching strategies	Female	84	10.85	3.01	.816	.444
	Male	17	10.62	3.15		
Sociability	Female	84	10.65	2.07	.553	.580
	Male	17	10.54	2.29		

The hypothesis, which guided the empirical research until the data collection phase, is as follows:

- H1: There is a relationship between the sociodemographic characteristics of students and their academic adaptation during the pandemic.

In this analysis, a set of the students' sample was taken, the sociodemographic characteristics (gender, age, way of life, marital status, student typology, mother's level of education and father's level of education) and, for the adaptation variables during the pandemic (conditions for study, emotions, academic performance, teaching strategies and sociability).

The hypothesis analyzes whether the adaptability of students in higher education is associated with sociodemographic variables of students in the Institution. It is important to say that each student faces the transition process differently, not all students with similar characteristics experience the same difficulties, in the face of the COVID-19 pandemic and not a certain method of teaching and evaluation of a teacher affects everyone in the same way. course students (Ortiz et al., 2020). To verify the relationship between the sociodemographic characteristics of the students and their academic adaptability, an analysis of the difference between the averages between variables (*t*-test) and an analysis of the correlations of the variables of all sociodemographic variables and measures of adaptability of students in higher education (academic adaptability) were carried out.

Table 1 shows the results of the difference in means in the

academic adaptability of students according to gender (n = 101), indicating the number of students in each group, the mean, the standard deviation, the *t*-test and its significance. The homogeneity of variance between the groups was previously analyzed using the *F* Levenes' test, and no statistically significant value was found.

Analyzing **Table 1**, which crosses between the measures of academic adaptability and the variable gender, there is little oscillation in the averages of measures of academic adaptability according to gender.

Emotions have higher means for girls (M = 81.82; SD = 24.47) and boys (M = 78.40; SD = 26.62). However, gender does not have a statistically significant effect on academic adaptability. For example, in academic performance (*t*-test = .834, *p*>.05), it means that student earnings do not differentiate according to gender, that is, being a boy or a girl has no impact on academic performance.

Table 2 presents the results of the difference in the students' academic adaptability as a function of the mother's level of education (n = 101), indicating the mean, standard deviation, t test and significance. Analyzing the homogeneity of variance between the two groups of students, we found statistically significant values of Levenes' *F* test for the following variables of academic adaptability: conditions for the study (F = 215.42, p < .001), emotions (F = 23.99, p < .001), academic performance (F = 290.35, p < .001), teaching strategies (F = 181.94, p < .001), Sociability (F = 180.61, p < .001).

Table 3. Difference in academic adaptability due to difficulties in paying the university

	Difficulties in Paying the University	n	Average	S.D.	t	Sig.²
Conditions for the study	Yes	63	83.12	19.58	14.23	.000
	No	38	79.67	22.79		
Emotions	Yes	63	44.54	22.72	9.86	.000
	No	38	88.28	15.08		
Academic perfomance	Yes	63	56.71	33.11	11.93	.000
	No	38	11.29	1.65		
Teaching strategies	Yes	63	9.89	1.51	8.52	.000
	No	38	11.69	4.47		
Sociability	Yes	63	8.07	1.86	12.20	.000
	No	38	11.25	1.90		

Analyzing the results obtained in **Table 2**, it explains the effect of economic difficulties in relation to the adaptability of students during the COVID-19 pandemic, to understand to what extent these variable impacts on the adaptability of students in the Higher Education Institution. The mean values show a good range of results from measures of academic adaptability and economic hardship. However, there is a statistically significant difference in terms of study conditions and academic adaptability, for example, the ratio of students saying "Yes" (t-test = 19.45, $p < .001$), means that students with better conditions women can experience higher levels of study.

There is a statistically significant difference in relation to emotions and academic adaptability, for example, the ratio of students saying "Yes" (t-test = 10.49, $p < .001$), shows that students with better economic conditions can experience higher levels of heightened emotions.

There is a statistically significant difference in terms of academic performance and academic adaptability, for example, the ratio of students saying "Yes" (t-test = 12.12, $p < .001$), means that students with better economic conditions can experience higher levels of academic performance.

There is a statistically significant difference in terms of teaching strategies and academic adaptability, for example, the ratio of students saying "Yes" (t-test = 11.90, $p < .001$), shows that students with better economic conditions can experience better the usefulness of differentiating teaching strategies.

There is a statistically significant difference in relation to sociability and academic adaptability, for example, the ratio of students saying "Yes" (t-test = 11.49, $p < .001$), shows that students with better economic conditions can experience higher levels of sociability.

Analyzing the results obtained in **Table 3**, considering the difficulties that students had, during the COVID-19 pandemic, in paying the University in relation to understand to what extent these variable impacts on the adaptability of students in the Higher Education Institution. The mean values show a good range of results from measures of academic adaptability and economic hardship. However, there is a statistically significant difference in terms of study conditions and academic adaptability, for example, the ratio of students saying "Yes" (t-test = 19.45, $p < .001$), means that students with better conditions women can experience higher levels of study.

Analyzing the results obtained in **Table 3**, it explains the effect of difficulties in paying the university regarding the relation to the adaptability of students during the COVID-19 pandemic, to understand to what extent these variable impacts on the adaptability of students in the Higher Education Institution. The mean values show a good range of results from measures of academic adaptability and economic hardship. However, there is a statistically significant difference in terms difficulties of conditions for study, for example, the ratio of students saying "Yes" (t-test = 14.23, $p < .001$), means the difficulties in paying the university.

There is a statistically significant difference in relation to emotions and academic adaptability, for example, the ratio of students saying "Yes" (t-test = 9.86, $p < .001$), shows that students with the emotional problems are those who have the most difficulties in paying the university.

There is a statistically significant difference in terms of academic performance and academic adaptability, for example, the ratio of students saying "Yes" (t-test = 11.93, $p < .001$), means that those with less performance are those students and difficulties in paying the university.

There is a statistically significant difference in terms of teaching strategies and academic adaptability, for example, the ratio of students saying "Yes" (t-test = 8.52, $p < .001$), shows that students and difficulties in paying the university better the usefulness of differentiating teaching strategies.

There is a statistically significant difference in relation to sociability and academic adaptability, for example, the ratio of students saying "Yes" (t-test = 11.20, $p < .001$), shows that students with difficulties in paying the university who feel the effect more of the sociability.

FINAL CONSIDERATIONS

In this study, the analysis of the results of the QEP was carried out, seeking to describe the academic adaptation and, consequently, reasons for students to drop out of Higher Education. For this purpose, two sociodemographic and personal variables (gender and economic difficulties) were considered with the adaptability of students in the pandemic,

about: i) Conditions for the study; ii) Emotions; iii) Academic Performance; iv) Teaching strategies; and v) Sociability.

The variables were correlated with each other and with the measures of academic performance of the students, according to the hypothesis.

The set of results of the analysis carried out shows that there is no statistically significant correlation between the sociodemographic variable of the study (gender) and the measures of academic adaptability, but the variable (economic difficulties) presented a statistically significant effect on the measures of adaptability academic.

In addition, the pandemic may have enlarged the existing social inequality in the country (Bernardineli and de Almeida, 2020). Public and private HEIs that adopted emergency remote teaching assumed that their students had access to the internet and equipment (computers, tablets or cell phones) with the capacity to receive classes, interact with colleagues and teachers and satisfactorily carry out the activities requested in the environment. virtual learning.

Internet access was not the only difficulty faced by students in emergency remote teaching. The lack of infrastructure at home to participate in remote learning activities (for example, adequate environment, equipment, cooperation from other residents, etc.) during academic activities (Crawford et al., 2020). There was also an increase in the volume of academic activities, with the implementation of remote teaching, to compensate for possible losses due to the change in the teaching modality (Vieira et al., 2020). In addition, the increase in levels of stress, anxiety, and depression due to the pandemic also impacted academic performance (Yang et al., 2020).

Finally, the result indicates that there is a statistically significant difference in the intention to drop out of the course as a function of several personal, psychological, and institutional variables.

The main limitation of the work is that the sample is small, but the absolute value is a representative sample of the HEI population under study. For future work, it will be analyzed the correlation between other variables and the comparison with the studies the results of the researchers of the five countries that encompass the research project.

Thus, it is highlighted once again that the heirs, identified here by those who had more favorable economic conditions, were able to adapt better to the transition from the face-to-face to the remote modality. It is inferred that the opposite occurred with students from more unfavorable economic conditions. Like other studies (Gomes et al., 2021), it is suggested that the pandemic acted as a sounding board for socio-economic difference.

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