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Higher education: a reading about dropouts and academic failure

Ensino superior: uma leitura acerca da evasão e do insucesso acadêmico

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Abstract

This study aimed at investigating dropout rates and their relationship with variables such as academic success /failure, retention, teachers' evaluation by students and students' motivation in different areas of knowledge at a Federal University located in one of the capitals of the Northeast region of Brazil. The data were retrieved from the institutional evaluation, carried out by the students through the Integrated System for the Management of Academic Activities (SIGAA) and through the Institution's Undergraduate Data Observatory, using univariate and bivariate descriptive and inferential statistics. The outcome of such evaluation indicates the existence of relationships between the approaches of the teaching-learning process of teachers, the students' learning and the students' school dropout. It also indicates the need to implement strategies to curb and prevent school evasion that take into account the multifactorial character of this phenomenon and to seek to foster greater involvement and motivation of students, promoting reflections regarding the role of the teacher in the referred phenomenon.

Keywords: Educação; Higher education; Student dropouts.

Resumo

A presente pesquisa teve como objetivo investigar índices de evasão e a relação destes com variáveis como sucesso/insucesso acadêmico, retenção, avaliação docente pelos discentes e motivação de estudantes em diferentes áreas de conhecimento na Universidade Federal da Paraíba (UFPB). Os dados foram acessados a partir da avaliação institucional, realizada pelos estudantes via Sistema Integrado de Gestão de Atividades Acadêmicas (SIGAA) e através do Observatório de Dados da Graduação da Universidade Federal da Paraíba, analisados por meio de estatísticas descritiva e inferencial uni e bivariada. Os resultados apontam para relações entre abordagens do processo ensino aprendizagem de professores, aprendizagem dos alunos e evasão. Em complemento, indica necessidade de implementação de estratégias de combate e prevenção à evasão que considerem o caráter multifatorial deste fenômeno e busquem favorecer maior envolvimento e motivação dos alunos e promover reflexões a respeito do papel do docente no referido fenômeno.

Palavras-chave: Educação; Ensino superior; Evasão escolar.

According to the *Instituto Nacional de Estudos e Pesquisas Educacionais Anísio Teixeira* (2014; INEP, Anísio Teixeira National Institute of Studies and Educational Research), out of the total number of students entering school in 2010, 49% had dropped out by 2014. In 2018, out of the total of 8,290,911 students enrolled, 251,793 completed their school periods, which corresponded to only 3% of the total number of enrollments; the trend is continuing in this direction and is growing. The cause for this dropout rate may involve several factors, including individual, family, social and academic factors (Barlem et al., 2012; Campos et al., 2018; Nierotka et al., 2023).

Dropout is, therefore, a complex and multi-determined phenomenon, which generally refers to the interruption of the study cycle (Santos Junior & Real, 2017). It can refer to dropout “from the course” – abandoning the original course; “from the institution” – changing from one institution to another; or “from the system”, in which the student abandons higher education.

However, according to Lobo (2012), one of the symptoms that has the greatest influence on dropout is academic failure, sometimes identically called school failure. Also perceived in higher education just like in basic education, Lopes et al. (2023) point out that this event involves both internal (subjective) and external (social, political and institutional) factors. Barbosa (2019) emphasizes that some specific characteristics, such as social origin, race and gender, should be considered when discussing academic failure and dropout in higher education. Silva and Sampaio (2022), when reviewing student retention policies through a systematic review, point out that in order to combat academic failure, issues related to the impact on dropout, time until graduation and the student’s academic performance ought to be considered.

In this connection, in order to analyze this complexity, according to the research carried out in recent decades, the phenomenon must be approached as a plurality and from different perspectives (Procópio, 2014). Failure, therefore, would be related to pedagogical, gender, positioning, work, racial, and political issues, and these would also derive from specific characteristics of each training, sociological, teachers’ training, curriculum, and the approach to the teaching-learning process (methodological stances).

Another aspect highlighted as an indicator of potential cause of dropout is students’ retention (Vanz et al., 2016). Academic failure and retention, therefore, are phenomena that deserve special attention when focusing on the dropout issue. By highlighting such variables, discussions involving the mediating role of the teacher, that is, the exercise of teaching, become inevitable. It has long been argued that teaching activity requires the development of a series of knowledge, such as psychopedagogical, didactic, content, and context, in order to enable effective learning (Alves & Miguel, 2021). Effective learning is substantially the construction of new knowledge, so that it can be easily linked to other contents, already available to the individual, and in a fluid way. Moreira (2013) uses the concept of meaningful learning, in which the content learned is not tied to the literal, nor disconnected from the known content. Ausubel (2003) presents the concept of anchor idea, proposing that the anchor idea is a specific content, already known to the learner, and that allows him/her to give meaning to the new, whether the concept is presented to the individual or even discovered by him/her. Thus, according to Farias (2022) when interpreting Ausubel’s theory, the more the new material is associated in a substantial and non-arbitrary way to some aspect of the previous cognitive structure that is relevant to the learner, the closer it will be to being meaningful and, therefore constituting functional learning.

Piaget, another icon who help understanding the development and learning processes, conceives the individual as an active being, “who transforms himself based on his cognitive actions which are derived from the relationship with the environment or from the intellectual demands

(which need to be constantly posed, the so-called challenges)” (Correia et al., 2021, p. 52). Thus, the learning context plays a fundamental role in the involvement and construction of knowledge. Vygotsky, in turn, by highlighting the context of human learning, becomes an essential foundation scholar of this study. According to his theory, “educational activity makes up a complex triad between teaching, learning, and psychological development, which can and should be taken as a unit of analysis in scenarios of individual assessment, formal education, and intervention in the ruptures of this process” as reported by Correia et al. (2021, p. 77).

In this sense, it is clear that learning cannot be separated from the way in which the content reaches the learner. Barbosa and Moura (2013), however, point out that in the Brazilian context the educational scenario is very diverse. Within this diversity, it is possible to find everything from the archaic and traditional model, which has the “copying from the board” as the main form of action, to learning environments that provide tablets and notebooks for students and teachers. This, regardless of the segment, whether elementary, secondary or even higher education.

It is known that both evasion and retention have negative individual, social, administrative and financial consequences (Davok & Bernard, 2016; Vanz et al., 2016), suggesting that they should not be neglected or relativized. Prestes and Fialho (2018), in a study carried out at the Universidade Federal da Paraíba (UFPB, Paraíba Federal University), found that in the period from 2013 to 2015, campus I (João Pessoa) had a total of 89,576 students enrolled of which 8,196 graduated and 16,866 dropped out. The authors found that the average length of stay in undergraduate courses at that institution was around two years. And that from 2007 to 2015, the institution experienced a financial loss of around R\$ 611,302.03, just on Campus I. The significant number of dropouts brought, in addition to the social, individual and educational effects, consequences on institutional planning, budget and educational provision. And, according to data from INEP, this Higher Education Institution’s issues are not isolated cases.

In view of the above, this study reviewed dropout rates in relation to academic success/failure and other related variables, based on different areas of knowledge, using Universidade Fereal da Paraíba as the scenario. Points of convergence and divergence between the different areas were highlighted, which may be correlated with dropout rates, in order to highlight characteristics that are implicated in the dropout phenomenon. To this end, it was necessary to survey retention (failure) rates in undergraduate courses in different areas; locate the highest retention rates within these courses; compare failure and dropout rates in higher education in different courses and areas; compare failure rates with motivation in relation to the degree and satisfaction with teachers, considering dropout rates and area of knowledge; compare satisfaction rates with teachers/methodological postures, failure and dropout rates with the evaluation reported in the *Exame Nacional de Desempenho dos Estudantes* (ENADE, National Student Performance Exam), in the selected courses.

In this sense, research has proven to be relevant for contexts whose objective is to promote learning and essential for settings whose purpose is not only to qualify professionals, but also to build new knowledge, such as that of higher education. It will also help in the development of retention policies and in tackling the high dropout rates in higher education courses.

Method

Participants

The sample consisted of undergraduate evening and daytime courses in different areas of knowledge – Health Sciences (Medicine and Dentistry), Education (Pedagogy), Humanities (Social

Sciences, Psychology and Literature) and Exact Sciences (Civil Engineering and Computer Science) at UFPB. The professors and students of those courses participated indirectly through the results of the Institutional Assessment, for the periods first and second semester 2018, answered on the *Sistema Integrado de Gestão das Atividades Acadêmicas* (SIGAA, Integrated Academic Activities Management System) page by the students. The identification of all participants was blinded in the analyses on account of the anonymous nature of this investigation.

Instruments

Most of the data were collected from responses to the institutional assessment, available on SIGAA. This assessment is mandatory for enrollment in each semester. It is an instrument that consists of seven items, distributed in four dimensions: self-assessment, subject, teacher and course in which students must assign grades from 0 to 10 for each course taken in the previous semester, with the exception of one item in which the student must indicate possible adjustments in the discipline. The Student Assessment and Self-Assessment Instrument aims to highlight points such as the teacher's teaching methods, the teacher-student relationship, assessment and updating of the content provided and different levels of student satisfaction with the course taken. These items are fundamental for reviewing the quality of teaching and are indicated as contributing to the composition of the subjective learning process (Martinez & Rey, 2017). The other part of the data was collected from the teacher assessment reports, accessed in the different Departments of the aforementioned courses.

Data Collection Procedure

Institutional data for the periods indicated above were sought from the Observatory of the Provost's Office for Undergraduate Studies, which generates systematic databases regarding the institutional assessment and the self-assessment. Subsequently, the data were tabulated in courses, periods and items related to the investigation objectives. Finally, a survey was conducted with the Centers/Departments of the aforementioned courses considering the assessment of the professors who taught courses at the beginning, middle and end of the course. After accessing this information, a mapping was developed showing the disciplines that revealed the best and worst professors who had been assessed in each period selected.

Data Analysis Procedure

The following variables were considered for the assessment: (1) the students' enrollment status, whether they passed or failed based on average, as an inference for academic success or failure; (2) the failure rate due to absence and the interest in abandoning the course, as indicators of dropout; (3) the dropout rate; (4) the item referring to motivation and commitment to the discipline; and (5) the item that assessed students' satisfaction with their teacher's performance in each course.

The data were recorded in the database of the Statistical Package for Social Sciences for Windows™, IBM®SPSS® (version 20.0) and reviewed using univariate and bivariate descriptive and inferential statistics. For descriptive procedures, raw frequencies, rates and measures of central tendency (mean and median) and dispersion (standard deviation) were presented. Statistical inference procedures were performed based on parametric statistics (Analysis of Variance – ANOVA) and non-parametric statistics, using association tests between categorical variables (Chi-Square,

Cramer's V coefficient). A confidence level of 95% and a significance level of 5% were adopted for the interpretation of the information.

All ethical procedures included in Resolution No. 510/16 of the National Health Council were complied with. Therefore, this investigation was approved by the Research Ethics Committee of the Health Sciences Center of the Federal University of Paraíba (protocol 89552218.2.0000.5188, opinion number 2,694,371).

Results and Discussion

Initially, the students' enrollment status in eight courses was reviewed, using the Chi-Square inferential test. The following significant associations were found between: *failure due to absence* (which would be due to the dropping out of the discipline) and "failure" (which would be due to poor performance) and the courses of Computer Science, Social Sciences, Civil Engineering, Literature and Pedagogy in which the highest failure rates were also observed in the periods assessed.

When each course was assessed separately, it was found that the one with the highest percentage of "failures due to absence" in the first semester of 2018 was Social Sciences (with 7.6% of the enrollment situations). In the second semester of 2018, Computer Science (8.7%) and, again, Social Sciences (8.6%). As for "performance failure" in turn, the highest incidence occurred in the Computer Science course in both semesters (21.3% and 17.1%, respectively). Absence failures were more due to evasion, while performance failures were due to performance.

When the data were reviewed by areas of knowledge, considering the registration situation, a statistically significant association was found between "failures due to absence"/ "performance failures" and the Exact and Humanities areas (the latter also included Pedagogy). The Health area, in turn, was associated with a pass situation. In the first semester of 2018, the Humanities area showed the highest "failure rate due to absence", while the Exact sciences area was the one with the highest "failure rate" (by average or performance). However, in the second semester 2018, the Exact sciences area had the highest "failure rates" both in terms of absence and failure situations (Table 1).

In this connection, we observed that the highest failure rates occur in different areas, namely: Exact Sciences and Humanities. However, for different reasons, while in the first educational area

Table 1

Assessment of enrollment situations "failure due to absence" and "failure" in different areas of knowledge in the first and second semester 2018 (2018.1 and 2018.2)

Areas of knowledge	2018.1				2018.2			
	Failure due to absence		Failure		Failure due to absence		Failure	
	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Exact	182	4.4*	514	12.5*	222	5.9*	446	11.8*
Humanities	520	5.2*	907	9.1*	530	5.4*	817	8.4*
Health	73	0.4	230	1.3	71	0.4	184	1.1
Total	775	2.5	1651	5.2	823	2.7	1447	4.8
χ^2 (<i>p</i>); V	2101.17 (< 0.001); 0.18				2308.36 (< 0.001); 0.19			

Note: *Statistically significant association, considering enrollment status (approved, enrolled, failed due to absence and failed). χ^2 : Chi-Square test value; *p*: Significance; V: Cramer's V coefficient of association.

Source: Table based on the processing of data extracted from a database made available by the Vice-Dean of Undergraduate Studies of the institution assessed. João Pessoa (PB), Brazil, 2019.

the failures are due more to “poor performance”, in Humanities “abandonment of the discipline” is the key reason. On the other hand, the lowest failure rates due to both conditions are observed in the Health area.

Subsequently we reviewed the potential dropout rate, when students indicate an interest in abandoning the course. In both 2018 semesters, the courses with the highest dropout rates were computer science and social sciences. As seen in Table 1, these were also the courses with the highest failure rates due to absence. On the other hand, the courses with the lowest dropout rates were Dentistry and Psychology in the first semester 2018, and Medicine and Psychology in the second semester 2018.

Thus, “dropout indicators” and “dropout rates” appear to occur in the same educational areas and courses. Health degrees also confirm this trend, registering the lowest “dropout indicators” and courses with the lowest “failure rates due to absence” confirming the indicator as a strong predictor of dropout, as well as of abandonment of the discipline.

Another measure assessed was the number of enrollment suspensions filed by students. In both semesters, the Social Sciences and Pedagogy courses had the highest number of enrollment suspensions, while the courses with the lowest number were Computer Science and Medicine in the first semester 2018 and Computer Science, Literature and Medicine in the second semester 2018. The descriptive data related to this information are reported in Table 2.

Social Sciences and Computer Science courses are among the courses with the highest failure rates, withdrawal or interest in abandoning the course, which is confirmed by Vanz et al. (2016) when they shed light on the need to focus on retained students, seen as potential dropouts, considering that dropout brings administrative problems, besides pedagogical issues. High retention rates also indicate the relevance of considering the approaches to the teaching-learning process (methodological postures) of teachers, the infrastructure and pedagogical resources, among other factors that can influence the retention and academic success of students. This is especially true in those courses where retention rates were high.

Dropout and enrollment suspension rates were also assessed according to the area of knowledge. The highest indicators of potential dropout occurred in the Exact Sciences area, while

Table 2

Assessment of dropouts and suspensions in different courses in the first and second semester 2018 (2018.1 and 2018.2)

Courses	Dropout indicator				Number of suspensions			
	2018.1		2018.2		2018.1		2018.2	
	<i>M</i> ± <i>SD</i>	95% CI	<i>M</i> ± <i>SD</i>	95% CI	<i>M</i> ± <i>SD</i>	95% CI	<i>M</i> ± <i>SD</i>	95% CI
Computer Science	3.51 ± 3.58	3.32-3.69	3.49 ± 3.67	3.29-3.68	1.22 ± 0.51	1.17-1.27	1.25 ± 0.56	1.20-1.30
Social Sciences	3.36 ± 3.66	3.22-3.69	3.91 ± 3.91	3.64-4.19	1.61 ± 0.92	1.49-1.73	1.44 ± 0.73	1.35-1.53
Civil Engineering	2.89 ± 3.37	2.75-3.02	2.74 ± 3.35	2.60-2.88	1.24 ± 0.60	1.19-1.29	1.29 ± 0.70	1.22-1.35
Literature	2.76 ± 3.53	2.61-2.91	2.91 ± 3.63	2.75-3.06	1.35 ± 0.62	1.30-1.40	1.25 ± 0.44	1.20-1.28
Medicine	2.22 ± 3.26	2.17-2.28	1.96 ± 3.15	1.90-2.01	1.23 ± 0.60	1.20-1.25	1.23 ± 0.53	1.21-1.28
Dentistry	2.14 ± 3.24	2.04-2.24	2.21 ± 3.19	2.11-2.31	1.38 ± 0.51	1.33-1.42	1.29 ± 0.91	1.20-1.38
Pedagogy	2.80 ± 3.53	2.70-2.91	2.81 ± 3.59	2.70-2.92	1.53 ± 0.83	1.48-1.59	1.55 ± 0.78	1.49-1.60
Psychology	1.99 ± 2.90	1.88-2.11	2.00 ± 2.97	1.88-2.11	1.43 ± 0.71	1.37-1.48	1.36 ± 0.67	1.30-1.42
F (<i>p</i>)	69.10	(< 0.001)	103.03	(< 0.001)	34.26	(< 0.001)	26.45	(< 0.001)

Note: Pairwise comparisons using the Bonferroni *post hoc* test indicated significant differences between all courses when compared with each other. F: Analysis of Variance (ANOVA) test value; *p*: Significance.

Source: Table based on the processing of data extracted from a database made available by the Vice-Dean of Undergraduate Studies of the institution assessed. João Pessoa (PB), Brazil, 2019.

the lowest ones occurred in the Health area. The number of enrollment suspensions, on the other hand, is higher in the Humanities area and is equivalent in the Exact Sciences and in the Health areas (Table 3). These results may suggest different reasons for the enrollment suspension in disciplines of the different areas, considering the fact that they show divergent trends in relation to dropout.

Table 3

Assessment of dropout rates and number of enrollment suspensions in different areas of knowledge in the first and second semester 2018 (2018.1 and 2018.2)

Areas of knowledge	Dropout indicator				Number of suspensions			
	2018.1		2018.2		2018.1		2018.2	
	<i>M</i> ± <i>SD</i>	95% CI	<i>M</i> ± <i>SD</i>	95% CI	<i>M</i> ± <i>SD</i>	95% CI	<i>M</i> ± <i>SD</i>	95% CI
Exact	3.13 ± 3.48	3.02–3.24 ^{ab}	3.02 ± 3.50	2.91–3.14 ^{de}	1.25 ± 0.58	1.21–1.28 ^h	1.27 ± 0.64	1.23–1.31 ^l
Humanities	2.65 ± 3.42	2.58–2.72 ^{ac}	2.71 ± 3.52	2.64–2.79 ^{df}	1.46 ± 0.76	1.43–1.50 ^{hi}	1.41 ± 0.68	1.38–1.43 ^{jk}
Health	2.20 ± 3.26	2.15–2.25 ^{bc}	2.02 ± 3.16	1.97–2.07 ^{eg}	1.25 ± 0.59	1.23–1.27 ⁱ	1.24 ± 0.58	1.22–1.26 ^k
<i>F</i> (<i>p</i>)	146.99	(< 0.001)	213.18	(< 0.001)	79.58	(< 0.001)	50.38	(< 0.001)

Note: *F*: Analysis of Variance (ANOVA) test value; *p*: Significance; equal letters denote statistically significant differences between areas, indicated by the Bonferroni *post hoc* test.

Source: Table based on the processing of data extracted from a database made available by the Vice-Dean of Undergraduate Studies of the institution assessed.

Similar results were found in the study by Prestes and Fialho (2018); they demonstrated that between 2013 and 2015, the Knowledge Centers associated with exact sciences courses at UFPB (Technology Center, Center for Alternative and Renewable Energies, Computer Center, Center for Exact and Natural Sciences, and Center for Technology and Regional Development) were the Centers that presented the highest dropout rates, exceeding 20% each while the *Centro de Ciências Médicas* (CCM, Center for Medical Sciences) and the *Centro de Ciências da Saúde* (CCS, Center for Health Sciences) presented the lowest dropout rates.

The variables student “motivation” and satisfaction with the teacher were also assessed in the three areas of knowledge. It was found that the most motivated students were those enrolled in Health, while those with the lowest motivation rates were in the Exact Sciences area. Likewise, students in the Exact Sciences assigned lower grades in their teachers’ evaluation, while the students in the Health area tended to assign higher grades, as shown by the descriptive and inferential data reported in Table 4.

This evidence suggests the existence of a close association between the mediator’s approach to learning, i.e. between the method and satisfaction and, consequently, motivation of students with the construction of the knowledge conveyed.

Table 4

Student motivation and teacher evaluation by students in different areas of knowledge in the first and second semester 2018 (2018.1 and 2018.2)

Areas of knowledge	Student motivation				Grades given to teachers*			
	2018.1		2018.2		2018.1		2018.2	
	<i>M</i> ± <i>SD</i>	95% CI	<i>M</i> ± <i>SD</i>	95% CI	<i>M</i> ± <i>SD</i>	95% CI	<i>M</i> ± <i>SD</i>	95% CI
Exacts	7.78 ± 2.25	7.71–7.85	7.81 ± 2.27	7.74–7.88	7.77 ± 2.58	7.69–7.85	7.99 ± 2.45	7.91–8.07
Humanities	8.46 ± 1.86	8.42–8.49	8.52 ± 1.90	8.49–8.56	8.44 ± 2.22	8.40–8.49	8.40 ± 2.34	8.35–8.44
Health	8.84 ± 1.39	8.82–8.86	8.80 ± 1.47	8.78–8.82	8.61 ± 2.07	8.58–8.64	8.60 ± 2.07	8.57–8.64
<i>F</i> (<i>p</i>)	685.94	(< 0.001)	494.74	(< 0.001)	237.56	(< 0.001)	119.02	(< 0.001)

Note: *Pairwise comparisons were made between the areas of knowledge using the Bonferroni *post hoc* test, which indicated differences between all areas. *F*: Analysis of Variance (ANOVA) test value; *p*: Significance.

Source: Table based on the processing of data extracted from a database made available by the Vice-Dean of Undergraduate Studies of the institution assessed. João Pessoa (PB), Brazil, 2019.

The assignment of grades to teachers was considered based on the students' enrollment status in terms of academic performance indicators. It was observed that students with a "passed" status assigned the highest grades in their teacher's evaluation task, while those students who "failed for absence" and those who "failed" (performance) assigned lower grades. It is worth noting that, in the second semester of 2018, although the above finding was replicated, the highest average grade was given to the students in the 'enrolled' status (those who continued to take the course). This information is detailed in Table 5.

Table 5

Assessment of grades given to the teacher by students based on their academic status in the first and second semester 2018 (2018.1 and 2018.2)

Enrollment status	Grades given to the teacher			
	2018.1		2018.2*	
	<i>M</i> ± <i>SD</i>	IC 95%	<i>M</i> ± <i>SD</i>	IC 95%
Approved	8.53 ± 2.12	8.51–8.56 ^{ab}	8.52 ± 2.14	8.49–8.55
Registered	8.18 ± 1.42	7.86–8.51 ^c	9.50 ± 1.28	9.37–9.63
Failed due to absence	7.63 ± 2.63	7.43–7.84 ^{ad}	7.71 ± 2.82	7.50–7.92
Failed	7.20 ± 3.11	7.04–7.36 ^{bcd}	7.32 ± 3.02	7.15–7.48
F (<i>p</i>)	204.29	(< 0.001)	17.98	(< 0.001)

Note: *Pairwise comparisons were made between areas of knowledge using the Bonferroni post hoc test, which indicated differences between them in all enrollment situations. F: Analysis of Variance (ANOVA) test value; *p*: Significance; equal letters denote statistically significant differences between areas, indicated by the Bonferroni *post hoc* test.

Source: Table based on the processing of data extracted from a database made available by the Vice-Dean of Undergraduate Studies of the institution assessed. João Pessoa (PB), Brazil, 2019.

There is agreement in the literature that dropout occurs for a number of reasons, and it is therefore not possible to attribute a single cause to the event. Regarding issues related to the institution, though, common situations are pointed out, such as school poor physical structure, absence or inefficiency of retention policies, characteristics of the teacher-student relationship, inadequate evaluation system, lack of consideration or recognition of the student's learning difficulties and degree of difficulty of the course (Campos et al., 2018; Davok & Bernard, 2016). In our investigation, based on the the results obtained, it was possible to glimpse the relationship between "satisfaction with the teacher", "dropout" and "failure". It is clear, for example, that the Exact Sciences area has the highest failure rates due to absences and performance average, as well as the lowest "motivation" rates and highest indications of "dropout", coinciding also with the greatest "dissatisfaction" with teachers. In the other direction, in turn, it is observed that in the area of Health, in which there are higher rates of academic success, there are lower rates of evasion and failure as well as greater satisfaction with the teachers.

Data regarding the National Student Performance Exam (ENADE)

According to the Anísio Teixeira National Institute of Studies and Educational Research, ENADE aims to assess the performance of undergraduate students in terms of program content, skill development and competencies acquired during their education process, as well as the level of students' awareness about Brazil and the world reality. To complement the analysis, we sought to consider the performance of students in the courses observed in the ENADE (Instituto Nacional de Estudos e Pesquisas Educacionais Anísio Teixeira, 2018a) report at the time. We then found that the

courses generally achieved good or average assessment in the aforementioned evaluation, except for the Social Sciences course, which was considered unsatisfactory and received a grade 2. In this connection, it is important to emphasize that the aforementioned grade also stood out in the highest rates of students' "failure" (due to average or absence), "enrollment suspension" and "indication of school evasion". These are data that suggest association between failure and dropout rates with student education quality. Although other degrees, such as Psychology and Dentistry, confirm this relationship albeit in the opposite direction, that is, in the positive direction, this relationship cannot be considered a rule, since it manifested in different manners in areas such as Computer Science and Medicine. Computer Science also demonstrated high rates in some of those same variables (except in relation to dropouts), but achieved an excellent result, grade 4 and Medicine, despite having recorded low dropout and failure rates, had a less robust, although regular, grade 3 performance. These data lead to the confirmation of the multidimensionality of causality of the dropout phenomenon, so widely discussed in the specific literature.

Thus, corroborating the latest understandings presented above, although the exact sciences courses indicated higher rates of dissatisfaction with the teacher, dropout and failure rates, and less motivation, their students performed well in the ENADE (Instituto Nacional de Estudos e Pesquisas Educacionais Anísio Teixeira, 2018b), with emphasis on the Civil Engineering course, evaluated with a score of 5, a concept considered excellent. In the Humanities area, however, the courses showed significant rates of dropout, failure and enrollment suspension and had less robust performance (Language and Pedagogy, both with score 3), confirming the relationship, with the exception of the Psychology course, which achieved a score 4, but also presented the lowest dropout rates; Social Sciences remained the most alarming (2 points in the ENADE). The other courses in the Health area that showed greater motivation and satisfaction with the teacher, lower dropout and failure rates, obtained performances interpreted as good (Dentistry, with a very good score 4).

Final Considerations

The dropout phenomenon, considered through data on "failure due to absence" and "enrollment suspension", was evidenced in all the major areas of knowledge investigated, showing differences between them in terms of student motivation, retention, student performance and satisfaction with the teacher. Some results corroborate data from the literature, such as high dropout and retention rates in the Exact Sciences area; and relationships between dissatisfaction with the teacher and dropout rates, in Exact Sciences and in other major areas of knowledge.

We observed, among the courses representing each major area of knowledge, significant associations between variables such as "failure due to absence, failure due to average, student motivation, dropout rates and dissatisfaction with the teacher" as well as in the opposite direction: "better performance, reduced dropout and retention rates and satisfaction with the teaching posture".

The "institutional assessment" was one of the main sources of information for this investigation, leading to its recognition as an important database to support assessments and suggestions for improvements in the quality of higher education. The evidence from this source also points to the need to shed light on a fundamental variable in the analysis of the dropout phenomenon in higher education: the mediation of knowledge or the teaching posture. This suggests the need for programs that instigate teachers' reflections and lead to their updates on the subject.

It is pointed out that there is a need for studies to carry out more detailed surveys on which other variables lead to higher rates of motivation, satisfaction and lower dropout rates in some

areas compared to others, as well as on the teachers' profiles that possibly lead to an increase or reduction in dropout rates, academic failure and greater motivation. In this sense, it is pointed out that there is a need to foster more effective retention programs, strategies and policies.

Finally, it should be considered that the data discussed in our investigation refer to the COVID-19 pre-pandemic period, and that, therefore, a study of the effect of the pandemic on these indices may reveal other relevant variables and more effects on the return to in-person classes.

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