Self-Perceived Reasons to Dropout from Higher Education - a Case Study in a Portuguese Faculty of Engineering

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Abstract : Dropout from Higher Education (HE), that is, the number of students that totally leave a given HE institution is concerningly high, especially in times of crisis.

Institutions struggle to minimize dropout, but limited data is available likely because gathering data from learners who dropped out is sensitive, likely involving private information. This paper presents a case study research on student dropout from a very large Portuguese engineering faculty. The main objectives of this research include to gain a better understanding about the reasons for dropout, from the former student's point of view, and to build a profile for the dropout-at-risk student.

The collected data was retrieved from institutional records and from 134 telephonic interviews with former students. The resulting data is analysed in both quantitative and qualitative ways.

Results of all gathered dropout data are clustered into three profiles of students who dropout: those that "pull out", those who were "pushed out" and those who "fall out". Findings include that students do not decide to dropout by a simple single reason but rather a set of reasons.

This research article includes 5 concrete improvement suggestions that are likely to reduce dropout. The two main suggestions are to better prepare the transition to HE and to make policies more flexible in times of crisis, example more flexible schedule.

Keywords: dropout; Higher Education; reasons to dropout.

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1. Introduction

European education policies that arose from the Bologna process have been shaping the challenges facing universities' regarding growing students' diversity and accountability to social mandates (European Commission, 2013).

Dropout, that is, students abandoning school is of the utmost importance also in Higher Education (HE). The dropout phenomenon came into the agenda of HE policies through the strategy of Horizon 2020, defined in March, 2010. As much as HE Institutions (HEI) face themselves with competition and or survival, dropout is an important issue to fight (Vossensteyn et al,2015). Competitive HE institutions search to retain the most promising students or institutions that struggle for survival search for better integration of

enrolled students into academia. University dropout is a phenomenon with impact at social (in a broad sense), institutional and individual levels. Literature stresses the impacts of dropout as it affects the future of personal lives (Ribeiro, 2014), those who dropout but also their families. It affects, also, the future of a country in a socio-economic perspective, if it is a larger phenomenon (Ulriksen, Madsen, & Holmegaard, 2010; Raviv & Bab-Am, 2014; Vossensteyn et al,2015). The Portuguese case concerning HE dropout is a specific one, due to the economic crisis lived after 2010, and the effects of pandemic in 2020 and 2021, but also due to the enlargement of compulsory school to twelve years. In 2010, a national policy was defined to achieve in 2020 the graduation of 40% of citizens below 35 years of age. These issues have been framing the educational situation in Portugal, but Higher Education (HE) accomplishment rates were far from the desired level, at the time (Mendes, Caetano, & Ferreira, 2016; Engrácia & Baptista, 2018). Figures have increase, as in the OECD report of 2021 the Portuguese rate concerning Bachelor or equivalent graduation was 41%. However the percentage of students that were not enrolled in the HE programmes, one year after their first inscription were, for the bachelor or equivalent of 18,5% in 2015; 18% in 2016 and 17,8% in 2017 (EDUSTAT,2021). Furthermore, there is a strong political discourse, worldwide, concerning the importance of Science, Technology, Engineering and Mathematics (STEM) programmes (NEP,2020), both to improve the national workforce in line with sustainable development objectives and national commitment to improve tertiary education. As Shashidhar et. al. (2021) argue, in a recent literature revision paper on STEM, several schools and universities worldwide have implemented STEM pedagogy in their curricula to promote inclusiveness and justice in pedagogy. This issue explains the importance of present study that was conducted in an Engineering HE Institution, where STEM aims are important and as inclusiveness and dropout prevention are running together. To sum up, this particular case (an Engineering Faculty in Portugal) relates to and can tell us something about other HEIs globally, due its character of a typical case.

This paper intends to study dropout from the perspective of students that effectively leave University without complete their graduation. This approach is also relevant to enlighten the paper focus – the dropout prevention, even if data used is now somewhat old. Its contemporary relevance is based on difficulties perceived by former students that experience dropout in times of crisis. Such perceptions are somehow similar to other students from other countries in similar fragile situations. After the previous introduction about dropout in HE, the following sections will present the key issues in current research. This article then establishes the research focus and methodology for this study. The results of the study and associated conclusions are finally presented.

2. Foundations Regarding Dropout

In general terms, the literature about the dropout phenomenon mentions types of (i) Movement Types and (ii) Concern Axes as follows.

A. Dropout – Movement Types

Doll, Eslami, and Walters (2013) presented an interesting framework for the study of the dropout phenomenon, summarizing data from fifty years of school dropout studies in USA.

The study categorizes students' dropout in three movements (Doll et al., 2013):

(i) Students may be "pushed out" (school circumstances, etc);

(ii) Students may "pull out" (circumstances inside to the student, etc);

(iii) Students may "fall out" (academic disengagement, etc).

The study (Doll et al., 2013) collected data from several surveys done by diverse national offices and had in mind the idea of early school leaver compared with compulsory school at the time. Although the study itself did not target the HE system, the categorization framework for the types of dropout movements is assumed valid.

Students are sometimes (i) "pushed out" of the system when teachers don't help, courses in curricular units of programmes are too hard or teaching is poor and students accumulate failures.

In other circumstances, students (ii) "pull out" or leave the system because this allows more freedom and allows for a personal strategy of students, meaning that students take the initiative of pulling out

from the Higher Education institution. They feel that they have better options or other problems to face and they prefer to leave in a definitive or temporary option to pursue other paths.

Yet other times, students (iii) "fall out" of the system, mainly due to not liking the school or because they are not involved nor integrated. Other relevant reasons include lack parent support and poor study habits.

Early studies from the 1950s to the 1980s evidenced that students predominantly reported dropout factors related to (ii) "leaving" (being pulled away) from schools. As time went by, the phenomenon has shifted toward more students reporting (iii) "push" factors. "Perhaps a climate of high expectations [concerning scholarship] has led more dropouts to the point of exasperation and, in turn, [students] quit school" (Doll et al., 2013, p. 13). It is possible that the HE sector may be evidencing a similar dropout trend. If true, this is possibly due to much easier access to HE, even for families that were away from tertiary education thirty years ago.

B. Dropout – Concern Axes

Literature also identifies three main Concern Axes: (i) personal, (ii) institutional and (iii) social-economic. These three axes / dimensions also relate to the main agents of dropout: the student, the Institution or other contextual circumstances (Doll et al., 2013).

Regarding socioeconomic factors (iii), such concerns are mainly related with family's incomes and resources that support students' enrolment as well as national policies regarding support of such economic cost. Two European studies (from Italy, and Portugal) (Aina, 2013; Ribeiro, 2014 and another from South Africa focus on this level (Breier, 2010). Using different methodological approaches, they stressed the impact of economic fragilities of families (due to economic crisis in the Italian and Portuguese cases) in the dropout phenomenon. It is likely that these families, probably with less education and with economic fragilities are having difficulties in enrolling youngsters in tertiary education and or are withdrawing and or dropping-out. Low income also affects negatively the transition from high school to college (Aina, 2013) and dictates the vulnerability of those with higher dropout risk (Ribeiro, 2013). It is understandable that economic welfare plays an important role in student's environment and Portugal,

as other countries in Europe (Aina, 2013), is under important financial constraints due to the rules imposed after the international bailout loan from 2010 to 2014. Nevertheless, even in USA, the National Centre for Education Statistics (NCES) reported their findings from the Education Longitudinal Study, which followed a nationally representative sample of 15,000 students who were in 10th grade in 2002, and concluded that lower graduation rates were among students from low-Social Economic Status (SES) backgrounds. "College graduation rates amongst students from the lowest quartile in the sample, low-SES backgrounds, are 14% compared to 60% of students from high-SES backgrounds, the top quartile of the sample" (Kena et al., 2015, p. 23).

Regarding personal (i) and institutional (ii) factors, such concerns are traditionally referred as key issues in dropout. These included the influence of student's previous schooling, academic preparedness and personal characteristics (Almeida, 2014). The weak academic accomplishment and the lack of social integration were the most important predictors of dropout related with such approach centred on students' identity. These explanations of the phenomenon are now largely seen in a more contextualized and ecological perspective as they do not focus on students' characteristics but in the quality of the relations they are able to establish with their peers, the program and the Institution settlements (Almeida, 2014). These issues link to the "sense of belonging", a feeling that needs to be nurtured (Cook-Sather & Felten, 2017) for successful schooling. It can be said that it is not the features of a given student that explain dropout but rather the experience of that student in a given institution that is likely to explain dropout reasons.

1) Research Perspective Shift

The previous clarification leads to a relevant perspective shift in the methodological approach to dropout studies. Within such a line of thought, it is possible to include a study conducted by Surhe, Jansen and Harskamp (2007) that explores the impact of program satisfaction on the dropout of Dutch students within the first two years of study. Degree program satisfaction relates to the fulfilment of expectations regarding the content of the degree program and the required study activities. Therefore, it is a relationship between students' expectations and Institutional educational offer. This important shift of perspective also emphasizes the importance of

Institutional factors: the student does not dropout individually but rather dropping out should be regard as a result of the relationship between students and their study programmes and institutions – even more so because institutions are responsible for student integration and socialisation (Ulriksen et al., 2010).

The previous realizations mean that the dropout concept is no longer a phenomenon concerning those that (individually) disappeared from the HE institution but rather research should include both individual and institutional perspective, where HE institutions must entirely assume their responsibility (Thomas, 2002; Tolstrup, Madsen, & Ulriksen. 2017). Such interpretation changes the discourse from dropout to retention, further emphasizing that HEI conducting retention policies are more interesting and effective than those that just identify reasons to dropout. It is thus important to deeply understand in what ways the values and practices of a HEI impacts student retention.

The mentioned perspective shift between considering dropout as either a question of individual adaptation or institutional change makes a huge difference regarding the "what next?" question (Tinto, 2005). When the issue is treated at institutional level, it is usually related with quality descriptors and it could mean that institution is not doing enough to perform its mission of fully graduating students (Bollaert, 2014; Lachká, Hašková, & Pilárik, 2014).

3. Present Research

The present research benefits from the foundations shown in section II in terms of (i) focus and (ii) methodology of the studies

A. Focus

Recent research has shifted the focus points to discuss Institutional practices designed to deal with dropout. Following some Institutions' policies taken to improve quality of courses, retention rates changed due to Bologna process from 2006 on and figures show a diminishing rate of dropout in the same period. The approval rates are related with pedagogical changes introduced in the courses in curricular units, namely the more centred student approach that characterizes curricular development at Institutions (Mouraz & Sousa, 2016). Tutoring, fewer students in each laboratory and practical classes, distributed evaluation, are key features of such curricular

changes. In addition, social and psychological aid available to some problematic cases, express the larger concern of Institutions regarding students learning effectiveness.

The previous discussion leads to the idea that dropout has a very relevant relational character and this changes the methodological options to diagnose this phenomenon. The research tools to use, instruments and measurements should tackle the dropout issue head-on, and assess relational issues as the main focus.

This paper will address how, in a particular Engineering HE Institution, the dropout has been experienced and justified by former students that effectively left the Institution without the diploma.

The objectives of present paper are:

• To establish the lived dimension of the phenomenon, experienced by ex-students;

• To identify the factors that explained the dropout, as ex-students named them;

• To relate these factors with personal characteristics of students, in order to build a profile of the students in risk of dropout in that particular Institution.

B. Methodology

This research article will study the dropout phenomenon in a Portuguese Engineering HE Institution that gets, each year, about 1000 new students enrolled in their several graduation and post-graduation programmes. Therefore, this study is a case-study (Stake, 2007) in the largest HE institution of northern region of Portugal and due to its top position in the rankings of school preferences of students who apply for HE. Furthermore, this Institution receives students from all the northern and centre regions of the country and that explains the broad importance of study.

The main approach to dropout is, traditionally, centred on figures and rates of retention and correlation one can establish with institutional or courses experiences launched to improve such rates (Suhre et al., 2007). However, it is difficult to do such correlations when there are several variables involved, or even if the phenomenon is not studied

with similar descriptors (Rodríguez-Gómez, Feixas, Gairín, & Muñoz, 2014). This research represents a different approach to the understanding of what may cause some students to leave their programme before graduation, because it focuses the perspective of ex-students who, effectively, dropped-out.

Gathering data from dropout is a sensitive issue and as such, data was obtained by institutional records to have information about dropout figures. To have a better understanding about the reasons that explain dropout, telephone interviews were done to ex-students. This approach to individuals is considered to be less intrusive than face to face interviews due to the negative character of the phenomenon it was intended to study (Musselwhite, Cuff, McGregor, & King, 2007). Moreover communicating through this mode is seen as more comfortable to interviewees as it is about to discuss a sensitive subject over the telephone with a stranger (Trier-Bieniek, 2012). Also, if interviewees had complains regarding the Institution it should be easy to talk about them in a more anonymous situation. Using telephone interviews faces potential benefits and challenges. Some benefits for the present study were identified: (i) good usage of human resources available - both economic and efficient; (ii) it was not possible to reach all the ex-students by face-to-face interview and (iii) it minimized the disadvantages associated with in-person interviewing concerning a potentially delicate issue. The risks and challenges of using telephonic interviews are mainly related to the reliability of the gathered information and the risk of misunderstanding some issues. After analysis, it was decided to interview by telephone as the benefits overcome the risks. All ethical aspects were always respected, regarding informed consent and data protection.

1) Target and Sample Populations

In order to select the sample, a major concern was to have access to a list of the total population / particular universe of engineering students that dropout between 2013 and 2014 within courses of this Institution. This period of time was considered adequate as it was both relevant for the economic crisis impact; it was distant enough in order to ex-students had already did other options in their lives, and still important for the research issue, as the data was collected in 2016/17. After the identification of students in that situation, an institutional mail sent by the HEI academic services was sent to them, requesting their participation in the study and explaining its overall purpose. The confidentiality of their potential contribution was stressed, and coming from this procedure the students' phone numbers were then available to researchers. From the students contacted, 170 confirmations were obtained, which resulted in 134 interviews. 33 ex-students did not reply to the phone calls, in spite of several tentative of contacting them and three (3) had the cellular phone disconnected. Therefore researchers contact all the students that said they were available to participate in the study.

The mechanism of data collection included standardized telephone procedures composed by a fully structured questionnaire and information to ensure successful telephone data collection. When the phone calls were made, former students were informed regarding their rights concerning participation – they were able to decide at the time if they want or not to give the information they were asked or not and they were free to answer only the questions they wanted.

2) Questionnaire and Procedures

The questionnaire included semi-open questions distributed in four main dimensions as following: (1) Personal data (age, gender) of former students and context of their enrolment in the Institution and in the program (students came from all the study programs offered by Institution); (2) Information regarding the experience of the program attendance including year of enrolment, initial expectations and Institution positive issues or learning experience; (3) reasons to dropout or leaving including negative event experienced or a particular story; and (4) activity developed after leaving Institution and actual situation.

Phone calls were made by two persons, one researcher and a research assistant. The two rehearsed the procedures making the first five interviews together. The interviews were audio recorded and then transcribed the main information.

Data was treated both in a quantitative and in a qualitative way. The quantitative approach was used to characterize the sample and to achieve the profiles of dropout. The Statistical Package for the Social Sciences (SPSS) program (v.21) was used to perform both analysis – descriptive and cluster analysis. The cluster analysis used the personal variables. The

qualitative approach centred on sample's long answers related with former students' expectations and with stories that pushed their leaving decisions. A content analysis was done on this material by using N-VIVO-v10. Both a priori and emergent categories were used in coding, the first ones modelled by questions and the emergent ones refereeing subcategories. The codification process was performed by two researchers on the transcribed material in order to discuss the categories attribution and the properties of each code created.

4. Results

The current chapter will further detail the target of the study and present the gathered data.

A. Students in the Study

The sample was composed by former students that were enrolled in that Institution from the school year of 2011 to 2014. 96 (72.7%) were men and 36 (27.3%) were female. Such distribution was, at the time, quite similar to the gender balance in the whole Institution. Therefore, is possible to state that dropout occurs in both male and female students from engineering in this specific Portuguese HEI. This conclusion comes from the similarity of enrolment and dropout rates, concerning gender distribution.

The large majority of students of the sample (89) were enrolled in the Institution coming directly from the secondary school education and throughout the national competition – they were 63.7% of all the cases. 29.3% were those who come with learning processes already in progress and with adequate European Credit Transfer System (ECTS) already accomplished. From 11 (8%) the information was not collected. From all the inquired students 67 (61.5%) were at this Institution and program corresponding to their application first option. For 32 former students (29.4%) the program was their second choice. Grades obtained during the secondary school and used as criteria to access HE for the students (included in the sample) that applied to the national competition were no different from the average of the total set of students that came into the Institution in the same school years. For 72 of those who came directly from secondary schools, the average grade varied between 14 and 18 (out of 20). Therefore, is possible to state that dropout was not related with lower grades at the enrolment process.

Students were mainly from families that could support the expenses related with Higher Education attendance. About 67.9% of the sample didn't apply to a scholarship from government. From the 23.1% that applied for this kind of economic support, only 4 students (3%) got this kind of grant. The information regarding this application to a economic support from government, was not collected from 12 students.

Regarding the amount of time former students remained at the Institution before the dropout event, 36.6% attended the Institution during a single year; 20.3% attend only a semester, about 16% were there for a period up to two months and a percentage of 10.5% attended more time than a year.

B. Reasons to Dropout

Data collected allowed to identify the factors that explained the dropout. These factors are organized in Table I as depending on the Institution's procedures or academic environment or related with students' context or motivation.

Table 1 : Reasons To Dropout – Axes

Institutional procedures	Student context
Institutional and administrative requirements Courses equivalences rules	Economic difficulties Professional issues Personal, health and family problems
"Cold" or distant Institutional "climate" Program structure High and demanding level of exigency Pedagogical strategies less interactive	Social and peer integration Academic integration Dissatisfaction regarding the program Achievement rates below the expectations
Academic environment	**Student motivation**

1) Related to Institution

Within the reasons to dropout identified by former students and that could be attributed to Institution one can list the difficulties experienced regarding administrative requirements. This kind of difficulties concerns Curricular Units equivalence request, lack of post working time classes, some difficulties to access the electronic platform of the Institution and other small issues that were not important if they were not cumulative issues of some disappointments previously experienced.

I was enrolled in a Master and I applied for obtaining Curricular Units equivalence. But

Institution didn't help in such process. At the time of enrolment, I was told that everything is OK but after they were always telling me to wait. I had no possibility to choose classes. Time was passing and nothing happened… and I gave up.

I was professional sportsman and I could not attend classes. There were no post working time classes and the Institution didn't provide a solution for my situation.

Besides the administrative issues, the Institution's "climate" (environment) was referred as "Cold" or distant by a large number of former students that did identified such issue as important to explain their dropout. The learning "climate" identified as competitive, less supportive and distant was one the arguments found.

The Institution is a very competitive learning environment. I was not used to this. In the first week there was a test and I had no information nor access to the electronic platform and there was no one to help me. I think that such a competitive learning "climate" was the main reason that pushed me to give up.

Other complains of former students concern programs, course's structure and organization. Such issues include the timetable, the balance between theoretical and practical classes, the size of classes and the articulation of subjects with real life.

The Institution offer doesn't prepare for commercial and business, which is what 90% of the graduates will do in professional life.

More traditional and less interactive Pedagogical strategies were, also, identified as factors of disappointment that contribute to former students leaving decision. Again, if such issue was not the only responsible for dropout, it was a factor that added to others, contributed to the decision to leave. Main complains concern the lack of interaction in the classes, the lack of attraction of teaching and pedagogical strategies that ex-students note in their former attended classes.

The last institutional feature that former students associated to dropout was the high demanding level of quality concerning Curricular Units' work and assessment when compared with students' expectations and with practices of other Institutions.

2) Related to students and their context

Among the reasons to dropout, economic difficulties would be important to identify because they could be a measure of lack of social justice. Only nine former students referred economic difficulties to explain their decision to leave Institution. Some of them depend of families' income, others, the older ones, depend of their work to live. When they referred the economic difficulties they meant difficulties to pay fees, to pay for the students' maintenance (food, accommodation to be studying in a different city away from parents' home) and to balance their living costs. Some of them applied for scholarship but they don't get this kind of support.

I was unemployed and I had no conditions to start the scholar year knowing that I will need to quit.

Closely connected with the lack of classes offer in a post-working schedule, professional issues were identified as another reason to dropout. Sometimes, timetable was not the problem but the time to balance work duties, study and personal life demands.

My working life didn't allow me to attend classes. Therefore, I think it will be an advantage (also to the Institution) to organize post working classes.

Few students identified other personal, health and family problems that were the reasons of dropout. Due to its unpredictable and little expression this kind of factors were not considered relevant for the study.

The fourth axis (student motivation) includes reasons that were originated in students themselves and their academic and relational difficulties.

Difficulties related with academic integration were referred by students that experience less support from teachers to overcome problems concerning pace, workload, and other difficulties related to subject matter. Such difficulties are related with students' previous knowledge and their competence to deal with new and more exigent performances concerning learning tasks within specific subjects. The transition from high secondary schools remains a very huge gap for many students and some need time to adapt to the new learning environment. For some, such adaptation took time to occur and they drop out earlier.

It was the lack of support. No one wanted to know if I was OK or if I was having difficulties. Students

that arrived later are left to their own fortune. Classes were huge, there was no individual support and who had difficulties or had come late could not make it. It was like a snow ball, bigger and bigger, no one cared and after was impossible to reach the goal.

Another transition problem, reported by former students were the difficulties related with social and peer integration. Students that came to the Institution for the first time and were shy or had lower communication skills had more difficulties to integrate themselves into peer groups.

Regarding students' reception, I felt a little lost. There were too many classes, too many students, too many schedules. In some courses, I did a group with X and in other Course I did a group with Y… to organize time to meet such persons was a nightmare. In spite the reception's week, I felt this relation management very difficult.

Besides the relative weight of previous dropout factors, the decision to leave was made up by former students following the answer to two crucial questions: did they like the subjects of the Curricular Units? Were they achieving the academic results they expected?

Dissatisfaction regarding the program and the courses attended was a key factor of students' motivation to remain enrolled or to left. Data collected showed that those who dropout for motivational reasons found out they didn't like the subject matters they had to study or even that they had a wrong idea of what it is to be an engineer in a given field.

I didn't like the course of Maths and I didn't like the lack of articulation between Maths and the specificity of the program I was enrolled, which was Chemistry.

Students that left the Institution after the first semester were those who failed in the first Curricular Units' assessment. This carried out other consequences like academic failure and a self-blame feeling regarding the family economic effort. The lower results and the achievement rates below the expectations were the final factor that conducted to dropout decision.

I was not able to follow the classes' pace. That was the reason for me to change the University. I wasn't able to get up to date with all the work, all the classes, all the subject matters… hence I left.

The answer to the question: "what have you done after leaving the Institution?" helps to enlighten the reasons of dropout, previously presented. The large majority, - 98 (73.2%) enrolled in another program and or Institution, while 28 (20.9%) went to job market. From the remaining 8 students there was no information. From those who remain studying, only 14 (10.4%) follow the same program or matter (at another Institution), while 84 (62.7 %) changed their subject. Regarding the new places for attending study programs, 22 interviewees had remained in the same University; 44 choose other public University in other Portuguese cities, 11 attended a private University and 21 enrolled in several Polytechnic Institutes.

Analyzing the reasons for drop out according to students' age allowed to find new connections to understand the lived dimension of the dropout phenomenon, experienced by ex-students. The students' age average was closely related to some dropout reasons. The older students explained the dropout for institutional reasons, as the transference and ECTS recognising issues, as much for context issues, like economic and professional reasons. The younger ones presented mostly reasons related to motivational issues combined with lack of support received from the institution or form peers. Also, the age seems to be a moderator variable between dropout reasons and the after dropout situation: the older ex-students dedicated themselves to professions while the youngest remained within the HE system.

C. Dropout profiles

From cluster analysis, it was possible to relate the factors identified with personal characteristics of students, in order to build the profiles of the students in risk of dropout in that particular Institution. Variables used were: age; programme choice in the application to University; reasons to dropout; and what did former student do after dropout. Concerning age, it was considered 23years old as the split figure as it means that older students should be those who have other job and /or life experiences than academic ones. For the purpose of classify reasons to dropout, one organize answers collected from students into three main categories: motivational, institutional and curricular reasons as the main motif referred focus personal issues, institutional issues or programme design and features. More specific reasons were presented and discussed within this main categories.
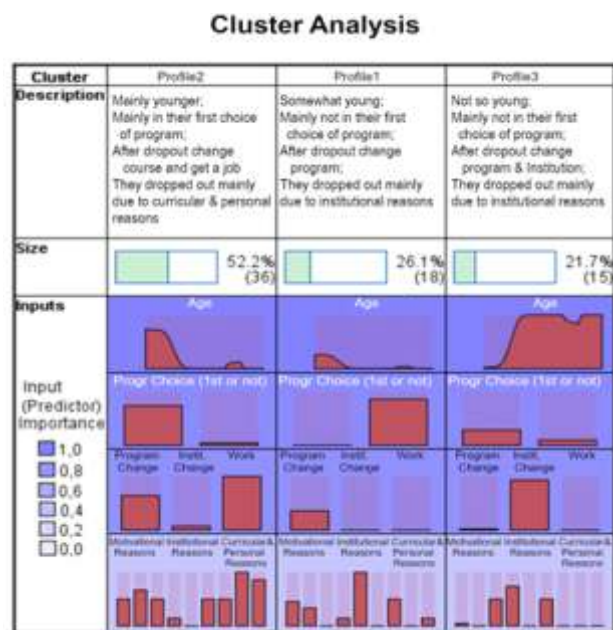
Cluster Analysis

Fig. 1 : Dropout Profiles – Cluster Analysis

Cluster analysis delivered three main profiles of dropout that are presented in Figure 1.

Profile 2 is the larger group of students (includes 52.2% of interviewees). These former students were enrolled in their first choice in the application process. After the dropout event they continue studying in HE, but they change program and / or Institution.

These students split in two situations: they are one half of those who came directly from secondary school and the other situation refers to those who had already enough ECTS to apply to a Master program.

Regarding the reasons for leaving they were several but include, mainly, motivational, institutional and curricular reasons. One can define this group as academically adrift, as they lost a year of their lives because they don't know what they really want. These students had a very good impression of the Institution, concerning resources and facilities. They left because they wanted to follow their vocational path independently of costs implicit in this decision, like having to repeat the national exams to improve their marks, having loosen a year or, even, paying more to be enrolled in other Institution. Finally, they had a clear idea of what they wanted to study and to be in the future.

My perception of Institution was good. I liked it. I left because I preferred Sound, Image and Multimedia.

This profile is generally matching the students that "pull out / leave" movement type, as it was presented previously. For this group, the Institution's educational offer doesn't match with personal aims and the choice to leave is made.

Profile 1 addresses the second set of former students (26.1%). Students that had been placed in their second option when they apply to HE are the main set of this group. Hence, this was the first time they apply to HE. After leaving the Institution under scope, they apply for another Institution and sometimes, they apply again for the national contest to access HE.

Within this group, the reasons to leave the program were diverse, but the most important ones were the motivational reasons and integration difficulties. They perceived the Institution as less supportive and less close as they needed to remain enrolled.

I think that if someone doesn't feel well integrated and has no confidence, that person is not prepared to continue in the Institution. My motivation to remain in the Institution was affected. I didn't feel myself integrated. I felt alone and excluded. I didn´t have a group to study or be a friend of.

I wanted to study Mechanics. I applied twice to this Institution and I was not accepted in that program. Hence, I applied to another University where I'm now finishing my degree in Mechanics.

This profile is generally matching the students "fall out" movement type. They did not like the school; they didn't feel involved or integrated.

Profile 3 concerns the smallest group of former students (22.1%). This group includes students that had chosen this Institution and program in the first place and came to attend master programs or apply for some equivalences of ECTS already acquired. Within this group, reasons to leave institution are diverse, but economic and context issues related to individuals are combined with Institutional rigid rules. The large majority of these students combined professional activities with study and they express some difficulties regarding their professional duties. Even those who didn't work at the time, left Institution to search for a job. These students had a very good impression about the Institution, concerning resources and teaching quality, but they consider that

the Institution is less flexible then desirable, meaning in order to have their needs into consideration.

I left the program to work in full time regime. That was the reason why I left. I applied for a scholarship but I didn't get it. If I had a scholarship, I probably would have remained enrolled. There is the question of money and the question of time. If someone has no money and has to work after he/she has no time, because Institution doesn't offer post-working time classes. Hence, this Institution is only for those who have money.

Such students follow a "pushed out" movement type, because they were not able to deal with professional and academic workload.

5. Discussion And Conclusions

The presented data, concerning dropout reasons according to the lived experience of former students of the study, could be summarized into seven main ideas:

(1) Reasons for the phenomenon, from the perspective of those ex-students that have dropped-out of Higher Education could be mapped onto axes of institutional versus personal dimensions. The main proposed categories to organize such mapping are: institutional rules; academic environment; student context and student motivation. These categories include all the reasons identified by former students of the study.

(2) Reasons for dropout were in all cases clustered, never a single simple issue alone. This means that, at a certain moment, several reasons joined together to activate the decision to leave.

(3) Dropout is a personal decision, but it depends of a set of factors that are external to individuals, coming from their interaction with Institutions. This ecological perspective of dropout, also subscribed by Surhe et al. (2007), puts its focus on the quality of relations students are able to establish, or not, with their peers, with the program and the Institution settlements. Therefore, the dropout study should focus on such indicators.

(4) Among institutional factors, those that seem to be important were the difficult process of recognizing ECTS already done by students; the rigid and distant pedagogical climate and the less attractive and less contextualized teaching practices in some cases. Somehow, as it was pointed out, the HE pedagogical approach is not sufficiently friendly to students. In another and different scenario from HE is possible to check similar concerns as these, where revamping the curriculum, pedagogy, assessment, and student support for enhanced student experiences where found as a policy to pursue (British Council, 2020).

(5) Regarding personal factors, it is possible to identify some features from students' context, such as economic and professional constraints that explain some dropout decisions. The study emphasizes the idea already defended by Ribeiro (2014) concerning the vulnerability of students with lower incomes. It matches, also, with longitudinal studies that show the effects of the graduation gap between students coming from families with lower and higher incomes (Kena et al., 2015). However, in the present study, these economic factors were not so important; professional issues and constraints seem more relevant.

(6) Also important dropout factors are personal features such as missing broad motivation. This broad motivation includes: (i) a clear idea of what the student wants to learn; (ii) what the student wants to be in the future and (iii) difficulties related with social / peer integration. These factors were already studied by Almeida (2014) and identified as weak academic accomplishment and the lack of social integration. The present study deepens the connection as it associates such factors with students' profiles.

(7) This study also showed that HE students that dropout follows the Doll et al. (2013) referential with 3 types of movements: (i) those that "pull out", (ii) those that were "pushed out" and (iii) those who "fall out".

The presented study showed that roughly half of the students interviewed dropped out because they discovered that study programs were not what they expected – "pull out" movement type. In order to prevent such dropout, we propose, improvement suggestion 1, better information concerning programs, courses or professional profiles should be available before and by the time of the students'

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enrolment.

Another group of students or profile are those who find difficult to deal with professional (and economical) requirements and university's requirements and to whom the Institution was not flexible enough in its institutional rules – movement types "pushed out" or "fall out"). To retain these students, improvement suggestion 2, we propose new rules and/or economic support should be provided, concerning academic obligations related with time and fees.

The last identified group of students mentioned the difference between expectations regarding study programs and real experiences. Such difference was mainly attributed to lack of motivation and integration difficulties. These issues carried in turn consequences like academic failure and a self-blame feeling regarding the family's economic effort and that effort was in vain. Nevertheless, the sense of belonging of these students concerning institution was never created (Cook-Sather & Felten, 2017). The Institution was not able to support those students ("pushed out" movement type). To retain these students, improvement suggestion 3, we advocate that more personalized and diverse helping devices should be provided by the Higher Education Institution (HEI), starting with academic advice and curricular path.

The previously presented ideas lead to the conclusion that, improvement suggestion 4, the transition to higher education system needs to be better prepared. Institutional policies should also promote students' retention and consider the real situation of the student in order to accomplish graduation.

The present study also challenges institutional policies regarding measures of dropout risk as means to prevent dropout, that is, improvement suggestion 5, each institution should create means to assess dropout risk per student at an early phase. This is one of the main focus of Institutional quality – the support given to students (Siddapuram, Devika, & Bonkuri, 2024).

Although this study was focused in a specific HEI that teaches engineering in Portugal, it can be argued that these conclusions could be useful for other fields of study. The main argument of this assumption is related with figures of dropout in Portugal (Mendes et al., 2016; Engrácia & Baptista, 2018, EDUSTAT,2021), which are clearly very far from zero

in all fields of study. The second reason relates with the academic adrift that was identified for more than half of our sample, and is also a problem in all other fields of study as shown by official statistics of Portuguese Government (Engrácia & Baptista, 2018). Finally, one can argue that crisis situations, being economic, pandemic or other, will be firstly felt at an individual level, by those who are in more fragile environments, as this study highlighted.

What needs to be done to reduce dropout in the future? In addition to measures proposed previously, namely concerning better information related to programmes and professional profiles, or personalized economic and academic support (Vossensteyn et al.,2015), it seems to be important that institutions relate studies conducted on transitions in order to prepare students and reduce dropout.

Acknowledgment

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