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The interrupted journey: factors and processes related to withdrawal, re-enrolment and dropout from doctoral education

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Abstract
Withdrawal from doctoral education has been recognized as a problem with negative consequences for different actors, leading researchers worldwide to explore its underlying factors and processes. However, even if many PhD candidates who withdrew intend to re-enrol, there is a gap in the literature regarding the factors and processes related to re-enrolment. The aim of this qualitative study is to understand pre- and post-withdrawal experiences of PhD candidates and the factors and processes related to withdrawal, dropout and re-enrolment, through the voices of PhD candidates who withdrew and faculty in social and health sciences in a Portuguese university. Our findings conceptualize withdrawal as a behavioural manifestation of disengagement processes comprising interacting emotional/affective, cognitive, and behavioural dimensions, which start before withdrawal, extend beyond it, and may culminate in dropout or re-engagement and re-enrolment. Factors and processes related to withdrawal, dropout, or re-enrolment were situated in various nested contexts. This study highlights the need for an academic cultural change, to envisage withdrawal as a process that does not necessarily mark the end of PhD candidates' incursion into doctoral education. It draws attention to the need to provide adequate working conditions for PhD candidates, and also to promote follow-up and communication with PhD candidates who withdrew.

Keywords Doctoral Education · Disengagement · Withdrawal · Dropout · Re-enrolment · Completion

Introduction

Withdrawal from doctoral education (DE) has been recognized as a problem with negative consequences to PhD candidates, faculty, departments, higher education institutions (HEI) and society (Lovitts, 2001). Besides the negative effect on career prospects, PhD candidates who withdrew may experience a decrease in self-esteem and self-confidence, a sense of personal failure, disappointment, or depression (Lovitts & Nelson, 2000). Furthermore, withdrawal from DE may entail a waste of time, efforts and resources from PhD

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candidates, faculty and HEI, and deprive society of the potential contribution of the knowledge and talent that goes undeveloped (Lovitts, 2001).

Previous research found DE completion rates of 66% in Europe (six-year cumulative completion rate) (Hasgall et al., 2019), and 70% in the United States of America (ten-year cumulative completion rate) (Council of Graduate Schools, 2008) and Australia (nine-year cumulative completion rate) (Torka, 2020). Over recent years, PhD completion rates have increased in Europe (Hasgall et al., 2019) and Australia; however, many DE reforms have been only partly successful, considering the remaining differences between disciplines, institutions and student cohorts (Torka, 2020).

Concerns about withdrawal have led researchers worldwide to explore the multiple different factors and processes which may lead to withdrawal from DE (McAlpine et al., 2020); nevertheless, even if previous research found that at least some PhD candidates who withdraw intend to re-enrol after a stop-out (Matias, 2013), there is a gap in the literature regarding post-withdrawal experiences of PhD candidates and the factors and processes related with re-enrolment or dropout.

The aim of this qualitative study is to understand the pre- and post-withdrawal experiences of PhD candidates and describe the factors and processes which may foster or hinder withdrawal, dropout and re-enrolment. The study approaches withdrawal as a behaviour occurring within longitudinal and dynamic processes of disengagement which continue beyond the cessation of enrolment and may culminate in a (definitive) dropout or proceed to re-engagement and re-enrolment. In accordance with Harvey et al. (2017, p. 52), PhD candidates who withdrew are perceived "as partial completers and prospective new students, rather than lost to higher education forever". In this sense, withdrawal will be defined as the interruption of the enrolment in DE on the PhD candidate's initiative (e.g., cancellation of enrolment in the middle of the academic year, or non-renewal of enrolment without having completed the PhD). Withdrawal may be only temporary if the PhD candidate re-enrols after a period of stop-out or it may be definitive if the PhD candidate never re-enrols again (dropout). At the university where this study was carried out, PhD candidates who withdrew can apply for re-enrolment through an annual call, which is not restricted to numerus clausus. However, they may be required to take additional curricular units (e.g., if the syllabus has changed) or make changes to their research project and/or supervising team. For the purpose of this study, if, at the moment, the PhD candidate is convinced that s/he will not re-enrol in the PhD and if s/he does not continue working on his/her PhD research project or maintain any PhD related contact with the supervisor and/or the research context, we consider that it is a dropout.

In addition to contributing to filling the aforementioned literature gap, the discussion of findings from this study can generate clues to improve the experiences of PhD candidates, prevent withdrawal, and favour re-enrolment of those who withdrew, potentially contributing to an increase in DE completion rates.

Factors and processes related to withdrawal and completion in DE

Through a qualitative systematized review of research, McAlpine et al. (2020) described a set of factors and practices that may influence PhD retention, satisfaction, and completion, based on the integrative model of nested contexts. This model describes doctoral trajectories and the actions of different actors as occuring within multiple nested contexts which influence each other, with more direct influence between close contexts than

between contexts further apart. The PhD candidate-supervisor context is the central context in which PhD processes occur. This context is nested within the departmental-disciplinary context, which is nested within the institutional context, which, in turn, is nested within the societal/supra-societal context (McAlpine & Norton, 2006). Previous research identified multiple factors and processes situated in different contexts which may have a cumulative and combined effect on withdrawal and persistence in DE (Larcombe et al., 2021).

In the societal and supra-societal contexts, it was evidenced that PhD completion is favoured by funding incentives for timely completion (Spronken-Smith et al., 2018), the attribution of funding (Sverdlik et al., 2018) or the requirement of the doctoral degree to access an academic career, a higher value placed on DE by employers beyond academia, or increased prestige of an academic career (Kyvik & Olsen, 2014).

In the disciplinary/departmental and institutional contexts, withdrawal may be exacerbated by lack of integration into the departmental structure or research groups (Castelló et al., 2017), a mismatch between expectations and experiences (Hardré et al., 2019) or low sense of belonging to the academic community (van Rooij et al., 2021). Conversely, appropriate resources and spaces (Lindsay, 2015), research training or close monitoring (e.g., annual progress meetings) may foster completion.

In the PhD candidate-supervisor context, withdrawal (or withdrawal intention) and completion may be related to PhD candidates, to supervisors, and to the interactions between them. Previous research concluded that withdrawal may be related to PhD candidates' financial stress, family or employment commitments (Larcombe et al., 2021), or mental health difficulties such as distress, depression or anxiety (Berry et al., 2022; Larcombe et al., 2021). Concerning supervisors' characteristics/conditions and supervising interactions, withdrawal may be related to problematic supervising relationships (e.g., conflicts), a mismatch between the PhD research topic and supervisors' research (Maher et al., 2020), lack of initiative and interest, poor feedback from supervisors (Leijen et al., 2016) or insufficient contact and communication (Berry et al., 2022). On the contrary, completion may be fostered by PhD candidates' motivation, organization or emotional and financial support from family (Lindsay, 2015), supervisors' expertise (McAlpine et al., 2020), interest or commitment, regular supervising meetings (Leijen et al., 2016), constructive and timely feedback (Lindsay, 2015), or a good supervising relationship (van Rooij et al., 2021).

Underlying psychological processes related to withdrawal and persistence in DE

According to Bean and Eaton (2001), persistence (and withdrawal) in (undergraduate) higher education may be explained by underlying longitudinal psychological processes, which are influenced by individual factors and interactions with the academic and social contexts. Previous research on withdrawal and persistence in DE has been grounded in different theoretical perspectives and has focused on different psychological processes and interactions with the social and academic contexts.

For instance, Jaksztat et al. (2021) conceptualized the decision to withdraw as a rational choice depending on assessment of the costs and benefits of dropout/persistence, which was influenced by individual characteristics/conditions (e.g., parenting; previous academic grades) and academic socialization experiences. Other authors emphasized the role of PhD candidates' agency and self-direction factors such as outcomes expectation and self-efficacy (belief in self-ability to perform an action or achieve a goal) (Maher et al., 2020). Van

Rooij et al. (2021) drew on the mini theory of satisfaction of basic psychological needs from the self-determination theory to explain that withdrawal intentions may be influenced by unmet needs for competence (feeling successful), relatedness (connection, caring and feeling cared for by other people) and autonomy (volition and freedom) which were related to the supervision relationship and socialization experiences in academia. Castelló et al. (2017) concluded that the intention to withdraw was related to socialization/integration in the research context or lack of research resources, but also to a poor balance between work or personal life and doctoral studies, insufficient personal and research skills, decreased motivation and attribution of meaning to DE, or negative emotions and mental health problems (e.g., anxiety and depression) related to the demands of doctoral studies.

Other authors focused on the processes of engagement and disengagement from doctoral education. Most prevailing perspectives on higher education students' engagement conceptualize engagement as a multidimensional construct, comprising at least three dimensions: affective, cognitive, and behavioural (Chipchase et al., 2017; Wong & Liem, 2022). PhD candidates' engagement may be described as vigour, dedication and absorption (Pyhältö et al., 2023), while PhD candidates' disengagement may be understood as passivity, low energy, low involvement and inefficacy (Vekkaila et al., 2013). Although these processes may be considered opposite poles of the same continuum (Chipchase et al., 2017), other studies described PhD candidates' engagement (whose negative pole is lack of engagement) and disengagement as distinct processes related to different antecedents and outcomes which may co-exist (Long, 2013; Pyhältö et al., 2023; Wong & Liem, 2022).

Previous research identified different categories of disengagement in DE: inefficacy, cynicism, exhaustion/distress. Inefficacy was characterized by perceived insufficient work or effort, uncertainty regarding their research, discouragement to continue and low self-efficacy (Vekkaila et al., 2013; Virtanen et al., 2017). Cynicism was characterized by apathy, alienation from doctoral processes (Vekkaila et al., 2013), perceived lack of control, disinterest, and the feeling that DE had lost its meaning (Vekkaila et al., 2013; Virtanen et al., 2017). A third category of disengagement experienced by PhD candidates in behavioural sciences was defined by Vekkaila et al. (2013) as exhaustion, and described as overstrain, low energy, and sometimes full exhaustion and depression. In a study with PhD candidates in biological and environmental sciences, Virtanen et al. (2017) defined this third category as distress, characterized by anxiety, discomfort, mood disturbance (e.g., anguish or misery) and sometimes exhaustion, resulting from not knowing how to proceed. Experiences of disengagement occurred mainly in the context of struggles and conflicts, or lack of meetings and academic discussions within the scholarly community, time management problems and difficulties to maintain a balance of work with family and doctoral studies, competing interests, tensions in the supervisory relationship and problems in the research process (Vekkaila et al., 2013; Virtanen et al., 2017) which generated perceived misfits between the PhD candidates and the academic context (e.g., alienating and overly controlling environment, or lack of competences to meet the requirements) (Vekkaila et al., 2013).

These studies contribute to an understanding of withdrawal as a behaviour explained by underlying longitudinal psychological processes; however, even if there is some evidence that many PhD candidates who withdrew intend to re-enrol after a period of stop-out (Matias, 2013), there is still a literature gap regarding the experiences and psychological reactions after the cessation of enrolment or the factors and processes related to re-enrolment in DE. In fact, only a few studies addressed re-enrolment in (undergraduate) higher education. Harvey et al. (2017) studied the re-recruitment of students who withdrew from Australian higher education, concluding that their decision to return was influenced by career advancement, job opportunities and/or encouragement from friends

and families; nevertheless, participants considered that HEIs should provide more information about re-enrolment and engage in specific follow-up communication with students to encourage re-enrolment.

The context of the study

Over recent decades, DE in Portugal has become more massified and democratized with the number of PhDs completed in the country increasing from 232 in 1998 to 2080 in 2021 (Fundação Francisco Manuel dos Santos, 2022).

DE is aligned with the Bologna Declaration principles and structured in study programmes with an expected duration of three or four years. PhD candidates may be enrolled full-time or part-time (extending the expected duration of the PhD). Most programmes encompass a teaching component occurring mostly in the first year, and the remaining years are dedicated to research and scientific writing. The annual PhD tuition fee usually varies between €2500 and €3000 (OECD, 2019), however, at the university where this study was carried out, the value of the tuition fee for national PhD candidates enrolled in full-time can range between less than €3000 and up to more than €5000 (although different values may be established for international or part-time PhD candidates).

The main funding source for PhD candidates are scholarships awarded by the Fundação para a Ciência e a Tecnologia (FCT), which include tuition fees, a monthly stipend and financial support for research-related expenses. The number of PhD scholarships awarded by FCT increased substantially from nearly 850 per year in the decade 1994–2003 to 2030 in 2007; however, following the economic crisis of 2008, the number of scholarships decreased to as low as 685 in 2013 (OECD, 2019), increasing to 1450 in 2023 (Fundação para a Ciência e a Tecnologia, 2023). The application to PhD scholarships is highly competitive and many PhD candidates hold non-academic full-time jobs, bearing the PhD-related expenses (e.g., tuition fees).

Although the employment rate for PhD holders can be considered high (95% in 2020) (Direção-Geral de Estatísticas da Educação e Ciência & Divisão de Estudos e de Gestão do Acesso a Dados para Investigação, 2021) career prospects for PhD holders in academia (their main employer) are often precarious with limited career progression and opportunities beyond academia seem to be insufficient or unattractive (Organization for Economic Cooperation and Development [OECD], 2019).

Regarding withdrawal, even if the national attrition rate from DE is unknown, some HEIs provide data on their completion rates. For instance, Costa et al. (2015) found that the proportion of PhD candidates who withdrew from the University of Évora increased from 12.2% to 2011/2012 to 42.2% in 2014/2015.

Methods

The intention of this study is to explore the factors and processes related to withdrawal, re-enrolment and dropout from DE, including the plural perspectives of diverse actors of one Portuguese university, with the aim of answering the following research questions:

- How do former PhD candidates (FPC), supervisors and members of scientific and monitoring committees of PhD programmes (SMC[1]) conceptualize the psychological processes underlying withdrawal from DE?
- Which factors and processes may foster or hinder withdrawal and dropout from DE?
- Which factors and processes may foster or hinder re-enrolment in DE after a period of withdrawal?

Data was collected from June 2020 to January 2021, through twelve semi-structured interviews with FPC who withdrew from DE, seven focus groups (FG) with SMC, and six FG with supervisors from doctoral programmes in the areas of Social Sciences (SoSc) and Health Sciences (HeSc), from one of the largest Portuguese universities. Considering the restrictions on offline contact caused by the COVID-19 pandemic, data was collected online, using the Zoom platform.

Data collection with FPC involved semi-structured individual interviews, considering that withdrawal may be a sensitive issue and that we aimed to gain an understanding of the meaning attributed by individual actors (Amado, 2014). The interviews focused on motivations for PhD attendance, relevant experiences within DE, and particularly the experiences that have led to withdrawal and the emotions, feelings, thoughts, and behaviours that followed and were related to withdrawal. FPC were also asked about their intention/desire to re-enrol and the factors and processes which fostered or could have fostered or hindered their decision to re-enrol.

FG engaged three to six SMC or supervisors and fostered lively interaction between participants that allowed an understanding of shared and less consensual visions (Amado, 2014). The FG explored relevant experiences within DE, expected or desired outcomes of DE, and factors and processes that may foster or hinder them. The theme of PhD withdrawal spontaneously emerged in nine FG.

The selection of participants was made through the university's website or using the snowball sampling method. Participants were invited and informed about the objectives and methodology via e-mail, indicated their availability through e-mail or on an online calendar, and gave their informed consent. Anonymity, confidentiality, and data security were guaranteed.

The study included a total of 66 participants, 36 (55%) women, and 30 (45%) men, from 30 PhD programmes in SoSc (n = 10, corresponding to 27 participants) and HeSc (n = 20, corresponding to 39 participants), with different academic profiles: 30 SMC, 24 supervisors and twelve FPC who started their PhD programmes from 2010 or later and then withdrew.

By the time they were registered in DE for the first time, five FPC were aged between 20 and 29, four between 30 and 39, one between 40 and 49, and two between 50 and 59 years old. Three worked in HEIs (two faculty and one administrative staff) and nine worked in other sectors of activity, although three of them also worked in HEIs (part-time teaching or research activities). None of them received a PhD scholarship. Currently, two worked in higher education, and ten in other sectors. Eight FPC withdrew from DE in the last 5 years and four withdrew more than 5 years ago.

[1] The doctoral programmes included in this study are coordinated by a director, who is assisted by a scientific and a monitoring committee. The scientific committee is formed by the director, who presides, and two to four faculty members. The monitoring committee is composed by the director or, when applicable, co-director, who presides, and by one faculty member and two students of the doctoral programme.

FG and interviews were transcribed verbatim, and transcripts were sent to participants for validation. Data were analysed thematically (Braun & Clarke, 2006). Firstly, the transcripts were read carefully, and data were coded, with the support of the NVivo software. Secondly, coded data was reviewed in order to find areas of similarity and organize codes into emergent themes and sub-themes. Finally, the research team discussed and cross-checked the themes.

This study followed the ethical guidelines of the Portuguese Society of Educational Sciences (Sociedade Portuguesa de Ciências da Educação, 2014) and was approved by the Ethics Committee of the Faculty of Psychology and Education Sciences of the University of Porto.

Findings

Participants from this study described withdrawal as a behaviour which occurs within longitudinal processes of disengagement starting before withdrawal and extending beyond. Participants described pre-withdrawal disengagement experiences which have led or could lead to withdrawal, and post-withdrawal disengagement experiences which have culminated or could culminate in dropout or in re-engagement and in the decision to re-enrol. Disengagement experiences comprised emotional/affective, cognitive, and behavioural dimensions. Participants also described the factors and processes that led or could lead to pre-withdrawal and post-withdrawal disengagement or re-engagement experiences, which may be related to withdrawal, dropout, or re-enrolment.

Pre-withdrawal experiences of disengagement

Participants described three categories of disengagement experiences which have led or may lead to withdrawal: deprioritization; inefficiency; and alienation. PhD candidates may experience one or more categories of pre-withdrawal disengagement experiences with cumulative and interactive effects.

Experiences of deprioritization were related to challenging personal and/or professional life events and conditions, such as the birth of a child, health problems, death of a relative, financial stress (e.g., increase of household expenditure due to the purchase of a family house), or periods of increased professional workload (e.g., adjustment to a new employment, career promotion):

> Most of our students are people who have some other life, and that life is obviously the priority for them. It's their job, it's their family, etc., and the doctorate is nearly a hobby at some point. So, obviously it is often left behind (…). (P27, SMC, SoSc)

These circumstances may hamper a healthy balance between professional and academic activities and personal life and cause high levels of distress and exhaustion, prompting PhD candidates to prioritize the various dimensions and activities of their lives, realize that the PhD is not a priority and feel demotivated to persist:

> (…) the new professional challenge, which at an early stage, especially in the first year, absorbed me a lot, and… and I would say that it would be extremely painful for me if I had to force myself to go ahead with the studies that were planned in the project, right? My, my personal and family component would be left far behind, and I

was not willing to give that up, OK? Even because, because I had recently become a father and, so, I wasn't really willing to give that up either, so… (P106, FPC, HeSc).

Some participants also described deprioritization as loss of interest in the topic due to a career change or other life event, or loss of interest in DE due to low expectations of professional outcomes:

(…) my father was diagnosed with a serious oncological problem and died at the end of the year. So, in (year), I decided that I didn't care about the doctorate for anything, so I accompanied my father all that time, and then I left the doctorate (…). The subject stopped making sense to me. Those events made me look at that. I was wasting my time with something that didn't make any sense to me whatsoever. (P117, FPC, SoSc)

(…) I began to understand that (…) in terms of professional fulfilment, I wouldn't achieve my objectives and, therefore, let's say, that it would be just another book on the shelf. (P114, FPC, HeSc)

Inefficiency was described as perceived or expected failure to achieve the intended outcomes (e.g., research delays, underachievement in curricular units) or inability to make the best use of resources (e.g., financial investment in tuition fees, or time spent on research work) which led to the decision to withdraw. Some participants described this decision as rational or even a strategy to cope with difficulties, however, the decision to withdraw may have been affected by psychological processes and affects (feelings, emotions or moods) including decreased self-efficacy, demotivation, frustration, and sadness, which in turn were stimulated by perceived/expected failure:

I designed one… a thesis project too ambitious for the availability I had. (.) Then, this is a little motivational, as things become more and more stuck and stagnated, people also lose a little interest (…) and I was spending 2, 3 thousand euros, and I felt that the thesis was very stuck, and that was bothering me (…). I was in the phase of (data) collection, which was going to take time; it would be better to suspend it for 2 or 3 years and then resume. (P116, FPC, HeSc)

I applied several times for scholarships and projects etc. and, with time, this frustration accumulates. Eventually it may have been the cause, which is… that feeling of "I applied, it didn't work out, I applied, it didn't work out, I applied, it didn't work out" for the fourth… third or fourth time, and at some point, "Hey man, ok, stop, stop for a while". (P109, FPC, HeSc)

Experiences of inefficiency were attributed to institutional barriers to project approval or data collection, an overly ambitious project, problematic supervisory relationships, lack of resources (e.g., time; funding; financial resources to pay the tuition fees, or approval of an unpaid leave in order to be able to accept a scholarship), to a gap between the expectancies and reality of being a doctoral candidate, and/or to the perceived/real lack of competencies (e.g., research competencies; fluency in Portuguese and/or English):

(…) that person ended up dropping out, because there were, or, let's say, there were, in her background, language difficulties, difficulties to understand the language, either Portuguese or any other language, any other language that I mastered. (P47, Supervisor, SoSc)

Alienation was described as isolation, decreased endeavour/effort, the lack of a sense of belonging to the academic community and/or the belief that they may continue their

research without being enrolled (and re-enrol as soon as the project was further advanced, in order to avoid paying tuition fees). As exemplified below, these alienation experiences were attributed to a lack of structure (e.g., milestones and timings), poor integration in the research/academic context (mainly from the second year onwards) or insufficient support and monitoring from the supervisors and faculty:

> People give up, not formally, but they give up, because they don't pay enough attention, or because they don't deliver their work and the person (supervisor) doesn't bother him/her. If the person doesn't bother him/her, s/he doesn't deliver his/her work and (…) in the end, things don't work out. And of course, it's easy to say: "because the supervisor didn't supervise". It's easy to say: "because the student didn't work", isn't it? Because both things are right, isn't it? (P54, Supervisor, SoSc)
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> Because from the first to the second year, basically, namely with regard to supervision, it is… there is this formality but the connection to… to the service is lost. (….) As some difficulties arise, it becomes increasingly difficult to maintain a close connection, monitoring (…) And the idea… the initial idea kept growing: "I'll try to continue recruiting (participants) with the doctorate suspended and, eventually, when I have a number more or less close, I'll request re-enrolment and conclude". (P110, FPC, HeSc)

Due to perceived lack of structure, integration, support / monitoring, some FPC believed that the support that they received from the supervisors and the university was not worth the value of the tuition fees:

> I was also feeling that I was investing money there simply to be there, I mean, with the name, with the name in a table. In other words, I did not feel that I was… that I was rewarded, from the point of view of support (…). (P116, FPC, HeSc)

Although the three dimensions of pre-withdrawal disengagement were similarly described by FPC, SMC and supervisors, SMC and supervisors approached withdrawal more generally, relying on their interactions with their supervisees and other PhD candidates, while FPC described their personal experiences more deeply and focused more on emotional aspects. Furthermore, supervisors and SMC focused more than FPC on the lack of competencies/knowledge to succeed in doctoral education as a factor of experiences of inefficiency.

Post-withdrawal experiences of disengagement and re-engagement

FPCs were invited to describe the thoughts, emotions, feelings, and behaviours associated with withdrawal.

One FPC, who decided to withdraw due to other priorities, explained that instead of feeling frustrated or considering withdrawal as a failure, she felt proud of her academic and professional accomplishments and accepted withdrawal as her way of coping with exhaustion and feeling overwhelmed related with challenging life events:

> (…) I think that, in life, we have to make choices and so it was my choice, and I didn't f-… I didn't feel frustrated at all, in fact I honestly felt very good to have achieved what I achieved as far as I did, so (…) it was my choice to have other victories. (P108, FPC, HeSc)

However, despite the type of pre-withdrawal disengagement processes experienced by the other FPC, all of them described some negative or mixed emotions, feelings, and thoughts (simultaneously or throughout different stages). Negative emotions, feelings and thoughts included the perception of withdrawal as failure and fear of failing again, a sense of powerlessness and/or incapacity to overcome barriers to success, sadness, frustration, incompleteness, guilt, regret and pressure/shame from family, friends, and/or research participants. Positive emotions, feelings, and thoughts included a sense of relief (from feeling overwhelmed, distress, exhaustion and/or financial burden), indifference (because they had other priorities in life), or acceptance (because they considered that withdrawal was the best possible choice at the moment, or even a good strategy for dealing with research delays or overburdening). The following quotes illustrate mixed emotions, feelings, and thoughts experienced by PhD candidates:

> At the time I didn't care much, because of everything else. (…) Well, there was that phase of the… of some feeling of… of "you didn't get to the end", isn't it? A little mess with your sense of self-confidence, self-efficacy. Later. So not effectively at that time, because effectively at that time it was the least of my problems. (P117, FPC, SoSc)
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> It was a bit frustrating. I think that's the word. One feels that one has failed in some way. There was an investment for two years, and at the time, it seemed, "Hey, I'm not suited to this", that's what it felt like. "I'm not suited to this, I'm not tailored for an academic career, I'll try other things" (…) And then of course there was always that… every year I listened to family members saying: "So, have you re-enrolled yet? So, have you re-enrolled yet?" And then the frustration turns into a feeling of, I wouldn't say anger, but there's a feeling of "Hey, stop pressuring me! Stop pressuring me!" (…) Then it ends up being a snowball, a vicious circle, I mean, the more time goes by the more it grows this fear of… of enrolling again, because we think we can't keep up with the pace we've lost (…) but in fact it's a bit like that, after the initial frustration, I mean, that almost-anger, very focused, one of the things I realized was: "OK, at the time I was clearly not ready", and I'm at peace with that now (…) I'm very much at peace with that, and right now, okay, I'm starting again. (P109, FPC, HeSc)

Some SMC and supervisors pointed out that withdrawal may be more harmful for international students and scholarship holders:

> When they are foreign students who have… come here with scholarships, and with similar things (…) it becomes a more dramatic, more difficult journey, doesn't it? (P30, SMC, SoSc)

All FPC revealed that they had or have had the desire/intention to re-enrol in DE at a certain point (when they withdrew or later on): seven expressed the intention to re-enrol in the same PhD programme (five continued to develop their research work, expecting to re-enrol when it was more advanced and two have already established contact with the HEI/supervisor to re-enrol); one intended to re-enrol in a university abroad (where she expected to be awarded a research fellowship); one was already attending another PhD programme; two expressed some desire to re-enrol, but were not confident that they would meet the conditions; and only one said that he did not want to re-enrol now but he had that intention at the time he withdrew.

Participants described two processes of re-engagement which have led or could lead to the decision to re-enrol: re-prioritization and efficiency.

Re-prioritization was described as the process that brings the PhD back to the top of the priority list and depended or would depend on the change of the conditions which had previously led to deprioritization. As illustrated by the quotes below, these conditions may be related to an increased professional and/or financial stability, the improvement of work-life balance, the expectation of a positive career impact, or the fact that their children were older, however, as mentioned by P116, support and interest from friends and family can make FPC feel uncomfortably pressured, but it may also have a positive effect on the motivation to re-enrol:

> (…) the fact that my life is much more stable now, I have grown up children, I have a (working) team ah…. and I've waited to form that team, ah… and that's it, I feel that I have the conditions at this moment to… to re-enrol. (P108, FPC, HeSc)
> (…) sooner or later, I will have to do a doctorate if I want to keep any, any academic component which I have been doing for 10 years and which I would like to keep, and above all, I am already tired of answering questions like "How is your doctorate?" and not having finished (laughs). (P116, FPC, HeSc)

Efficiency was described as improved expectations of success to achieve the intended outcomes, improved self-efficacy and perceived ability to make the best use of resources. FPCs considered that expected efficiency would depend on change of the conditions that previously hindered the achievement of the desired objectives or the best use of resources. As illustrated below, these conditions may be related to research progress (e.g., finishing data collection, designing a new research project or getting the project approved):

> (…) I was trying to re-enrol in the third year only when I had the project almost approved (…) I needed the approval from the hospitals or the clinics (…). (P107, FPC, HeSc)
> I have the (data) collections done, so I am at the stage of processing the results, at the stage of cleaning (data) bases again and, that's it; I have to write the articles and publish them and, that's it. I am at this stage, and so I wanted to enrol now also to take some responsibility, to see if I can get there. (P116, FPC, HeSc)

Research funding was also mentioned by some participants as a requirement for re-enrolment, which would improve efficiency:

> They have now called me to join this project. By joining this project, if everything goes well (if I get a scholarship), I'm most likely to apply for a PhD again, maybe not here. It will then depend on my ec-, the economic situation that… that I have. (P115, FPC, SoSc)

Some participants also considered that increased expected efficiency would depend on personal and competence development, as expressed by P109 who wanted to attend a master's degree before re-enrolling in the PhD:

> I'm going to do a master's degree to try to understand, and even reinforce my… my… my academic path, to basically feel more secure and more mature to do a doctoral thesis. (…) I took this decision to reinforce my base of… of… of knowledge and academic training, to re-enter in two or three years, to re-enrol in the doctorate with a more balanced and more… more solid vision (P109, FPC, HeSc).

Some participants also mentioned that they would feel less cautious about re-enrolment if the tuition fees were lower.

FPCs also described some factors and processes which may foster the extension and intensification of post-withdrawal experiences of deprioritization, inefficiency and alienation which hinder and/or delay re-engagement and re-enrolment.

Post-withdrawal experiences of deprioritization were attributed to intense workload, career changes, social (e.g., political activities) and family responsibilities and projects (e.g., marriage), or the persistence of low expected professional impact, which kept reducing the interest in DE and/or in the research topic:

> (…) Then it comes the personal projects, doesn't it? Marriage, then having children (…) I only didn't do more because of the… that aspect, because of the financial issues at the beginning and now also because of lack of time, and because I am involved in many things (professionally), (…) with all the demands I have, it becomes difficult. (P113, FPC, SoSc)

Inefficiency was mainly sustained by financial stress, the persistence of barriers to research progress, low self-efficacy, or to low motivation for the effort and abnegation previously perceived as required to manage academic and professional responsibilities:

> (…) There would have to be great availability, not only in terms of time, but also in terms of… of, of predisposing myself to the effort, wouldn't there? And to the evenings and the overtime and the weekends working. (P112, FPC, SoSc)

Over time, experiences of alienation were reinforced due to the post-withdrawal detachment from the academic community, the weakening of the supervising relationship, interruption or procrastination and lack of progress in research work or by the belief that the support from the university is not worth the high value of the tuition fees:

> The problem is to stop. And when you stop, it's very hard to restart (…) For some time I seriously considered re-enrolling, but not at the moment. (…) I realized that, unless there is a big change or I could organize this in a totally different way, it would be impossible to carry this through. (P110, FPC, HeSc)
>
> It would be important, and advantageous, and many people would rethink coming back if there was this lowering of tuition fees and more… more attractive conditions for payment (…) Or if, in fact, students would feel that what they pay in tuition fees is rewarded in some way, in another… another type of support, right? (P113, FPC, HeSc)

The FPC who was already enrolled in another PhD programme explained that her decision to change was mainly motivated by communication difficulties and lack of support and interest from the university when she tried to initiate the re-enrolment process:

> I contacted the president of the board to explain that I was interested in resuming my doctorate (…) And she answered me that, yes, there was no problem at all, but for political reasons, I should speak firstly with the supervisor (…). So, I send a second email to the supervisor, ah… but she still didn't answer me. So, if some don't answer and others are there with political issues, I'm not going to bother anymore! (P117, FPC, SoSc)

Discussion

This study explored conceptualizations about withdrawal and the factors and processes which may foster or hinder withdrawal and re-enrolment in DE, considering the perspectives of faculty and PhD candidates who withdrew from doctoral programmes in HeSc and SoSc in one of the largest Portuguese universities.

Although other authors have previously pointed out the longitudinal character of the withdrawal process (Bean & Eaton, 2001; Maher et al., 2020), and the need to engage in re-recruitment strategies (Harvey et al., 2017), most studies have focused on the factors and processes at the individual, supervisor-supervisee relationship, departmental, societal and/or supra-societal level leading to withdrawal or persistance (McAlpine et al., 2020; Sverdlik et al., 2018), tending to place withdrawal in an end-of-the-cycle position. On the contrary, this study conceptualized withdrawal as a behavioural dimension of longitudinal processes of disengagement which start before withdrawal, extend after withdrawal, and may ultimately lead to dropout or to re-engagement and re-enrolment.

Similarly to previous research, this study identified three types of experiences of disengagement (Vekkaila et al., 2013; Virtanen et al., 2017) which may lead to withdrawal and include emotional/affective, cognitive and behavioural dimensions (Chipchase et al., 2017). Experiences of inefficiency identified in this study were similar to the experiences of inefficacy identified by Vekkaila et al. (2013) and Virtanen et al. (2017), but they were defined as inefficiency and not inefficacy because disengagement was not only related to perceived/expected failure, but also with PhD candidates' perception that they were not making the best use of resources such as time or money invested in tuition fees. Instead of cynicism, our study identified experiences which were better conceptualized as deprioritization and alienation from HEI. Exhaustion and distress were also experienced by FPC; however, these were described as emotional/affective dimensions common to the three types of disengagement experiences. These differences may be explained by the fact that, unlike this study, participants from the studies of Vekkaila et al. (2013) and Virtanen et al. (2017) were PhD candidates who were disengaged but still enrolled.

Similarly to Matias (2013), FPC revealed that they have or have had the intension/desire to re-enrol after a period of withdrawal. Furthermore, some participants were already experiencing processes of re-engagement which were described as re-prioritization and/or efficiency: some continued their research work while they were not enrolled, and some were already actively starting the process of re-enrolment. This reveals that, for some PhD candidates, withdrawal may be a coping strategy to deal with difficulties throughout the doctoral process and does not imply that they have given up their doctorate.

Although some participants may have firstly explained their decision to withdraw, re-enrol or dropout as a rational choice (Jaksztat et al., 2021), our findings evidence that this decision and the actions implemented in order to do it are also influenced by self-direction factors (e.g., motivation, self-efficacy, expectations of outcomes) (Maher et al., 2020) and emotions (e.g., distress, exhaustion, frustration, sadness) (Bean & Eaton, 2001; Castelló et al., 2017). This highlights the relevance of the affective dimension of disengagement/re-engagement and evidences interactions between the cognitive, emotional/affective and behavioural dimensions. Nevertheless, despite the negative impact that withdrawal may have on different actors (Lovitts, 2001), this study also revealed that emotional reactions to withdrawal were not necessarily damaging as it may be considered the right personal choice under certain conditions, and not necessarily connoted as negative.

Data from this study also draws attention to the interplay between psychological well-being (and mental health) and PhD experiences and outcomes, confirming that mental health problems and withdrawal are related (Berry et al., 2022; Larcombe et al., 2021): frustration, anxiety, distress or sadness, which may indicate an impoverishment of PhD candidates' mental health and psychological well-being may foster disengagement withdrawal; but disengagement and withdrawal also seem to have a detrimental effect on mental health and psychological well-being.

In accordance with the model of nested contexts (McAlpine et al., 2020; McAlpine & Norton, 2006), our findings also revealed that factors and processes which may foster or hinder disengagement, possibly leading to withdrawal and dropout, and factors and processes which may foster or hinder re-engagement, possibly leading to re-enrolment, may be situated in different contexts: the PhD candidate-supervisor context (e.g., conflicting supervisory relationships), the departmental-disciplinary or institutional context (e.g., integration in the research-academic context), and/or in the societal-supra societal context (e.g., funding which is influenced by funding policies). Moreover, these results suggest that some factors and processes are situated only within one context (e.g., competencies and personal and professional life events and conditions are mostly situated within the PhD candidate context); others are situated within multiple contexts (e.g., design, approval or progress of the research project may depend on the actions of PhD candidates, supervisors, departments, higher education institution and/or organizations where the data will be collected). Our results confirm the central role of supervisor-supervisee interactions. In accordance with previous research, withdrawal was related to supervisors' lack of interest and insufficient support and monitoring (Berry et al., 2022; Leijen et al., 2016; Lindsay, 2015). This was particularly salient in the processes of pre- and post-withdrawal alienation, however, it is possible to hypothesize that a good relationship, adequate feedback, support and encouragement from supervisors could hinder pre-withdrawal perceived inefficiency and deprioritization and foster post-withdrawal re-engagement. However, these results also suggest that greater relevance should be attributed to the individual (PhD candidate) factors and processes (e.g., pre-entry competencies, emotional processes, mental health), which are apart from the context of the interaction between the supervisor and the supervisee.

Some of our findings may be considered particularly alarming. Despite the claim that PhD candidates should be recognized as professionals contributing to the creation of knowledge, with commensurate rights (Eurodoc, 2012), many participants expressed financial difficulties in paying for PhD attendance, i.e., to pay for their professional contribution, as early-stage researchers, to scientific advancement. Moreover, the perception expressed by some FPC that they may continue their research without being enrolled in a PhD programme is also quite alarming, because what they receive from the university is not relevant or not worth their investment in tuition fees. Another alarming finding is the perception of an absence of relevant professional outcomes for PhD holders. Finally, it is also alarming to confirm the negative effects that PhD experiences may have on PhD candidates' mental health and psychological well-being. These findings draw attention to the need to seriously approach research work undertaken by PhD candidates as a professional (part-time or full-time) activity; if it is approached as such, adequate working conditions need to be provided, namely regarding research funding (including funding options for PhD candidates who do not wish to interrupt their professional activity) and training. Furthermore, it would be important to distinguish autonomy development and academic freedom, from isolation and lack of support, providing organizational and particularly supervision practices which foster PhD candidates' integration, success and well-being.

Furthermore, the need to provide adequate training, support and integration is also spotlighted by the evidence that withdrawal may be related with low proficiency or perception of proficiency (self-efficacy) in relevant competencies, demotivation, and unpleasant psychological states. It would be important to insist on the promotion of healthy and friendly working contexts, the availability of support services, and the training of PhD candidates and faculty in order to identify and mitigate this problem.

Our findings also highlight the hard struggle of some PhD candidates to maintain a work-life balance (Castelló et al., 2017), and a gap between their expectancies and their experience in DE (Hardré et al., 2019). This points to the pertinence of joint efforts among higher education institutions and other employers to improve PhD candidates' experiences and outcomes, despite the need to promote realistic expectations regarding PhD attendance.

In consonance with Harvey et al. (2017), an academic cultural change would be needed, so that withdrawal can be conceptualized as a process that does not necessarily mark the end of PhD candidates' incursion into DE. Follow-up communication with PhD candidates who withdrew can be promoted, providing information and encouraging them to re-enrol.

Some limitations may be pointed out in this study, namely not including other actors, such as scholarship holders who would eventually experience PhD candidacy differently from PhD candidates who have a professional activity and for whom the consequences of withdrawal may be more severe. Although the Portuguese higher education system may have characteristics in common with other contexts, some findings need to be contextualized. For instance, the relevance attributed to the value of tuition fees in the decision to withdraw and re-enrol may not be found in contexts where no tuition fees are charged to PhD candidates or where the value of the tuition fees represents a lower burden on the family budget. Further research would also be necessary to explore the interactions between engagement/lack of engagement, disengagement and withdrawal given that these are different constructs which may be related to different factors and outcomes and may have an effect on each other (Long, 2013; Pyhältö et al., 2023; Wong & Liem, 2022).

Further research will be needed to include the voices of other actors, namely scholarship holders or international PhD candidates who withdraw, or to create knowledge about how higher education institutions may prevent withdrawal and promote re-enrolment of PhD candidates who withdraw.

Nevertheless, this study presents a significant contribution to understanding withdrawal and re-engagement in DE, through the voices of different actors. To begin with, this study does not consider withdrawal (cessation of the enrolment) as dropout. Instead, the study develops a conceptualization of withdrawal as a behavioural manifestation (and for some PhD candidates a coping strategy) of disengagement, comprising interacting emotional/affective, cognitive, and behavioural dimensions, which start before and extend beyond withdrawal and may culminate in dropout or re-engagement and re-enrolment. Besides identifying factors and processes, situated in various nested contexts and related to pre-withdrawal disengagement experiences and withdrawal, the study addresses post-withdrawal experiences of disengagement and re-engagement and identifies emotions, feelings, thoughts, and behaviours. It describes factors and processes related to (definitive) dropout or re-engagement and re-enrolment, and thus contributes to filling a gap in the literature regarding a topic with both theoretical and practical relevance.

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Declarations

The project followed the ethical guidelines of the Portuguese Society of Educational Sciences (SPCE 2014). All participants were informed about the study aims, and informed of their right to withdraw their consent at any point. Anonymity, confidentiality, and data security were managed and controlled. The participants were asked for permission to be recorded and quoted in forthcoming publications. All identifying information (e.g. employer) has been removed from participants' cited responses.

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