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Doctoral Student Attrition Among All-but-Dissertation Students: A Case Study in the Doctor of Information Technology Program

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Abstract:

This study sought to understand the experiences of All-but-Dissertation (ABD) students that led them to withdraw from a Doctor of Information Technology (DIT) program. A total of 27 students from three Philippine universities were interviewed using a semi-structured format. Results show that most participants were driven by extrinsic motivations and viewed graduate education as a pathway to a better life. The challenges they faced were both internal and external in nature (e.g., study-work conflicts and personal problems), which are comparable to those in other disciplines. Most reasons (e.g., limited research experience and dissertation anxiety) for dropping out from this professional doctorate align with findings from studies on Doctor of Philosophy (PhD) programs. However, two reasons unique to ABD students in the DIT program were the inclusion of software development and the selection of computing research topics. Overall, these findings provide empirical evidence for addressing issues related to dissertation delays, prolonged doctoral completion times, and attrition in graduate education. Practical and managerial implications derived from this study could inform graduate school policies and practices, with potential applications across other doctoral disciplines.

Keywords:

Student Attrition, Case Study, Information Technology, Graduate Education, Professional Doctorate, All-But-Dissertation

INTRODUCTION

Student attrition, defined as the cessation of individual student membership in an institution (Bean, 1980), has been one of the most prominent challenges in education at all levels (Lee-St. John et al., 2018; Momo et al., 2019). Various studies worldwide have underscored this issue as particularly concerning in doctoral education. For instance, Young et al. (2019) reported that 36–51% of doctoral students across various fields in the United States leave their programs before earning their degree. In a European context, Castelló et al. (2017) found that one-third of doctoral students who were still enrolled had contemplated withdrawing from their programs. Attrition rates vary widely depending on discipline, institution, and region, and can reach as high as 70% in some fields (Jones, 2013). Despite the compelling personal reasons some students cite for leaving their doctoral programs (e.g., family obligations, financial difficulties, and attractive job opportunities), this educational crisis has far-reaching consequences for students, institutions, and society. Empirical evidence indicates that doctoral attrition leads to lower self-esteem and diminished employment opportunities for students, wasted institutional resources and financial burdens, as well as concerns about the future vitality of academic disciplines and the competitiveness of societies (Jaksztat et al., 2021; Litalien & Guay, 2015; Wollast et al., 2023). The high attrition rate among doctoral students and its repercussions underscores the urgency and importance of investigating why students fail to graduate on time or at all.

Various predictors of doctoral success have been categorized by van Rooij et al. (2021) into institutional factors, supervision-related experiences, and individual student characteristics. However, Burkard et al. (2014) theorized that the high attrition rate in doctoral programs is also linked to the difficulties in completing a dissertation. This conjecture has gained prominence with the increasing number of All-but-Dissertation (ABD) students (Hanson et al., 2020)—students who have completed their coursework and passed comprehensive exams but have yet to complete and defend their dissertations. The term is predominantly used in the United States and other countries where coursework is traditionally part of the standard Doctor of Philosophy (PhD) pathways. It is also applicable to professional doctorates globally, where coursework is typically a requirement. Consequently, it is reasonable that the experiences of ABD students would attract empirical interest to address issues such as dissertation delays, prolonged time to degree completion, and attrition in graduate education. Surprisingly, little research exists on this topic. Burkard et al. (2014) sought to fill this gap but focused on doctoral graduates rather than ABD students as participants. In a more recent investigation, Hanson et al. (2020) recruited at-risk-for-completion candidates but centered their study on an intervention project. These ABD students were also enrolled in an Educational Leadership doctoral program at the time of the study. Therefore, the doctoral experiences of ABD students who have stopped or withdrawn altogether from their programs remain underexplored and warrant further in-depth investigation.

Doctoral attrition is a persisting issue observed globally across various disciplines, including Science, Technology, Engineering, and Mathematics (STEM) fields (Lott et al., 2009; Saloma, 2020; Satterfield et al., 2018). STEM doctoral programs are an important focus for

attrition research due to their critical role in advancing scientific knowledge, promoting technological innovation, and driving economic growth. Information technology (IT) is a STEM area that has become increasingly important in recent years due to the rapid growth of technology. A graduate degree in this field, such as a Doctor of Information Technology (DIT), consequently plays a prominent role at the forefront of technological innovation and development. The DIT is a professional doctorate designed to equip candidates with both technical and academic knowledge and skills to assume leadership roles in the IT sector. Unlike traditional PhD programs, which emphasize theoretical advancements and contributions to academic knowledge, professional doctorates prioritize the integration of research into practical applications. Programs like the DIT often require students to develop artifacts, such as software systems and other practical solutions, as a core component of their dissertations. While student attrition in PhD programs has been widely studied (e.g., Jaksztat et al., 2021; Young et al., 2019), this degree remains underexplored despite the increasing prevalence of doctoral attrition in IT disciplines. According to Burmeister (2015), graduate degrees in IT have the worst completion rates among professional doctorates. Therefore, examining the doctoral attrition problem in this academic domain is crucial to ensure the continuous production of IT professionals.

The purpose of this study was to understand the experiences and events that led ABD students to drop out of the DIT program. With doctoral attrition being a persistent issue in STEM fields, this study examines the DIT program to provide a distinctive perspective on this challenge. In the Philippines, while the term ABD is not commonly used, the structure of doctoral programs aligns with that of the United States, where coursework is a standard component of both PhD and professional doctorates. Moreover, the DIT was chosen over a PhD in IT due to its broader availability in the Philippines and the relative lack of research on professional doctorates compared to traditional PhD programs. Fink (2006) argued that professional doctorate programs hold the same importance as PhD degree programs, as both are crucial to the emerging knowledge economy. This topic is consequently of concern to doctoral students, faculty members, graduate schools, granting agencies, and governments, all of whom invest substantial time, money, and effort in this endeavor. Understanding why some graduate students depart without completing their degrees is essential to improving student success, persistence, graduation rates, and the overall quality of doctoral programs. Saloma (2020) cautioned that retaining current practices in the training of doctoral students will perpetuate low graduation rates. This scenario is particularly concerning for countries that produce fewer doctoral graduates, as a well-educated population is necessary to maintain global competitiveness and support national development (Ruud et al., 2016). Unfortunately, there is a paucity of research exists regarding doctoral attrition in non-US nations (Jaksztat et al., 2021). As scholars continue to refine graduate student retention models, the findings of this study may provide significant and unique insights to help address the needs, concerns, and circumstances of ABD students enrolled in a DIT program.

LITERATURE REVIEW

Graduate Education

In today's knowledge-based economy, the global marketplace is seemingly allocating a premium value to advanced skills and knowledge. The new form of global competition for attracting highly skilled and educated talents consequently views graduate education as a key facet in manufacturing a high-caliber workforce (Hancock et al., 2017). From a macro perspective, the remuneration of graduate education extends beyond supplying the workforce for the global economy. Societies also benefit in many ways when the population is highly educated (Casey, 2009; Council of Graduate Schools, 2008). Compared to individuals who have not pursued graduate education, holders of advanced degrees generally earn higher incomes that consequently lead to higher taxes. They are also less reliant on government financial assistance, which reduces the burden on public resources. The increased workforce flexibility that comes with holding an advanced degree also benefits society by providing a more agile and adaptable workforce that can respond effectively to changing market demands and industry disruptions. For individuals, having a master's or doctoral degree means higher lifetime earnings (Mertens & Röbken, 2013), sustained employment (Germain-Alamartine, 2019), personal and professional mobility (Lešer et al., 2018), greater productivity (Simister, 2014), and improved quality of life (Bryan & Guccione, 2018; Elsey, 2007). Consequently, more students worldwide are pursuing graduate degrees.

Doctoral Experience

Despite the abundance of doctoral students willing to complete their postgraduate degrees, a significant number are unable to finish their programs (Saloma, 2020; Yudkevich et al., 2020). Identifying the underlying causes of doctoral student attrition is consequently crucial to developing mitigating strategies. Sverdlik et al. (2018) noted that research has predominantly focused on the doctoral experience to better understand the issue of attrition in doctoral education. In this context, doctoral experience includes a range of academic activities such as completing coursework, conducting original research, writing a dissertation, and defending the research before a panel of experts. They classified the contributing factors that influence doctoral experience as both internal and external in nature. Accordingly, the most notable internal factors were motivation (Geraniou, 2010), academic identity (McAlpine et al., 2009), and writing competencies (Aitchison et al., 2012). In contrast, the most prominent external factors were personal and social lives (Levecque et al., 2017), financial opportunities (Nabolsi et al., 2014), departmental support and socialization (Dericks et al., 2019), and supervision (Gube et al., 2017). Kelley and Salisbury-Glennon (2016) emphasized that these factors and other drivers are associated with the conception of the ABD phenomenon. The literature on doctoral students with ABD status is still limited, but Liao et al. (2009) regarded it as a critical stage since much of the attrition from doctoral programs occurred after coursework or during the dissertation phase. Therefore, the doctoral experience with a particular emphasis on the ABD phenomenon is worth exploring to ensure the timely completion of dissertations leading to a postgraduate degree.

Dissertation Noncompletion

The pursuit of a doctoral degree is anticipated to result in an independent and innovative research output, usually in the form of a dissertation. Unfortunately, many students perceive dissertation writing as one of the most challenging tasks in doctoral education (Sükan & Mohammadzadeh, 2022). This undertaking demands students to engage in written and verbal displays of comprehension, higher-order demonstrations of research skills, and a substantial amount of dedication and commitment. There is also an emerging trend among several countries to advocate for the publication of a dissertation as a prerequisite for fulfilling doctoral requirements (Yudkevich et al., 2020). Meeting the publication requirement can be challenging, particularly in cases where the doctoral student's advisor is not actively publishing in international journals or if the student faces difficulties due to language barriers (Gao, 2021). Burkard et al. (2014) speculated that the high attrition rate in doctoral programs is associated with difficulties in dissertation completion. The increasing number of ABD students, as well as those who dropped out of the program during dissertation writing, supports this conjecture. Burns and Gillespie (2018) examined why students discontinued their doctoral programs while working on their dissertations. They discovered that changes in feelings of autonomy and relatedness after starting their dissertation journey made it difficult for students to persist. Other than their study, there seems to be limited research on what led students to withdraw from a graduate program during the dissertation phase. The paucity of research studies contextualized in the DIT program likewise presents a gap in this knowledge area. As it is one of the final requirements in doctoral education, factors inhibiting dissertation completion should be a research priority.

Doctoral Attrition in the Philippines

Over the years, various strategies have been implemented to counter doctoral attrition, including establishing shared responsibility and commitment, improving communication between faculty members and students, and providing institutional and departmental services for all stakeholders (Lim et al., 2019; Nabolsi et al., 2014). In the Philippines, the Department of Science and Technology (DOST) partnered with selected higher education institutions (HEIs) to initiate the Advanced Science and Technology Human Resource Development Program (ASTHRDP) and the Engineering Research and Development for Technology (ERDT) program in 2007. The central goal of ASTHRDP and ERDT is to produce STEM doctoral graduates by leveraging shared faculty and laboratory resources and offering generous scholarships. In their first decade of implementation, it was reported that only 373 out of 662 (56%) and 129 out of 268 (48%) doctoral graduates were produced by ASTHRDP and ERDT, respectively, from 2007 to 2018 (Saloma, 2020). The attrition rate in the Philippine context reflects similar challenges observed globally (e.g., Castelló et al., 2017; Young et al., 2019). These findings also confirm the dramatic underproduction of doctoral degree holders in several lower- and middle-income countries (Yudkevich et al., 2020). This consistent trend highlights the urgent need for targeted interventions and policy reforms to address the persistent barriers to doctoral completion.

METHODS

Research Design

This study is a qualitative investigation exploring doctoral student attrition among ABD students in a DIT program. According to Bogdan and Biklen (2007), qualitative inquiry is ideal for examining complex issues and exploring human experiences. This approach was selected because it enables the study of phenomena in their natural settings, which are otherwise difficult to understand through quantitative research methods (Schwandt & Gates, 2017). For this study, the phenomenon in question was doctoral student attrition and the events surrounding its occurrence. As the focal point of investigation was bounded by status and program, a case study design was employed. Stake (1995) described the case study research design as a strategy for empirical inquiry in which the researcher profoundly explores a case—a unit that can represent anything (e.g., a person, decision, process, activity, action, or event). In this study, the case was ABD students who dropped out of a DIT program. Finally, this qualitative case study research embedded an emergent design flexibility to permit interaction between different strands of data at various points throughout the investigation (Creswell & Clark, 2011). As this design welcomes unanticipated information, it allows the researcher to adapt as deeper understandings emerge.

Setting and Insider Position

Participants for this qualitative case study were purposefully sampled from ABD students who had left (temporarily or permanently) a DIT program. They were recruited from three different private HEIs located in Metro Manila, Philippines. These institutions advertise the DIT program as a semester-based course that can be completed within a period of three to four years. While there is some variation in coursework unit requirements across these HEIs, all mandate students to complete a minimum of 12 units of dissertation courses. Additionally, these institutions encourage their doctoral students to publish their dissertations either before or after graduation. The researcher is one of the first two DIT graduates of their batch from one of these HEIs, which had more than 30 doctoral students enrolled during their first semester of dissertation writing in 2019. Being an insider to the population under study presents both advantages and challenges. Bonner and Tolhurst (2002) identified three significant benefits of being an insider researcher: a deeper understanding of the culture under investigation, the ability to avoid disrupting the natural flow of social interactions, and an established connection that encourages truthful revelations. However, challenges also exist, including issues of familiarity between the interviewer and interviewee, power dynamics, trust-related concerns, and other practical barriers. Despite these potential impediments, sufficient literature supports the viability of insider research (Elizabeth Aburn et al., 2021; Fleming, 2018; Kitchen, 2019). To address these challenges, Byrne et al. (2015) recommended strategies such as using double consent forms, training the interviewer, and establishing positionality.

Sampling Procedure

The target participants were invited via email or social media. DIT students from other schools who were not personally known to the researcher received email invitations. In contrast, participants personally known to the researcher were contacted through direct messaging. Invitations were also sent to social media group chats (e.g., a community of DIT students) where the researcher was a member. To be eligible, participants had to meet the following criteria: they must have been enrolled in the program for at least three years, completed at least one semester of dissertation writing, and stopped enrolling for at least one year. An intensity sampling strategy was initially employed to select rich cases that could provide comprehensive information on doctoral attrition. This strategy allowed the researcher to prioritize interviews with qualified and willing participants who had a deeper knowledge of the phenomenon. Such an approach is advantageous in qualitative research, especially when an emergent design flexibility is adopted. Regarding sample size, the study adhered to the principle of data saturation (Vasileiou et al., 2018), which is the point at which no new themes emerge. To achieve this goal, additional ABD students from other universities were recruited through snowball sampling. All participants received an informed consent form that they were required to sign before participating. The consent form provided detailed information about the study's purpose, the data collection process, and how the data would be handled. It also emphasized that participation was voluntary and that they could withdraw from the study at any time. The form assured participants of the confidentiality and privacy of data, which would be anonymized during analysis and reporting.

Data Collection

Of all the most frequently used data collection methods in educational research, an interview was selected because it encourages people to tell their stories themselves that we would not otherwise discover through other approaches (Hobson & Townsend, 2010). Due to pandemic-related restrictions and for the convenience of participants, semi-structured interview sessions were conducted via *Zoom* between October 1 and December 1, 2022. Each session lasted between 20 and 40 minutes. Following the semi-structured interview framework proposed by Kallio et al. (2016), an interview guide was prepared to facilitate discussions on doctoral education. The topics included students' motivations for pursuing graduate education (e.g., "*Why did you begin your doctoral study?*"), the challenges they faced in graduate school (e.g., "*What challenges did you encounter while enrolled in the DIT program?*"), and their reasons for discontinuing dissertation courses (e.g., "*What obstacles in your dissertation led to your decision to drop out?*"). Additional prompt and follow-up questions were asked based on participants' responses to elicit more detailed data. Like most qualitative research, the interview process was iterative, with data collection and analysis carried out alongside each other. Initial patterns and themes that emerged during early interviews informed subsequent data collection. Ineffective questions were replaced, and supplementary probes were introduced to explore topics raised by participants in earlier interviews. This iterative approach ensured that the data collection process was responsive and allowed for a deeper exploration of relevant issues as they unfolded.

Thematic Analysis

Interviews were video recorded, and the audio files were extracted and transcribed automatically using *Otter*. Given that code-switching between Filipino and English is common in the Philippines (Garcia, 2020b), the transcripts were translated into full English. The translated data were then manually analyzed using thematic analysis to identify and interpret themes related to doctoral student attrition. Thematic analysis, a foundational method for qualitative research, involves six phases (Braun & Clarke, 2006). An external researcher unaffiliated with the study assisted with the analysis to enhance reliability. The first step involved familiarizing with the data by repeatedly reading the narratives. Second, emergent themes were developed through a series of coding stages. Open coding was employed, and initial codes were generated inductively. These initial codes were grouped based on similarities, forming meaningful categories. In the third phase, these categories were structured into coherent themes. An analysis grid was developed based on three concepts: motivations to enroll, doctoral challenges, and reasons for dissertation noncompletion. During the fourth phase, both researchers independently extracted and categorized quotations using the analysis grid. To ensure reliability, Cohen's kappa coefficient was calculated for coding agreement. The computed value was 0.71, indicating a substantial agreement (Landis & Koch, 1977). In the fifth phase, the researchers evaluated how well the identified themes enhanced the understanding of the data. The final phase involved composing a report where descriptive results were supported by illustrative quotations. Incorporating participant quotes is vital for presenting qualitative findings (DeJonckheere & Vaughn, 2019).

RESULTS

A total of 27 participants were interviewed by the researcher using a semi-structured format. Most of them were male (n = 19, 70.37%) with a mean age of 37 years. There were more part-time students who balance their studies with professional and institutional responsibilities. Although some were scholars required to study full-time (mostly from state universities), it was uncommon for them to do so exclusively, as many continued to perform institutional duties. Despite the DIT program often being marketed as a degree for industry practitioners, most participants were teachers by profession employed in higher education (n = 24, 88.89%). One possible reason is the requirement by the Commission on Higher Education (CHED) for faculty members to obtain a master's or doctorate. In contrast, graduate degrees are not mandatory in the industry, although they provide an additional advantage in a competitive labor market. It is worth noting that the DIT program is the more commonly available option in the Philippines for professionals and educators seeking a doctoral degree in the field of IT. This limitation may have contributed to teachers' decision to enroll in this program instead of pursuing a PhD in IT. On average, the participants have been enrolled in the DIT program for four years, with at least two semesters in dissertation courses, and had dropped out (or stopped out) for at least a year.

Motivations to Enroll in Doctoral Studies

Motivation for enrollment is a predictor of retention and attrition behaviors (Janke, 2020), which is why students were first asked why they began their doctoral studies. Understanding the motives why students embark on graduate education is crucial before diving into the reasons why they were unable to finish their programs. This information can help identify potential areas of improvement in the education system and provide support to students who may be struggling to persist in their doctoral programs. Five themes emerged as motivational drivers that set students on the path of graduate school. The findings indicate that doctoral students pursue graduate studies to obtain a higher academic rank and salary, better employment opportunities, greater authority and prestige, social norms and expectations, and personal fulfillment.

Higher Academic Rank and Salary. The motivation most frequently mentioned by students was the significant increase in salary associated with obtaining a higher academic rank. In a country where education is generally viewed as a great equalizer of opportunities, it is unsurprising that many students use graduate education as a stepping stone to a better life. This finding contrasts with studies conducted in developed countries, where salary is not listed as a major motivation for enrolling in doctoral studies (Moreno & Kollanus, 2013). Participants noted:

> *Me, personally... I am after the salary that's why I enrolled. When you have a doctoral degree, you are eligible for a higher rank and salary grade.* (Participant 5)

> *Higher salary is my primary motivation of course. It is unfair that I have a lower salary than my co-teachers with doctoral degrees and they do less work than me. I know I cannot blame my co-teachers, so I decided to follow their path and start my doctorate*. (Participant 11)

> *In state universities, you need a higher academic rank to achieve a higher salary grade and one requirement is the educational qualification, so I enrolled.* (Participant 22)

Better Employment Opportunities. Another motive cited by students for pursuing graduate education was better employment prospects. Participants assumed that having a doctorate increases their professional value among employers and is beneficial when pursuing higher-level positions. A systematic review supports this assumption, as most doctoral graduates find better employment opportunities both within and outside academia (Young et al., 2020). Although there is some skepticism concerning the employability discourse, participants believed that there is a clear employment pathway for doctoral graduates. They stated:

> *I began my DIT journey because I would like to be a full professor someday. If not here in our school, I believe I have a better opportunity outside if I am a doctoral graduate.* (Participant 1)

> *I remember my first year as a teacher and Doc [Professor 1] asked me when I would enroll at MIT. I was a newbie teacher, and I had no idea that it is mandatory in my line of work. Good thing he made me realize that graduate studies offer better employment. I started thinking of my career upon hearing it. After a year of thinking, I enrolled!* (Participant 6)

DIT is not a requirement in my work, and I am already a project manager, but I think our company will view me as an important asset if they have a doctoral in IT. (Participant 13)

Greater Prestige and Authority. A group of students enrolled in the DIT program to enhance their professional reputation and authority in their respective fields. Some argued that having a strong professional identity is key to achieving other motivations (e.g., higher salary and better jobs) mentioned by participants, whether within their current organizations or in future opportunities. This assertion echoes the findings of Khapova et al. (2007), which suggests that professional identity is a significant factor in career change intentions within the IT sector.

I always believe that when you are called a doctor, at least in academia, you are reputable, and people instantly respect you when they hear you are called a doctor by someone else. It is like no one will look down on you or judge you because of your status. (Participant 1)

One reason I enrolled in DIT is to have three stripes in my toga. When you wear it during graduation, you stand out from the rest, and everyone looks up to you. (Participant 12)

For me, a doctorate degree speaks authority. After all, it is the highest level of academic achievement, so they are the leaders in their respective fields. Being a doctorate degree holder is what I would like to achieve in my career, so I enrolled. (Participant 22)

Social Norms and Expectations. Some DIT students reported that their decision to enroll was influenced by the norms and expectations associated with academic pursuits. As teachers by profession, they felt it was expected of them to support their professional development by obtaining graduate-level degrees (Sevim & Akin, 2021). Peer pressure also played a role, as they were aware that many of their colleagues and co-workers were doctorate holders. This awareness serves as an additional impetus for them to pursue a similar educational path. The emergence of peer pressure, unlike the peer support commonly highlighted in prior doctoral studies (e.g., Matheka et al., 2024), suggests a possible cultural or contextual influence on doctoral enrollment in this study. Some DIT students noted the following:

Most teachers from our department are doctoral degree holders so you can imagine the pressure for me just to feel that I am worthy to be there as well. (Participant 6)

If you are in academia, I always believe that you are expected to have the highest degree. In fact, it is even a requirement if you are teaching at a university. (Participant 8)

As much as I would like to think that I pursue graduate education out of my own interest, to be honest, most of my decision is because everyone is enrolling and finishing their degrees. I do not want to be left behind and I also like to be competitive. (Participant 14)

Personal Fulfillment. Although most students were driven by extrinsic motivations, some of them enrolled out of a desire for personal fulfillment. Like other graduate education studies (e.g., Shellhouse et al., 2020), this intrinsic desire was seen as an opportunity for personal growth and an accomplishment that equates to a personal badge of honor. Participants stated:

It is self-fulfillment for me, that moment when you go up to the stage and receive that hard-earned degree with your family and friends around. (Participant 10)

I enrolled because of my personal mission to be the first in our family to obtain a doctoral degree. I feel like it is self-fulling to uplift the pride of the family. (Participant 4)

Challenges Faced by Doctoral Students

The challenges faced by doctoral students that could affect their degree completion have been scrutinized in many studies (e.g., Gao, 2021). However, the difficulties faced by students from the IT discipline have not yet been investigated. Uncovering the obstacles unique to DIT students is imperative to paint a holistic picture of their doctoral experience. The findings indicate that their problems are not dissimilar to those of other disciplines, which include study-work conflict, time management, imposter syndrome, and other personal problems.

Study-work Conflict. Of the challenges identified, the study-work conflict was the most pervasive among DIT students. The interference of work-related responsibilities positioned graduate students in a vulnerable state and, as a result, negatively affect their job dedication (Wyland et al., 2013). Therefore, in some cases, students are forced to choose between continuing their doctoral education and focusing on their job. Participants stated:

Often, my involvement at school as an administrator prevents me to focus on my graduate education. It is challenging when you are just a part-time student. (Participant 7)

I have so many responsibilities as a college instructor that most of the time I cannot do my coursework in DIT. Since I have no choice, I usually spend my Friday nights until dawn finishing all my backlogs before going to my Saturday classes. (Participant 15)

Some of my professors give so many assignments that make me feel like I am a college student. Although it is a waste of time, I have to sacrifice some of my time at work just to do this assignment that I already know. We should be focusing on advanced topics. (Participant 21)

Time Management. With the prevalence of study-work conflict, it is unsurprising that time management was likewise a challenge for many DIT students. The academic demand of graduate school is even more perplexing for part-time students as it necessitates a rebalancing of various aspects of their lives. Some students mentioned that they sacrificed their leisure time and social lives, which is alarming as it correlates with higher levels of burnout (Sverdlik et al., 2018).

I don't remember my masteral being as demanding as my doctoral. It is hard for me to juggle all the responsibilities and ensure that I have time for everything. (Participant 3)

Since I enrolled in the DIT, my social life has been negatively affected. I don't have time to meet my friends or go out with my family anymore. (Participant 13)

There are times that I miss playing online games, but I have no choice but to prioritize my graduate school, so my time is purely dedicated to it nowadays. (Participant 24)

Imposter Syndrome. The imposter phenomenon is common in doctoral education. Despite being accepted for the highest university degree, many graduate students never feel good enough about themselves (Nori & Vanttaja, 2022). DIT students in this study also doubt their accomplishments and skills, which made their graduate school difficult. Participants noted:

> *I did not realize how unconfident I was until I enrolled in the DIT program. In my first semester, I rarely participate in classes while my classmates constantly talk with my professors. I sat at the back hoping my professors will not notice or ask me questions.* (Participant 2)

> *Sometimes I feel my heart pounding when I am at school because my professors and classmates may think that I am not as knowledgeable as them. I think it is worse for me because I teach the same subjects at the undergraduate level*. (Participant 3)

> *I used to be confident but when my classmates present their assignments, I feel like a fraud because mine are not as good as theirs. I don't think as critically as them, in my opinion. I'm good at programming but research is apparently my weakness.* (Participant 23)

Other Personal Problems. Some DIT students emphasized other personal problems that made their doctoral education more challenging, which include procrastination, family obligations, and health issues. These issues not only affected their ability to concentrate on their studies but also contributed to delays in meeting program milestones. In some studies (e.g., Acharya et al., 2024), personal demands are identified as significant impediments to doctoral education. These individual challenges further illustrate the complexity of balancing professional, academic, and personal responsibilities. Therefore, it is unsurprising that DIT students noted:

> *It is difficult to admit but I believe I procrastinate a lot and it makes my doctoral seems harder to finish. With my other problems, stopping always seems a logical choice.* (Participant 3)

> *Spending time with my family and taking care of my kids used to be the highlight of my weekends. Now, I spend them doing my course requirements in DIT. With school and work and then my personal responsibilities, it is a hard challenge for me.* (Participant 7)

> *My health is still generally good, but the stress and burnout are too much. It's like a never-ending work and sometimes I would just like to sleep like before.* (Participant 14)

Reasons for Dissertation Noncompletion

As reviewed from the literature, there seems to be limited research on what led ABD students to withdraw from a graduate program. As writing and defending a dissertation is one of the final requirements in doctoral education, why students dropped out (or stopped out) is a pivotal research agenda. Many studies solely focused on the challenges of doctoral education, but the findings of the present study indicate that there are problems unique to ABD students. These results support Burkard et al. (2014), who speculated that the high attrition rate in doctoral programs is due to the difficulties in dissertation completion. Furthermore, some of the findings below extended their study by illuminating the challenges unique to the DIT program.

Software Development. Unlike other PhD dissertations that place greater research emphasis on theory building, DIT dissertations demand an artifact (e.g., software) in addition to the dissertation writing to demonstrate the technical skills of graduate students. For instance, while a PhD in Education student may investigate the pedagogical effect of an existing augmented reality application (e.g., Garcia, 2020a), a DIT student may be allowed to explore the same research topic but he/she must develop his/her own artifact. This scenario echoes the assertion of Fink (2006) that a PhD thesis is not the same as a professional doctorate (e.g., Doctor of Business Administration in Information Systems) thesis. Many DIT students noted the following:

> *I do not know if our dissertation is more difficult than other PhD programs, but it is certainly more time-consuming and laborious because we have a system to develop*. (Participant 3)

> *Contrary to the assumptions of many people, not all of us who teach information technology degrees know how to develop a full-fledged system. In my case, I teach non-programming courses, so I really need to learn. This is the reason why I have not started writing anything yet because I have not developed the proposed system in my dissertation*. (Participant 9)

> *The lead panelist during my title proposal obligated me to include a machine learning feature. Until now, I do not know how I will do it. I have no background in AI and I am not a computer science teacher. I am not enrolling again until I figure it out.* (Participant 19)

Limited Research Experience. Limited research experience and exposure were mentioned by the DIT students, which has also been noted by STEM education researchers (Landicho, 2020). Participants acknowledged that they have low self-efficacy and self-esteem due to their lack of research knowledge and writing skills. They also believe that doing research in the IT discipline is not as common as in the other computing (e.g., computer science) and non-computing (e.g., education) fields related to them. Some of them narrated the following:

> *My research experience is not comprehensive enough and I am not alone because most of my classmates do not have enough exposure as well. In the IT discipline, we are used to capstone projects where we develop software. Our paper seems so different from the papers published in various international journals and conference proceedings*. (Participant 2)

> *I may be an excellent capstone project adviser but writing the document myself is a challenge. I am not that good at writing, especially like how native English speakers write.* (Participant 7)

> *When you compare computer science and information technology, I always believe that the former should do the research while the latter should apply the findings. Perhaps this is the reason why we do not engage in research so much unlike others.* (Participant 10)

Computing Research Topics. The difficulty in choosing a dissertation topic is also a challenge for many DIT students. In addition to their lack of research exposure, they noticed that some panelists are more inclined to accept a dissertation proposal when there is an integration of computer science concepts (e.g., machine learning and natural language processing). Some

students admitted that they have not enrolled yet after the approval of their topic proposal because they need to figure out first how they will develop a system with these technologies.

> *My proposal was about an eCommerce system but the panelists during my topic proposal added an NLP feature to automatically analyze users' comments. I have not enrolled ever since because I need to learn how to do it first. I have nothing to present!* (Participant 7)

> *Like one of my classmates, I was mandated to incorporate a machine learning feature with an algorithm of my choice to expand the scope of my topic proposal. They said that my proposal was acceptable if this is an undergraduate capstone project. They added that a dissertation should be more advanced and one way to do it is to have the latest technologies. I just agreed because I would like to have my proposal accepted this semester.* (Participant 16)

> *I feel like my DIT dissertation is becoming more focused on computer science because of the machine learning feature that I have no idea how to code. Some of my classmates have the same dilemma but we understand that we must learn it by ourselves. However, I feel like I can finish my doctoral on time if I do not have to deal with this feature*. (Participant 19)

Dissertation Anxiety and Stress. DIT students recognized that they experienced anxiety and stress during their dissertations. They asserted that writing is difficult, deadlines are alarming, defending is scary, and the long journey of the whole dissertation process is exhausting. Unfortunately, the stressful and anxiety-provoking experience positions graduate students on an emotional roller coaster (Fraenza & Palermo-Kielb, 2022). They stated:

> *It is intimidating to think that I will stand in front of a committee and defend my dissertation. I may need more time to prepare myself emotionally and mentally.* (Participant 2)

> *I thought it is going to be easy with my supportive adviser and classmates around, but it is honestly stressful especially since I am not that good at research writing.* (Participant 7)

> *I feel anxious every time I contemplate whether I will be able to finish my dissertation or not. My adviser is convincing me to finish but I do not know what to do because I have no system and I have not written anything yet except chapter 1.* (Participant 10)

COVID-19 Pandemic. A group of DIT students noted that their motivation decreased due to the nationwide lockdowns and school closures precipitated by the COVID-19 pandemic. According to Garcia et al. (2022), the productivity of teachers while working from home also decreased. Unfortunately, when the pandemic restrictions and protection measures were relaxed, they admitted that it has been difficult to get back into work and school after a long confinement period. This finding echoes a recent study by Ralston and Smith (2022), where doctoral students were reported to be having difficulty in obtaining their flow. Participants noted:

> *My motivation to write, study, and work was simply not there. I like staying at home, but this pandemic really affected my concentration.* (Participant 4)

The pandemic was demotivating for sure. I think it is the feeling of being at home for consecutive months after working non-stop for almost a decade. I did not want to think of my dissertation, and I just stopped completely. My adviser contacted me twice and asked about it and I just said I would probably return when everything is normal again. (Participant 10)

DISCUSSION AND IMPLICATIONS

Student attrition has emerged as a critical area of inquiry in the field of educational research. The high attrition rate reported in the literature (e.g., Jones, 2013) and its detrimental outcomes for students, institutions, and society underscores the urgency and relevancy of this study. While some research has investigated retention and attrition predictors (e.g., van Rooij et al., 2021), there is a paucity of evidence on why ABD students discontinued their doctoral education. Research on doctoral attrition in non-US nations is also underrepresented in the literature (Jaksztat et al., 2021) despite the underproduction of doctoral degree holders in several lower- and middle-income countries (Yudkevich et al., 2020). With the prevalence of doctoral attrition in the STEM disciplines (Lott et al., 2009; Saloma, 2020; Satterfield et al., 2018), there is a necessity to examine doctoral degrees like DIT to spark discussions on this research area and discipline. Considering the research gaps in the literature, this study explored experiences and events that led ABD students to drop out of the DIT program. Exploring this phenomenon may lead to the development of effective strategies to improve retention rates in graduate education.

Motivation and Its Role in Graduate School Retention

In terms of motivations behind their enrollment decision, it was apparent that most DIT students were driven by extrinsic desires (e.g., academic rank, salary, and prestige). They perceive graduate education as a pathway to a better life, and these opportunities have been validated in previous studies (Germain-Alamartine, 2019; Lešer et al., 2018; Mertens & Röbken, 2013). While extrinsic aspirations may not have negative effects early in the graduate school years, Janke (2020) found that they become more problematic over time. The reliance on extrinsic motivation for pursuing graduate education impairs study satisfaction and elicits dropout thoughts. Garcia (2022) added that extrinsic motivators are detrimental to students because they can lead to obsessive behavior problems, negativism, and procrastination. Sadly, as reported in this study, these negative outcomes were corroborated by DIT students during interviews. Following the tenets of motivational theories (e.g., Studer & Knecht, 2016), it is posited that intrinsic motivation is considered a superior form of motivation for promoting individual well-being and facilitating personal development. Consequently, it is crucial for educational leaders to formulate and implement strategies and programs that can foster intrinsic motivation among graduate students. Practical examples of fostering intrinsic motivation can be drawn from the findings of Xia et al. (2021), who highlighted the role of supervisory practices in shaping graduate students' motivation. Supervisors can cultivate intrinsic motivation by creating a free and supportive environment that inspires students' interest, excitement, and enjoyment in their research tasks. This can be achieved by minimizing external pressures and focusing on fostering

creativity and engagement through subtle organizational changes. This managerial implication underscores the important role of graduate schools in serving the interests and addressing the challenges of ABD students. Furthermore, as much of the responsibility for finishing the dissertation falls on the shoulders of doctoral students, they must be assisted in developing and honing their self-regulated learning skills and strategies (Kelley & Salisbury-Glennon, 2016).

Obstacles Encountered by ABD Students

The challenges confronted by ABD students enrolled in a DIT program are comparable to the reports from other studies (Jomaa & Bidin, 2017; Nori & Vanttaja, 2022; Sverdlik et al., 2018). They are also consistent with the classification made by Sverdlik et al. (2018), which states that the factors that influence doctoral experience are internal and external in nature. From a macro perspective, these problems revolve around the balance between life, work, and study. Unfortunately, part-time doctoral students who encounter these difficulties have a higher risk of dropping out (Castelló et al., 2017). Meanwhile, it is worth noting that there are challenges frequently mentioned in the literature that did not emerge in this study. These difficulties include but are not limited to financial constraints (Burns & Gillespie, 2018), student-supervisor relationship (Gao, 2021), doctoral satisfaction (Dericks et al., 2019), academic workload (van Rooij et al., 2021), and socialization (Hadizadeh & Vefalı, 2020). The absence of these commonly cited challenges in this study may highlight unique factors specific to ABD students, the structure of the DIT program, or the Philippine context. Both conformities and deviations simply denote that doctoral programs must take better account of graduate students' sociodemographic profiles and life situations. This finding supports Fraenza and Palermo-Kielb (2022), who advocated for individualized and differentiated support as every graduate student's situation is different. Ultimately, its practical implication to the current graduate school practices is likewise confined to the reassessment of the conditions and requirements involved in studying for a doctoral degree, particularly as a part-time student. Academic support services and programs are consequently warranted to assist them in balancing their study, work, and life.

To some extent, the reasons why DIT students dropped out (or stopped out) are in line with the findings of other researchers. For instance, Ralston and Smith (2022) asserted that the COVID-19 pandemic-related changes triggered unique challenges for graduate students engaged in a dissertation. It was also found that pursuing doctoral dissertations via online environments has its own weaknesses, particularly its negative consequences on motivation, productivity, and time management. DIT students reported these adverse effects as well, which means they also need support to increase flow experiences and recognize the intrinsic value of their dissertations. Lim et al. (2019) recommended improving trust, accountability, collaboration, training, and mentoring. Meanwhile, unlike the study of Castelló et al. (2017), there was more emphasis on emotional distress and perceived lack of research experience among DIT students. As their study was conducted during normal times, it is possible that the stress and anxiety described by DIT students were aggravated by the pandemic. However, their lack of research experience and exposure is a significantly bigger problem. In addition to its association with negative emotional

states (Gittings et al., 2018), as also recounted in this study, research experience is also linked to doctoral success. For instance, Li et al. (2022) emphasized that the research experience obtained by students during their master's program is greatly valued in doctoral education, as it helps students in, for example, writing proposals and connecting with other scholars. Consequently, both departmental and institutional interventions are needed to expose DIT students to research.

Distinctive Challenges in the DIT Program

Two more reasons cited by ABD students that may be unique to the DIT program were the inclusion of software development and the selection of computing research topics. First, DIT students recognized that producing software artifacts has become part of their dissertation culture. However, they believe that it is another layer of laborious work that may not be mandatory in other doctoral dissertations. While software development is an expected expertise for DIT students, the additional workload it entails often leaves less time and energy for them to develop critical research writing skills. This trade-off is significant, as many students noted that their limited writing experience and self-efficacy in producing high-quality research documents remain one of the most challenging aspects of their dissertation process. Thus, the emphasis on software creation inadvertently hinders their ability to excel in research writing, which is the primary focus of the dissertation in most other doctoral programs and a fundamental requirement for degree completion. One possible reason why they are expected to develop an information system is to separate them from the PhD in IT program. Although both programs solve the world's technology-related problems, PhD in IT focuses primarily on research and theory, while DIT is about transforming theory into practice. This distinction between the dissertations of a PhD student and a professional doctorate student was already posited by Fink (2006).

Similarly, Jones (2013) found these doctoral program designs to be a recurring issue for the last forty years. Differentiating the PhD and professional doctorates to graduate students is consequently an implication of this study. Meanwhile, DIT students also noticed that the dissertation committee members were more inclined to accept a proposal when there was an integration of computer science concepts (e.g., machine learning). In some cases, a doctoral chair mandated this requirement to a student to expand the dissertation's scope. Albeit it is understandable that DIT students must demonstrate their technical skills, Kelley and Salisbury-Glennon (2016) argued that they should be urged to pick a dissertation topic that is intrinsically motivating. One implication of this finding is the necessity for clear guidelines on choosing dissertation topics in the IT discipline. Providing such guidelines can help students align their research interests with the program's expectations and requirements. Another implication emphasizes the need to clearly communicate the expectations regarding artifact production as a required component of doctoral-level work. Although DIT students are expected to possess the skills required from their bachelor's and master's education, these expectations may not be adequately reinforced during the admissions process or early stages of the program. It is also possible that students consider the dissertation document to be a higher priority than artifact production at the doctoral level. Overall, it is advisable that the solutions to these two reasons be

explicitly explained to all students from the very beginning so that they can make more informed decisions in choosing doctoral programs and dissertation topics.

Limitations and Future Research

One advantage of this study was the qualitative design that was instrumental in extracting a deeper understanding of the participant's experiences. van Rooij et al. (2021) asserted that qualitative research is needed to validate the quantitative findings from prior attrition studies. The recruitment of ABD students who had stopped enrolling for at least a year and were not enrolled at the time of the study also contributed to the richness and depth of the qualitative findings. In contrast, other existing studies (e.g., Hanson et al., 2020) recruited ABD students who were still enrolled at the time of data collection. Although conventional generalizability is not expected in most qualitative studies, another advantage of this study was the diversity of participants who came from different universities. The lived experiences of DIT students reported here thus varied depending on their respective graduate school climate. Interestingly, some students hinted at returning to complete their dissertations. This possibility raises important questions about the likelihood of re-enrollment and the factors that might support or hinder such decisions. It also represents a potential avenue for future research, particularly to explore strategies and conditions that facilitate the successful return and completion of ABD students. While this study contributes to the discussion of doctoral attrition in STEM disciplines through the lens of the DIT program, future research exploring similar challenges and opportunities in other STEM degrees is strongly encouraged. Another limitation was the absence of quantitative analysis to explore how the reported motivations and challenges functioned as predictors of withdrawal from the program. Due to the qualitative nature of this study and its reliance on interviews for data collection, the relatively small sample size was insufficient for conducting a comprehensive quantitative analysis. Limitations notwithstanding, this qualitative case study research introduces new and unique insights into the experiences of ABD students enrolled in a DIT program that are of value to all stakeholders involved in graduate education.

CONCLUSION

Student attrition is a critical topic in educational research. Doctoral education faces this problem, with its detrimental consequences highlighting the urgency and relevance of this study. While some research has investigated predictors of retention and attrition, there is a paucity of evidence on why ABD students fail to graduate on time or at all. Furthermore, the DIT program remains largely unexplored, despite the prevalence of doctoral attrition in STEM disciplines. This qualitative case study brings attention to the lived experiences of ABD students from a DIT program that led them to stop or drop out altogether. The results reveal that most DIT students were driven by extrinsic desires, and they perceive graduate education as a pathway to a better life. The challenges they confronted are internal and external in nature (e.g., study-work conflict, time management, imposter syndrome, and other personal problems), which are comparable to other disciplines. To some extent, the reasons (e.g., dissertation anxiety and limited research

experience) why DIT students dropped out (or stopped out) also mirror the findings of other studies. However, two more reasons that may be unique to the DIT program were the inclusion of software development and the selection of computing research topics. These findings serve as empirical evidence for addressing the issue of dissertation delays, a lengthy time of doctoral completion, and attrition in graduate education. The implications of this study highlight the need for clear communication of program expectations, enhanced support for dissertation progress, and targeted interventions to balance the demands of professional and academic responsibilities. These insights not only inform policies and practices within the DIT program but also offer valuable considerations for other doctoral disciplines facing similar challenges. By addressing these barriers, institutions can better support doctoral students in completing their programs successfully and on time, while also improving retention and graduation rates.

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If you are looking for research collaborators, please do not hesitate to contact me at mbgarcia@feutech.edu.ph.

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