

# Student throughput trends on postgraduate level: An African case study<sup>1</sup>

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## ABSTRACT

*Student retention and throughput is a global phenomenon facing higher education that dates back to the 1960s and currently remains a critical concern worldwide. Research literature on student retention and throughput trends at higher education institutions continuously refers to the ways in which the various stakeholders at tertiary institutions take important decisions to ensure a better completion rate (throughput) among postgraduate students at these institutions. In promoting further appreciation of throughput among postgraduate students, this paper, based on an empirical study among a number of postgraduate students at the University of Ghana, reviews some trends and possible factors that may play a role in postgraduate student throughput at African universities in general and at this university in particular. The outcomes of this study show that student throughput at this institution has decreased over time due to, inter alia, financial difficulties, personal challenges and fewer opportunities for students to get study leave from employers. The paper concludes with recommendations to improve student throughput at postgraduate level in Africa such as academic counselling before enrolling for postgraduate studies.*

**Keywords:** postgraduate, students, dropouts, throughput, models, Africa, Ghana

## INTRODUCTION

Authors such as Astin, Bayer and Vaughan have given a clear and comprehensive historic perspective on student throughput and retention in higher education (Reason, 2017). The phenomenon of student throughput and retention has become 'big business for researchers, educators and entrepreneurs alike' (Sondlo, 2016: 2) as the worldwide focus and aim for tertiary institutions is on increasing the rate of student persistence and graduate rates. From the research literature, it is clear that significant improvements are evident by some higher education institutions in addressing this issue (Thomas, 2015). However, much more still needs to be understood about this issue in the context of improving institutional effectiveness and achieving national imperatives and goals.

As an institutional researcher, the author is concerned with the standards in higher education and, more specifically, with the retention or high dropout rates of students at tertiary level, specifically in African and other Third-World countries. This trend, however, is not limited to tertiary institutions among Third-World

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countries alone. Tertiary institutions throughout the world are currently facing challenges and issues such as the quality of postgraduate training, the length of time it takes for postgraduate students to complete their studies, the success rate of postgraduate students, and the high percentage of postgraduate students who terminate their studies and drop out of the system before graduation (Reason, 2013; Sondlo, 2016).

Thomas (2015) conceptualises student retention and throughput on an international level, and confirms the critical challenge of this issue on a global scale and the measures placed on higher education institutions worldwide for accountability and responsiveness. According to this study, only 60% of students from colleges and universities in the United States of America (US) graduate within six years. Students who did not persist into their second-year account for \$6.2 billion in state appropriations for these higher educational institutions. Of particular importance to African universities, is the finding from Tinto (2007) that the problem of student retention as manifested in the US affects a particular sector of the population, mainly African-American students with a low socio-economic background. Thomas (2015) notes that over the years, the success rates of these students have dropped even further.

Similar situations exist in the United Kingdom (UK) and other parts of the First World. The Open University in the UK reports that among 29 countries sampled in 2015, the UK has the lowest dropout rate of 19% compared to that of Germany (28%), Australia (35%) and the US (37%). This situation exists despite all the attempts, approaches and supplementary techniques to address and improve student retention and success (Thomas & May, 2014).

The current situation in Africa is, according to Sondlo (2016), even worse than in other countries of the world. In the African context, these challenges manifest themselves differently from the developed world. Broad socio-economic and political issues have had a negative impact on the African higher education system. With most of Africa lagging behind in terms of development, African higher education institutions cannot keep pace with their counterparts in developed countries in relation to competition and internationalisation of higher education. Thus, African universities' experience of student retention is to a great extent influenced by underdevelopment and poverty, which is linked to the commitment that African universities have towards meeting the Millennium Development Goals with respect to increasing and widening participation rates (Negash & Olusalo, 2012).

Sondlo (2016) confirms this trend and cites several inter-related factors that account for the discontinuity of students in higher education on the African continent, some of which are beyond the institution's control. Poor preparation for higher education, lack of commitment among students, unsatisfactory academic experience, ineffective matching between students and courses by institutions, lack of social integration, financial issues and personal circumstances are some of the factors that contribute to this dilemma. Additional reasons for students' non-completion of their studies on the African continent include problems such as socio-economic status, educational background of parents, time factors, workload, lack of support structures, ill health, pregnancy, HIV/AIDS, family responsibilities and a lack of career guidance at school level (Sondlo, 2016).

In view of these trends in Africa and other countries worldwide, studies on the duration of postgraduate studies and concerns about shortening the time students take to complete their postgraduate studies have become matters of the utmost importance, not only to students and managers of higher education but also to governments, funders of postgraduate studies and other stakeholders in higher education. Several of these studies have expressed concerns about problems with postgraduate education, specifically about the time students take to complete their studies (Holdaway, Deblis & Winchester, 2005; Sayed, Kruss & Badat, 2008; Lessing & Schultze, 2012; Amehoe, 2014; Thomas, 2015; Sondlo, 2016).

A number of studies (Latona & Browne, 2001; Carey, 2004; Manathunga, 2005; Shushok & Hulme, 2006; Lovitts, 2012; Amehoe, 2014; Luescher-Mamashela, 2015) have been done in the last few years into enrolment and student throughput at higher education institutions in Africa. These were conducted, among others, by the World Bank, the South African Department of Education, the Association of African Universities, the United States Partnership for Higher Education in Africa (PHEA) and the Centre for Higher Education and Transformation (CHET). In addition, the Higher Education Research and Advocacy Network in Africa (HERANA), an organisation on higher education and development established by CHET, has been involved in research on the status of postgraduate enrolment and throughput at higher education institutions and the impact it has on world economies (Luescher-Mamashela, 2015). These studies confirm that both student-related factors and institutional factors have an impact on low student throughput and students who take long to complete their postgraduate studies or do not complete their studies at all.

As a result of these and other studies, many countries have set priorities for institutions of higher learning to improve the efficiency of graduate outputs based on specific benchmarks. In the South African context, the Ministry of Higher Education has implemented a national plan to increase the overall participation rate and stresses that such a plan '... must be complemented by strategies to increase graduate outputs in the short to medium-term in order to ensure that the correct demand for high-level managerial and professional skills is satisfied' (Sondlo, 2016: 1).

Governments globally have always embraced investment in higher education because they recognise that there is a close link between research and economic development and they are therefore interested in funding postgraduate programmes, especially doctoral programmes. Such funding takes the form of grants allocated either to institutions or directly to students, and such grants are catered for in national annual budgets. In some First-World countries such as Australia and the Nordic states, doctoral education is free; the fees are sponsored by a number of stakeholders. In other countries, such as Thailand and Japan, loans are available to students on postgraduate level. In an African country such as Ghana, postgraduate studies are not free and students are dependent on loans and in some cases bursaries to enrol in their studies. As a result, stakeholders are concerned about throughput and attrition trends. Attrition and completion rates of postgraduate students are becoming statistics of vital concern to governments and funding agencies because they tend to rely on a performance-driven model to make informed judgements about higher degree research (Eggins, 2008; Lessing & Schultze, 2012; Amehoe, 2014).

It is clear from the discussion above that the concepts of 'student retention' and 'student throughput' are highly problematic concepts that need to be conceptualised.

## THEORETICAL FRAMEWORK FOR THE STUDY

### *Conceptualising student throughput in postgraduate education*

The earliest studies of postgraduate throughput and retention in postgraduate higher education occurred in the US in the 1930s and focused on what was at that time referred to as 'student mortality': 'The failure of students to graduate' (Berger & Lyon, 2015: 16). Historically, higher education research always focused on 'solving students' problems regarding mortality' (Shushok & Hulme, 2006: 87).

Researchers and scholars' comprehension of the meaning of the concept 'throughput' depends on various situations; and, for this reason, various terms have been developed over time to describe the different throughput situations. The use of the term 'throughput' may be traced back to attempts by quasi-academics and politicians to equate the success or completion rates of students at higher education institutions to the input and output concept in industry. This is similar to the conveyer belt syndrome of a factory, the success rate, determined by the quantum of output released through a revolving door (Clifford, 2014). With this

perception in mind, MacMillan (2007: 237) defines throughput as: 'the amount of work, people, or things that a system deals with in a particular period of time'.

Some other definitions of throughput go beyond the input and output production concept of an industry that appears to be limited to goods or products and consequently involves the number of people a system deals with in a particular period of time. Horne and Naudé (2007) define the throughput rate at tertiary institutions as the percentage of students who register for a module or course and pass the prescribed examination. Authors such as Craincross (1999), Latief and Blignaut (2008), Hauser and Koenig (2011) and Amehoe (2014) conclude that the simplest description of student throughput is the number of years a student takes to complete the prescribed examinations.

The concepts that underpin student retention and departure have been illustrated by scholars in various models of which Tinto's and Durkheim's models are the most well-known (Draper, 2008). The publication of Tinto's 1975 landmark student integration model demarks the start of the current international dialogue on student retention and student throughput (Tinto, 1997). This model theorises that students who socially integrate into the campus community increase their commitment to the institution and are more likely to graduate (Tinto, 1975).

Tinto's model reveals the policy gaps in the US Government's effort to address student attrition. According to Tinto, the challenges are not access to higher education, but rather enhancing student success and improving graduation rates. This situation mirrors the challenges facing African higher education in terms of student retention and throughput to ensure that students are retained and student success rates are improved (Tinto, 2010).

While Tinto's model has been supported, attacked and revised over the last four decades, it has significantly influenced how researchers and practitioners view postgraduate student retention and graduation (Swail, 2014). Tinto's seminal theory created a base from which thousands of studies have followed, making postgraduate student retention one of the most widely studied areas in higher education today (Berger & Lyon, 2015). Tinto's 1975 model was followed in 1993 by a second model, this time on student departure (Tinto, 2007). This model states that to persist with their studies, students need integration into formal and informal academic systems as well as into formal and informal social systems (Draper, 2008; Demetroiu & Sciborski, 2012).

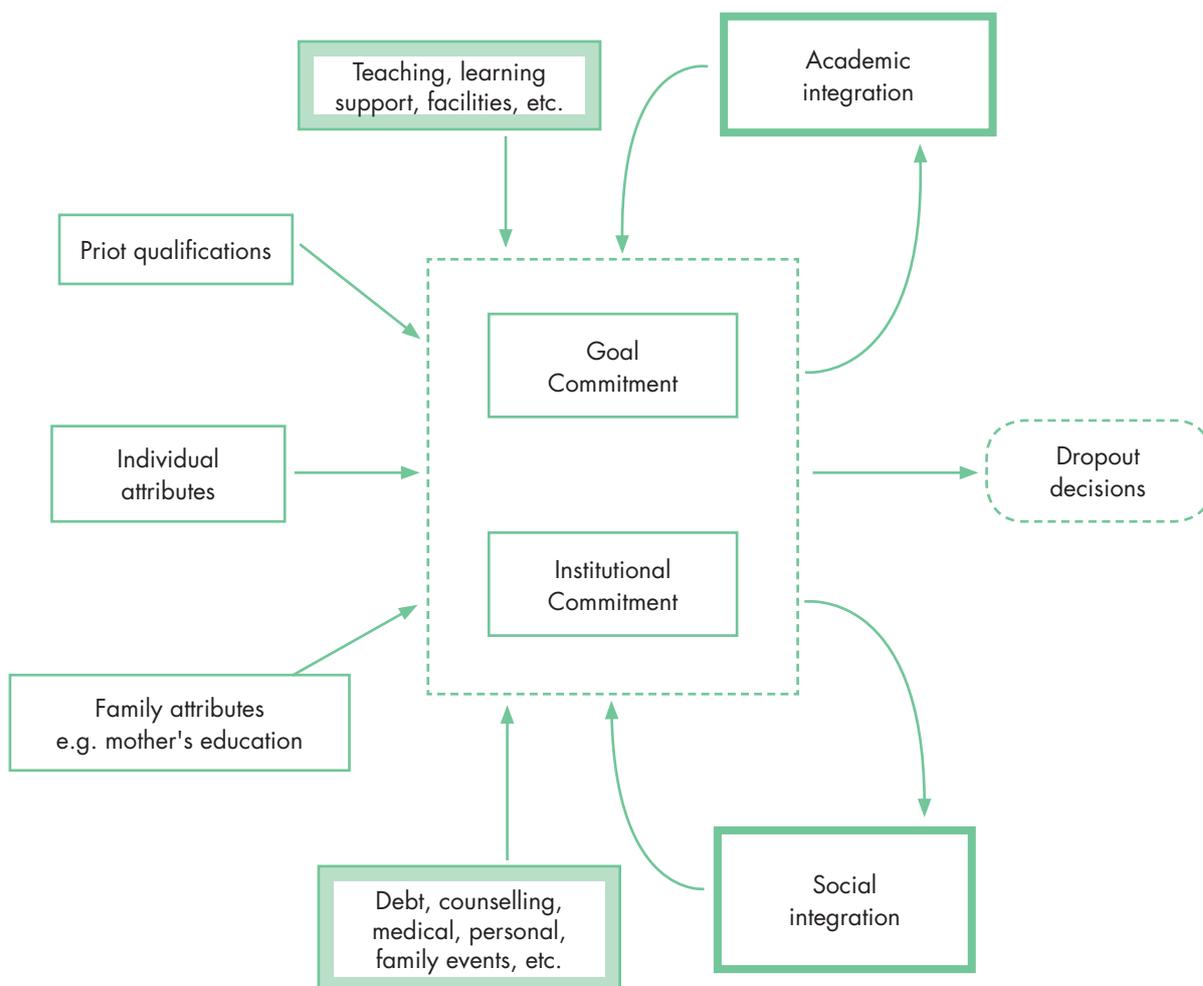
Tinto's 1975 student integration model has changed since it was originally introduced 43 years ago. Most notably, its more recent versions have addressed motivational variables, including goal commitment. Over the last decade, motivational theories from multiple fields of study, including educational psychology and social psychology, have been applied to practice, theoretical developments and the study of postgraduate retention. The attribution theory of motivation, in particular, has been notable in practice and in the retention literature. Additionally, the expectancy theory, goal setting theory, self-efficacy beliefs, academic self-concept, motivational orientations and optimism have been used to gain understanding into postgraduate student persistence and retention (Habley & McClanahan, 2014).

The model in Figure 1 explains the reasons behind student retention and student departures in tertiary education. The model identifies and explains three major sources of student departure from the system, namely academic difficulties; inability of individuals to resolve their educational and occupational goals; and students' failure to become or remain incorporated in the intellectual and social life of the institution.

The central idea behind the model is that of 'integration' as it claims that whether a student persists or drops out is quite strongly predicted by their degree of both academic integration as well as social integration.

Academic integration refers to aspects such as how many friends students have, personal contact with academics and their enjoyment of study, while social integration refers to their personal development, enjoyment of the subject, academic self-esteem and identification with academic norms and values.

Figure 1:  
Tinto's 1975 model of student retention



(Adapted from Tinto, 1975: 90)

Holistic approaches to student retention that include all stakeholders were carried over from the late 1990s to the early 2000s. Retention literature from this time stresses cross-departmental institutional responsibility for retention via wide-range programming (Kadar, 2001; Lehr, 2004; Salinitri, 2005; Walters, 2004; White, 2005).

These studies emphasise that all programmes and initiatives designed to support postgraduate retention should deal with formal and informal student experiences inside and outside the classroom. Habley and McClanahan (2014) reiterate that the interactions students have with concerned individuals on campus (faculty, staff, advisors, peers, administrators) have a direct impact on postgraduate retention.

To this end, Tinto (2010) suggests that to improve postgraduate retention, all higher education institutions must offer easily accessible academic, personal and social support services, such as a literacy service,

which is imperative for student retention on the postgraduate level. Literacy studies by Brian Street, for example, have made large contributions in this field, particularly with regard to postgraduate writing and the link with postgraduate throughput. Street worked constantly to establish connections, between theory and practice, across different cultural contexts and across disciplines. Street's ideological model entails a strong methodological commitment to ethnography and its effect on student success (Maybin, 2017).

The interactions students have on campus with individuals at academic, personal and support service centres can influence their sense of connection to the institution and their ability to navigate the campus culture, meet expectations and finally graduate. An institution that holds high expectations and actively involves students in its learning creates an environment where students are more likely to succeed (Demetriou & Sciborski, 2012).

In conclusion, throughput is all about making adequate provision in the academic environment to help students complete their studies on schedule, to improve their success rates in the various programmes and prevent them from dropping out of the system. This involves certain strategies geared towards retaining students and making their experience fulfilling on a sustainable basis.

#### *Factors related to postgraduate student throughput*

The conceptualisation above on student throughput and retention reveals the significance of throughput studies in higher education. Studies by Bischoff (2005), Visser and Hansio (2005), Reason (2017), Thomas (2015) and Maybin (2017), suggest many factors and consequences of low postgraduate throughput rates for education institutions of higher learning. Among these are numerous institutional strategies that can correct negative consequences associated with low throughput rates at an institution to increase success rates and reduce dropout rates. A low throughput rate results in time spent by lecturers engaging with students who do not complete their courses in time, negative perceptions of the image of the institution, a loss of money and time, and lower self-esteem on the part of the student.

Studies by Jiranek (2010), Wamala, Oonyu and Ocaya, (2012), and Amehoe (2014) reveal that factors such as field of study, attendance mode (part-time or full-time), scholarships and technical difficulties experienced in the course of research all have an influence on the time research master's and doctoral students take to complete their studies. Other variables often cited in student throughput include academic and social integration and engagement, financial independency and demographic factors. These factors have been found to directly or indirectly influence students' ability or desire to graduate. In addition, the quality of a students' prior instruction and their preparedness for postgraduate level work can significantly influence whether or not they succeed at an institution of higher education (Habley & McClanahan, 2014). Jiranek (2010) divides these factors into the following two broad categories:

- **student qualities and personal situations** (referring to academic ability, financial situation, language skills, interpersonal skills and persistence)
- **resources and facilities available to students** (referring to materials, equipment and expertise).

Nevill and Chen (2017) single out financial support as the main factor contributing to students' ability to complete doctoral degrees; they have established that many postgraduate students in the US are unable to balance work, family and educational responsibilities simultaneously. Boughey (2015), in turn, cites institutional reasons such as setting standards too high, an unapproachable culture that is foreign to students and ineffective student support structures as institutional factors that contribute to the current dilemma.

But what is the situation in an African country such as Ghana regarding student throughput and the reasons or factors behind it?

## OBJECTIVES OF THE STUDY

The ultimate goal of any study on throughput is not only to contribute towards ensuring that students complete their studies on time, but also to ensure that the number of students who complete their studies within accepted time limits keeps rising steadily. Studies on throughput therefore seek to identify and understand the reasons why students take long to complete their studies or fail to complete their studies (student dropout situations). Apart from identifying and understanding the reasons, throughput studies also seek to recommend solutions to ensure improved completion rates and to keep dropout rates very low, while at the same time maintaining or increasing the success rate. The aim of this study is therefore to investigate the possible causes of delayed completion and non-completion among research postgraduate students at the University of Ghana and to recommend ways in which these situations can be improved in other African countries. The research question for this study can be phrased as follows: **Which specific factors influence throughput rates at the University of Ghana?**

## RESEARCH METHODOLOGY

This study represents a case study at the University of Ghana in Accra. The population for this study consisted of research master's and doctoral candidates, who completed their theses between 2010 and 2014, but not in the prescribed period (extended candidatures), and their supervisors. The former postgraduate students were purposefully selected from the graduation classes of this period.

Purposive sampling was appropriate for this study because the study sought to investigate a phenomenon within a specific timeframe (Twumasi, 2001). The sample used for this study was 10 former master's students (coded MS) and 10 former doctoral students (coded DS) who failed to complete their postgraduate studies in the prescribed period, and the five supervisors (coded S) who supervised the sampled students. Face-to-face interviews were conducted with the participants. The interviews were recorded verbatim and the researcher took notes during the process. Issues related to confidentiality and accuracy of notetaking were taken seriously during the research.

Structured interview schedules were used with adequate space provided after each open-ended item to facilitate responses. Thereafter, follow-up interviews were conducted to obtain further clarification on some responses. The respondents were reminded on a weekly basis to complete interview schedules by means of electronic mail, telephone calls and personal visits by research assistants. The services of record officers were sought to retrieve the files of the students selected for review from the archives of the School of Graduate Studies at the university. Each file was thoroughly read from the first to the last document. In this process relevant data, such as date of first registration, appointment of supervisors and thesis topics, were recorded.

The structured interview schedules for both students and supervisors were pre-coded. By coding the items, it was possible to count frequency of responses in terms of ideas, themes and words. It also made it possible to categorise items; identify patterns and variables; and synthesise various accounts into coherent evidence from the responses. Written responses to some of the interview questions and responses to open-ended questions in the questionnaire were analysed qualitatively by keeping track of the responses given and teasing out the meaning of ideas expressed by the respondents into coherent themes. It was possible for the researcher to distinguish between dominant views and minority views and themes that emerged from the responses, since the structured interviews and open-ended interviews were coded. Some responses to the structured interviews were reproduced verbatim in order to support specific characteristics that emerged from the accounts.

Through document analysis, very useful data were obtained from the selected case files. These records provided documentary evidence of the experiences of student respondents and a clearer understanding of

the situations described by the respondents. Themes were derived from the summarised data on each of the case files for analysis and discussion.

Trustworthiness is always assured by obtaining the same results when the research is repeated and credibility when research measures what it is intended to measure (Bovee & Thill, 2011). Interviews allowed the researcher to follow up on misunderstood items and inadequate responses, which generally promotes validity. In light of the above information, all the interview schedules were self-administered, which offered the opportunity to pose follow-up questions to the respondents personally. Another way of ensuring instrument reliability and validity was to construct interview schedules carefully to ensure that each question was related to the research topic; and to cover adequately all aspects of the research topic in the research questions. The use of interviews and document analysis for data collection ensured triangulation, which further underscores the reliability of the research.

Patton (2002) proposed a simplified model of seeking the consent of respondents and interviewees in qualitative surveys, suggesting that opening statements should be designed in a manner that would provide answers to questions such as: What is the purpose of collecting the information? How will it be used? What questions will be asked in the interview? The consent of all potential respondents was sought beforehand by emailing consent letters to them. This was done to introduce the researcher and explain the reasons for seeking the respondents' views in the subject area so that they would feel free to express their views.

To disabuse the respondents of any doubts concerning the research, the purpose of the research was indicated in the prior consent notices and on the questionnaire. Tape recorders were used to record responses and the interviews were held without the presence of other people. The prior consent of all interviewees was sought in writing; therefore, establishing a good rapport before, during and after the interviews. Confidentiality was also ensured by reassuring the respondents at the beginning of the interview that their responses are strictly confidential and would only be used for the purpose of the research. Finally, the respondents were also given the opportunity to ask questions to clarify any doubts they had about the study.

## FINDINGS AND DISCUSSION

The interviews revealed a number of reasons or causes of extended candidature among postgraduate students at the University of Ghana. The interview responses and open-ended statements pointed to specific causes, which were analysed and grouped into four main themes for ease of reference, understanding and relevance to the objectives of the study, namely time, personal circumstances, distance from campus/supervisor and finances.

Most postgraduate students who combined studying with work were not able to devote adequate time to their studies. The qualitatively analysed data and student case files of extended completion students clearly indicated that the students had full-time jobs at the time they enrolled for their studies. The challenge of managing time for work and study rested with the students. One doctoral student (DS1) replied in this regard:

I was combining my job with numerous other commitments, this was not easy, which I could have done it another way.

One of the master's students (MS3) stated:

My problem was time, if I had enough time I would have completed in the prescribed period.

The job demands clearly made it difficult for them to complete their studies in the designated timeframe. A doctoral student (DS5) explained:

Although I was officially on part-time study leave, I didn't have free time assigned to do the thesis, so I combined full-time work and periodically did the work on part-time.

Another participant, a master's student (MS7), commented:

Most graduate students work to provide for themselves and their dependents, this makes it difficult from them to concentrate on their academic work.

One of the supervisors (S1) added:

The main problem was with students not working hard enough on their theses because they were working elsewhere.

Evidence in two student case files (DS4 and MS2) showed that the students did not complete their studies on time due to time constraints. They had to juggle their studies and work and could therefore not make progress. One supervisor (S5) commented in this regard:

Students couldn't complete data collection because they were working; sometimes students get employed in their thesis year and drop out. Others simply lacked focus or didn't set the right priorities.

Another supervisor (S3) shared her opinion:

One of my students in my department was incapable [of] pursuing a PHD even though she had sufficient background qualifications,

while another one (S1) added:

My one student was simply not focused and consistently expended his energies on other things (moonlighting) instead of completing his research.

It is evident from the personal confessions of students and their supervisors that this obstacle resulted in a challenge for them and therefore prevented them from completing their research work and submitting their theses on time, with the consequence of delayed or extended completion.

In addition to time constraints, personal circumstances were cited as another obstacle to successful completion of studies. Evidence in three student case files (DS10, DS5 and MS2) indicated unexplained circumstances and inability on the part of students to communicate their challenges, which resulted in lapsed candidature or non-completion of their studies. When these three respondents were questioned about the issue, two were prepared to elaborate: One of the doctoral students (DS5) stated the following:

I had problems with my marriage, therefore I could not focus on my study, I had to save my marriage, this was more important at that time.

A master's student (MS2) added the following:

I had health problems for two years that has made it very difficult for me to focus on my postgraduate studies; I had to take extension due to ill health, I had surgery.

Personal challenges, such as family constraints or misplaced priorities like becoming involved in more lucrative ventures ('moonlighting'), employers' inability to grant students study leave and poor performance at the course work stage in the instance of master's students, were also cited as reasons why they did not complete their studies on time. The inability of some students to communicate the difficulties they encountered during their studies also contributed to non-completion or dropping out of the system. One student (DS10) explained as follows:

I did not know where to go; I had personal problems and issues that I could not discuss with my supervisor or other students; I did not have any support structure.

Besides personal challenges such as family demands (especially from students who were married) and health issues, qualitative data from student responses also revealed other issues such as the lack of access to libraries and internet services due to the distance between their residences and institution of study as reasons for slow throughput. One student (DS) commented in this regard:

I was stationed in a very deprived area where I had difficulty in accessing good libraries and internet services.

Most postgraduate students were unable to get financial support for their studies due to inadequate sponsorship opportunities or sources of funding to meet the high costs of research, especially in the sciences. One student (MS4) commented:

I had to ask for extension due to lack of funds to conduct field research in good time, and this results in the late return of results for samples sent abroad for analysis.

Another student (DS7) added:

I could not complete on time because I had to start working in the factory when my father had a fatal accident and could no longer assist me.

A supervisor (S2) replied:

Students with financial problems were engaged in full-time or part-time employment, and it appears some students wanted to guarantee themselves reasonable job security on completion of the programme.

Another issue cited by respondents was the high fees charged for postgraduate studies at universities. One student (DS4) stated the following:

We are charged way too much. Government should force our public universities to charge realistic fees.

One supervisor with experience in other countries added:

The model in countries which allowed its universities to charge full fees for certain market-driven and highly sought degrees and afterwards return such full fees to assist the needy or sustain the less subscribed disciplines, may be considered for Ghanaian public universities.

In this regard it is worth noting that some private tertiary institutions in Ghana are already making great strides in this direction.

The lesson to be learned from these discussions is that all students interviewed encountered personal as well as institutional problems and challenges during their candidature. The challenge is how they should handle these issues so that they do not escalate into more serious problems with adverse consequences like their inability to complete their studies on time.

## CONCLUSIONS AND RECOMMENDATIONS

It is evident from the literature and findings from this study that student retention and throughput is a well-researched area and that ample efforts are being made to address the challenges of student attrition, low success rates and poor throughput in higher education, not only in Ghana, but also globally. Earlier studies cited above show that this had been a long-standing challenge suggesting difficulties in resolving these issues. The holistic strategies implemented by the University of Ghana are in line with international best practice models evident in the existing literature. To this end, much more research exists on why students fail to persist as opposed to why they succeed. By focusing on what students are doing right instead of what they are doing wrong, new aspects of successful student experiences may be illuminated, which can be applied to support all students.

A historical look at postgraduate retention reveals that empirical study of this phenomenon has grown considerably over the last 50 years. Researchers are concerned about the variables related to student persistence on postgraduate level and identifying best practices to encourage degree attainment. Tinto's theory of student retention (Tinto, 2010) remains a seminal theory important to the field; however, applications of motivational theories to postgraduate retention over the last decade have brought many new and interesting perspectives to retention study and practice. Specifically, practitioners such as academic advisors have been interested in attribution theory.

In conclusion to this study, the following recommendations can be made to deal with each of the reasons that the respondents cited that resulted in the current situation of student throughput and retention at the University of Ghana. It is recommended that an effective student retention programme be introduced at the university that, *inter alia*, focuses on the following:

- *Commitment to the students they serve:* Student welfare must be put ahead of other institutional goals. In other words, institutional goals should always have a direct or indirect relationship to student success and achievement.
- *Commitment to the education of all students and not just a few of them:* The evaluation of services, programmes and activities that are offered to students must include all constituencies.
- *Commitment to the development of supportive social and educational communities in which all students are integrated as competent members:* All students who arrive on the campus must feel that they are valued and full members of the community. This also means that the expectations of achievement and behaviour should be the same for all students.

The university should consider establishing a postgraduate research endowment fund (PREF) to support research at postgraduate level. This initiative was very effective in countries such as Australia (Sondlo, 2016). As the name indicates, such an endowment fund should be established solely for promoting postgraduate research, especially at doctoral level. The private sector and industry should be obvious targets for resourcing this fund. The PREF could be used to augment the current levels of the University of Ghana's fellowship for doctoral students. The number of recipients could be expanded to cover more beneficiaries.

Students who have a problem with personal planning and an inability to focus on their studies are advised to seek counselling from those who have been through postgraduate studies or from the university's

academic departments. In addition, students can enquire about the costs involved in studying their programmes of choice, research and other necessities involved in the entire programme to enable them make an informed decision. According to Boughey (2015), counselling has been an effective way of addressing the problem of student throughput in the US.

Additionally, recent retention research has used theories of expectancy, goal setting, self-efficacy, academic self-concept, motivational orientations and optimism (Thomas, 2015; Sondlo, 2016). Research on optimism and individual strengths and focus on the positive psychology movement, have all been notable additions to the study of student success in postgraduate studies. These applications may hold great promise for the future of retention research.

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