Design and Implementation of a Student Biographical Questionnaire (BQ) Online Platform for Effective Student Success

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Abstract

Knowing relevant information about students entering the higher education (HE) system is becoming increasingly important, thus enabling higher education institutions (HEIs) to design effective student-centred support programmes. Therefore, HEIs should ascertain all relevant information about their students before the commencement of the academic year. Doing so means that institutions have a head start in understanding the types of support that will be required for different students throughout the year. This article describes the design, implementation and application of a student biographical questionnaire (BQ) online platform at the University of the Witwatersrand (Wits), as well as some of the lessons learned in this regard.

The BQ online platform was fully implemented for the first time in January 2016 during the student registration process and has now become an integral part of the university student registration process. Once data collection and analysis is done, a BQ report is compiled and presented to various high-level decision-making structures of the university. The Faculty Student Advisers are the most critical users of the BQ data, as they utilise the data to inform and improve the various student support interventions that each faculty is providing. The planning process for BQ data collection includes questionnaire review; updates on the BQ online platform; testing of the BQ online platform; stakeholder meetings and BQ training of involved stakeholders. Some of the lessons learned when implementing this online platform include buy-in and support from University Management; understanding of the BQ online platform by those dealing directly with students during the registration process; and continuous review and improvements of the BQ online platform. The BQ online platform has proven to be a valuable tool in providing Wits with a head start in understanding the needs of the students and the support they might require to succeed in their first year of study.

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Introduction

The South African higher education system currently accommodates almost a million students in public university institutions (CHE, 2016). This has been made possible by government's deliberate attempts to achieve massification and improve access, particularly by students belonging to previously disadvantaged groups (CHE, 2013).

Both internationally and locally, students coming into the higher education system are faced with increasing levels of responsibility and significant challenges (Civitas Learning, 2018; Kuh et al., 2007; Selesho, 2012; Wilson-Strydom, 2010). In addition, the transition to higher education presents a substantial turning point for students, in both academic and social aspects (Bojuwoye, 2002; Nel, Troskie-de Bruin & Bitzer, 2009; Tinto, 1993).

In the South African context, a number of studies have been conducted at the various higher education institutions (HEIs) with the aim of trying to understand and highlight the importance of student transition from high school to university (Bitzer & Troskie-de Bruin, 2004; Bojuwoye, 2002; Kotzé & Kleynhans, 2013; Nel, 2008; Nel, Troskie-de Bruin & Bitzer, 2009; Selesho, 2012). A study conducted by Wilson-Strydom (2010) found that the transition experience was difficult for almost all the respondents, irrespective of whether the students came from schools considered as having good resources and academic performance or not. Four categories of transitional issues from school to university were identified in a study conducted by Nel (2008). These categories are: Academic − which include unrealistic academic expectations and lack of academic skills; Social − which include the lack of parental and social support; Cultural − which relate to diversity, minority or previously disadvantaged groups and social integration; and Socio-Economic or Financial − which relate to students worrying about payment of their tuition fees, textbooks, transport, accommodation and other associated costs.

The term "at risk" is generally used to describe students who are more likely than other students to attrite from HE systems, based on a number of documented factors (Tinto, 2014). At-risk students tend to require higher levels of academic and non-academic support from the university, because they are likely to find the transition to university even more challenging than the average student (Selesho, 2012; UFS CTL, 2018).

Early-warning systems are systems which enable easy identification of at-risk students who usually require extra academic and/or non-academic support before, and/or early in the course of the academic year, with the primary objective of providing such students with support before it is too late and their chances of success are compromised. Research suggests that waiting until mid-year examinations is often too late to provide students with the necessary support that they might require to succeed (Hundermark, 2018; Kotzé & Kleynhans, 2013; Kuh, 2008; Kuh et al., 2007; Tinto, 2014). Instead, the use of early-warning systems can serve as a preventative approach that protect students against premature attrition from HE systems (Tinto, 2014; UFS CTL, 2018; Varney, 2012). Early-warning systems can take various forms and involve several strategies, that can be used prior to and throughout the academic year.

It is important to note that as a population, first-year students experience high attrition rates in HEIs, but there is immense variation amongst these students. Iteratively, this alludes

to the importance of knowing relevant information about the students entering the system, so that interventions and support programmes can be student-centred, as opposed to one-size-fits-all (Bitzer & Troskie-de Bruin, 2004; Hundermark, 2018; Kuh et al., 2007). Additionally, this highlights the importance of tailoring student support in nuanced ways, considering all the different factors that make up the experience of the incoming student.

Academically, a significant problem for students entering the HE system is under-preparedness. Under-preparedness is caused partly by the interdependence and lack of coordination between tertiary, secondary and primary education, where dysfunction in one of these sectors initiates negative consequences in the others (Chetty & Pather, 2015; SANRC, 2017; Selesho, 2012; Wilson-Strydom, 2010). In South Africa (SA), greater synergy between primary, secondary and tertiary education sectors would likely facilitate easier university transitions for students (Strydom et al., 2016). However, at local and global levels, many government and/or public schools face continued challenges that prevent the adequate delivery of teaching and learning services to primary and secondary students, with significant deficits in resources such as qualified teaching professionals, funding, textbooks and safe and/or functional learning facilities (Chetty & Pather, 2015; Grayson, 1997; Nel, 2014; Webbstock, 2016).

Predominantly, academic challenges arise not because students are academically untalented, but partly because they often have no clue of what university experiences might encompass. Internationally, more especially in SA, these academic problems are experienced more profoundly by students with low levels of proficiency in the English language. At most HEIs, English is the predominant medium of instruction (Bojuwoye, 2002; Kerr, 2018; Kotzé & Kleynhans, 2013; Nel, 2014). Hence, in cases where students are not proficient in the language, they encounter serious difficulties in understanding course material in order to fulfil minimum academic requirements.

Local and international literature has foregrounded numerous non-academic challenges that students face in HE systems (Chetty & Pather, 2015; Kuh et al., 2007; Nel, 2014; Selesho, 2012; Tinto, 2014; UFS CTL, 2018; Webbstock, 2016; Wilson-Strydom, 2010). As is the case with academic challenges, non-academic challenges are multiple and complex, arising for many, interlinked reasons. Primarily, non-academic challenges occur because students entering HE systems often do so from historically-underserved and disadvantaged positions. As such, many students lack the cultural capital that is necessary in order to make successful transitions to HE environments (Chetty & Pather, 2015; Kerr, 2018; Kuh et al., 2007; Nel, 2014). However, financially-related challenges tend to be particularly prevalent for students – especially if they originate from economically-challenged backgrounds. Literature highlights the intensity of the financial challenges encountered by university students, suggesting that academic pressures are often augmented because of non-academic stressors. First-generation students, tend to be even more vulnerable to financial stress than others (Kuh et al., 2007; Nel, 2008). This evidence reveals that students do not leave socioeconomic inequalities behind when entering systems of HE (Tinto, 2014).

Realistically, it is not possible for HEIs to address every challenge of the student experience – especially because these institutions have little control over students' pre-entry characteristics (Tinto, 2014). Pre-entry characteristics include aspects such as socioeconomic background; family situation; health status; educational experience; attitudes; behavioural aspects and skillsets (Kuh et al., 2007; Nel, Troskie-de Bruin & Bitzer, 2009). For these reasons, pre-entry student attributes have been identified as fixed – existing outside the parameters of institutional student success interventions (Tinto, 1993; 2004; 2006; 2014; Nel, Troskie-de Bruin & Bitzer, 2009). However, despite having little control over students' pre-entry attributes, HEIs can engage in purposeful, intensive practices that can contribute towards transformation and greater success for the students coming into the HE system.

Research suggests that HEIs should ascertain any and all relevant information about their students before the commencement of the academic year (Bitzer & Troskie-de Bruin, 2004; EAB Global, 2018; Hundermark, 2018; Kuh et al., 2007; Tinto, 2014). Doing so means that institutions have a head start in understanding exactly the types and levels of academic and/or non-academic support that will be required for different students throughout the year. Identifying at-risk students calls for reliable, consistent data on all the students entering the institution (Hundermark, 2018; Kuh et al., 2007; Tinto, 2014). This data gives the institution a greater understanding of academic and non-academic needs of students entering the system. While pre-entry factors do not necessarily fall within the institution's direct control (Tinto, 2014), gaining insight into these aspects may assists HEIs in understanding how to serve their students in optimal ways to ensure success (Chetty & Pather, 2015).

The above gives an account of the intricacy of factors linked to the student experience and student academic outcomes in HEIs. It renders the traditional variables of race and gender inadequate in penetrating the depth and complexity of a modern student, 25 years postapartheid. Student characteristics, even within the same race and gender groups, are no longer homogenous (Parker, 2006). It is therefore critical that HEIs begin to collect more detailed and relevant data on students in addition to traditional proxies, as these may not sufficiently capture the length and breadth of student needs. To this end, this article aims to describe the design, implementation and application of a student biographical questionnaire (BQ) online platform at the University of the Witwatersrand (Wits), Johannesburg, commonly known as the Wits Student BQ, as well as some of the lessons learned in this regard.

University Context

Wits is a research-intensive university located in the centre of the Johannesburg metropole, the economic hub of SA. With five faculties consisting of 34 schools, Wits registered about 39 000 students in 2018 of which 64% were undergraduates and 36% postgraduates. About 6 000 first-year students constituted the undergraduate student population in 2018, making this a significant proportion of the undergraduate student population.

Wits has committed through its Learning and Teaching Plan (2015/2019) to broaden the participation of students from diverse backgrounds (rural, black, female, disabled, and

mature students) and to provide them with appropriate support for achieving greater success with access.

In 2015, as part of the Kresge Foundation funded project known as the Siyaphumelela 'We Succeed' initiative, Wits started designing the student BQ online platform. In 2016, the online platform was implemented and the student BQ information was collected for the first time from all first-year undergraduate students. One of the main objectives of the Wits Siyaphumelela project was to obtain a comprehensive understanding of the students coming from high school to Wits in an attempt to establish their readiness for university, understanding how the socioeconomic background would influence their chances of success at university and the relevant interventions that they may require to succeed in their first year of study.

Conceptual Framework

This work is guided by Tinto's Longitudinal Model of Individual Departure (1993), which suggests that a student's withdrawal, defined as the departure of a student from a university campus, is based on a cascade of experiences over a period of time which includes prior schooling, institutional experiences and their level of integration. Tinto's model describes that students enter the institution with differing family backgrounds, including social status, parental education and size of the home community; personal attributes, namely gender, race and physical handicaps; skills, namely intellectual and social skills; financial resources; dispositions (intentions and commitments); and various pre-university educational experiences (such as high school results).

Tinto's model highlights how institutional commitment plays a fundamental role in supporting the integration of students in formal and informal structures of the academic and social system, empowering them to persist. According to Tinto, some students are unable to cope with the demands of the university environment, both social and intellectual. These students are usually unable to make the necessary adjustments and eventually withdraw. The lesser a student is integrated into the academic and social communities of the institution, the more likely the student will withdraw. External demands placed on students, like family support and work obligations, can also influence a student's decision to withdraw. When the academic and social systems of the institution provide inadequate support to students, the additional external demands placed on the student can result in increased intentions to withdraw (Tinto, 1993).

The framework for pre-university intervention (Nel, Troskie-de Bruin & Bitzer, 2009) suggests that universities can play a role at school level to prepare prospective students more effectively for university studies and thus facilitate an easier school–university transition. The framework proposes three levels of the student transition phase, namely pre-entry, enrolment or access and post-enrolment. It points to the interdependence of factors that play a role at school level before students enter university and in their transition to HE. There are various academic, social, emotional, cultural and financial factors that impact on the transition. These factors are interdependent, and no single factor can be regarded as being more important than the others.

Design of the BQ Online Platform

BQ process

The student BQ online platform was fully implemented for the first time at Wits in January 2016 during the student registration process with the approval of the University Registrar and Deputy Vice-Chancellor (DVC): Academic. However, the initial attempt of incorporating the BQ online platform as part of the standard registration process in 2016 was accompanied by serious technical problems. This challenge delayed the student registration process as well as the achievement of the Wits enrolment targets timeously. The online platform was then suspended until the technical problems were sorted out. This resulted in the collection of the student BQ data using a paper-based approach in 2016. Subsequently, the technical problems associated with the BQ online platform were successfully resolved and the online platform has since become part of the student registration process.

The BQ collects information on student background from all first-time first-year undergraduate students. Table 1 depicts the questions contained in the student BQ online platform. The BQ data is then stored in the student information management system (SIMS) together with the rest of the student information already existing in relation to student application and the registration processes.

Table 1: Questions contained in the student biographical questionnaire (BQ) online platform

Personal Information*	Home Information	School Information	University Information
	Facilities at home	Location	Tuition payment
Special needs (disability)	Location	Classification#	Accommodation payment
	Home language	Facilities at school	Living expenses payment
	First-generation status	Language of instruction	Accommodation arrangements
	Education background	Class size	Mode of transport to university
	Economic status	School fees payment	Distance travelled to university
	General support provision	Mode of transport to school	Part-time employment
	Parent(s)/guardian occupation	Usage of online apps/sites	Fears/concerns about 1st year at university
			Registered for 1st/2nd/3rd choice of study
★ *Personal Information includes additional personal, matric and demographic information obtained by joining the unique student identifier (student number) to other information available on SIMS. Student ID is automatically populated since the students complete the questionnaire online using their student profile.*			

Personal Information★	Home Information	School Information	University Information
# *Classification includes school quintile information which is obtained from the Department of Basic Education (DBE) database using the school Education Management Information System (EMIS) numbers. The Quintile system is used by the South African Government mainly for the purpose of distributing school allocation, which is the amount of money that the government gives to public ordinary schools every year. Schools belonging to Quintile 1 are considered to have poor resources whereas Quintile 5 schools are considered to be well resourced (Mestry & Ndhlovu, 2014).*			

The BQ online platform has been designed by the Wits ICT and Academic Information and Systems Unit (AISU) teams (in collaboration with the AIR unit) in such a way that when a student completes his/her online registration, by clicking the 'Complete/Submit' button, on the Wits Self-service portal, a link for the student BQ online platform appears immediately with further instructions on how to complete the questions and navigate the BQ online platform.

Alternatively, a student is able to complete the BQ questions at a later stage by signing into the University's Student Self-service Portal. The easy-to-use BQ online platform is located on the 'Additional Self-service' page with instructions and tips on how to complete the questions. Figure 1 is a screenshot representation of the first page of the BQ online platform.
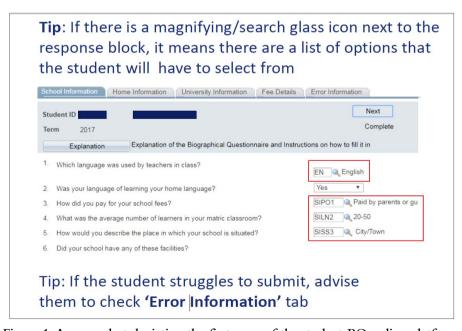

Figure 1: A screenshot depicting the first page of the student BQ online platform

Monitoring of BQ data collection

As soon as students start completing questions on the BQ online platform, an electronic submission report is generated daily. The BQ Daily Submission Report contains figures on the total number of first-year students who have completed their registration, total number of first-year students who have completed the BQ questions and total number of first-year students who have not completed the BQ questions. These figures are further categorised based on the five faculties to reflect the BQ completion rates per faculty.

A BQ Weekly Submissions Report, containing a high-level summary of completion numbers per faculty and some of the key findings at that point of data collection (i.e. first generation, tuition payment plans, fears and concerns, etc.), is distributed on a weekly basis, to the Wits Student Success Steering Committee, a structure that is driving the student success agenda at Wits. The committee is made up of the DVC: Academic, University Registrar, Dean of Student Affairs, Assistant Deans for Teaching and Learning from each faculty and Head of AIRU, amongst others.

Using data from the BQ submission reports, follow-up emails are sent (using the BQ help desk email) to those students who have not completed the questionnaire by the end of weeks 3 and 4 after the commencement of the registration process. By the end of week 5, a short message (SMS) campaign is undertaken with the assistance of the Student Enrolment Centre. During this campaign, SMSs are sent out to students who have not yet completed the BQ. By the end of week 6, a call campaign is conducted with help from the University's Call Centre. The Call Centre agents call each student who has not completed the questions on the BQ online platform, encouraging the students to complete the BQ questions and providing assistance where necessary. All these monitoring initiatives have a significant impact on the overall responses from the students (Figure 2).

In ensuring that most of the first-year students are able to complete the BQ questions before the start of the academic programme and that they are provided with the necessary support in this regard, the university Orientation-Week (O-Week) Digital Literacy sessions are also utilised to train and assist students on how to complete the BQ using the online platform.
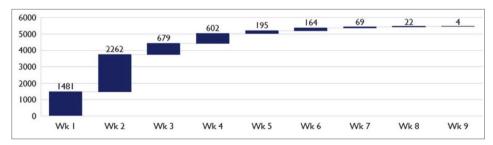

Figure 2: Number of questionnaires completed by students at the end of each week after commencement of the registration process in 2019

BQ data collation and analysis

The Power Business Intelligence (PowerBI) and Tableau software are utilised when linking and visualising the collected BQ data with other student datasets (e.g. matric results, school quintile, etc.). Approved and designated institutional researchers are responsible for the analyses of the BQ data. The overall student BQ response rate has improved significantly since the start of the project in 2016 (Figure 3). In the last four years, the BQ response rate has increased by 19% to 99% (i.e. Total Respondents = 5 478; Target Population = 5 595) in 2019.
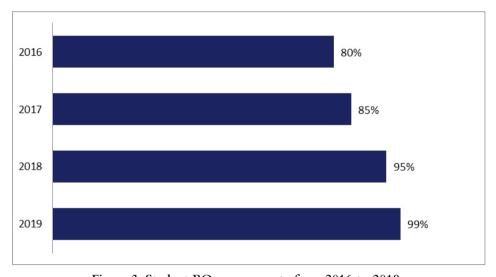

Figure 3: Student BQ response rate from 2016 to 2019

Use and Application of the BQ Data

An official student BQ report is published based on the collected and analysed BQ data for the current academic year. The BQ report is presented to the various decision-making structures of the university including the University Council, University Forum, Senior Executive Team (SET), Senate: Teaching and Learning, and Student Success Steering Committees, amongst others.

In addition, the BQ report is made available to the faculties and schools, student support departments and other student success stakeholders in the university. The Faculty Student Advisers (formerly known as the Faculty At-Risk Coordinators) are the most critical users of the BQ data as they utilise the data to inform and improve the various student support interventions that each faculty is providing to the students to ensure that the students succeed in their first year of study. The student BQ data for faculties is packaged into an easy-to-use dashboard (Student success dashboard using Tableau and PowerBI) based on the requirements and needs of each faculty.
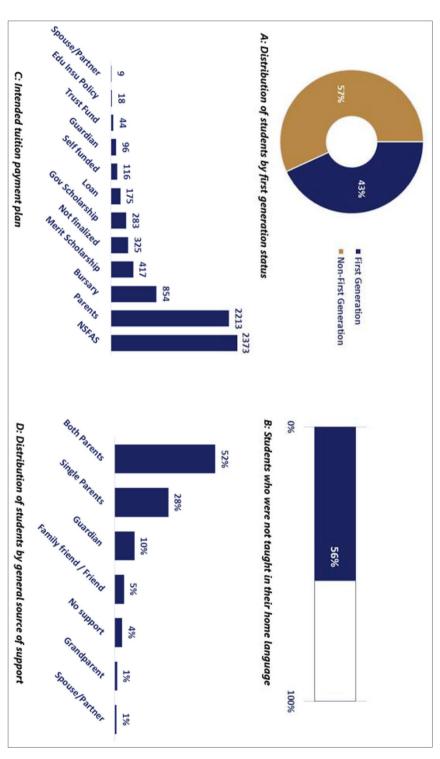
A: Distribution of students by first generation status

57%

43%

■ First Generation
■ Non-First Generation

C: Intended tuition payment plan

Spouse/Partner 9
Edu Insu Policy 18
Trust Fund 44
Guardian 96
Self funded 116
Loan 175
Gov Scholarship 283
Not finalized 325
Merit Scholarship 417
Bursary 854
Parents 2213
NSFAS 2373

B: Students who were not taught in their home language

0%

56%

100%

D: Distribution of students by general source of support

Both Parents 52%
Single Parents 28%
Guardian 10%
Family friend / Friend 5%
No support 4%
Grandparent 1%
Spouse/Partner 1%

Figure 4: An example of some of the variables analysed from the 2019 Student BQ data. A: Distribution of students by first-generation status; B: Students who were not taught in their home language; C: Intended tuition payment plan; D: Distribution of students by general source of support. Edu Insu Policy = Education Insurance Policy; NSFAS = National Student Financial Aid Scheme.

Since the main aim of this article is to reflect and describe the process of designing, implementation and application of the BQ online platform at Wits, only four variables shown in Figure 4 will be discussed in detail. The four variables are First–generation Status, Language of Instruction, Mode of Tuition Payment and General Source of Support, information that is critical in understanding the incoming first–year students and in the planning of responsive student support interventions by the various faculties.

In 2019, 43% of the first–year students studying at Wits were first generation, meaning that these students were first in their families to study at a university (Figure 4A). Studies have shown that first–generation students tend to have higher attrition rates than their peers; they often experience more difficulties and challenges in transitioning and adapting to the new university environment and tend to lack adequate family support (Pascarella, Pierson, Wolniak & Terenzini, 2004; Selesho, 2012; Wilson-Strydom, 2010). First–generation students often have parents with lower levels of academic achievements; as a result these parents lack the requisite parental support and understanding of the university environment necessary to encourage their children during their studies (Fike & Fike, 2008; Nel, Troskie-de Bruin & Bitzer, 2009).

More than half of the first–year students (56%) at Wits were not taught in their home language, meaning that their home language is not English (Figure 4B). Students' low levels of proficiency in the language of instruction have been shown to have an impact on the academic performance of the students. The lack of confidence in English deters them from participating fully in class or consulting with lecturers (Bojuwoye, 2002). In addition, students who have the language of instruction as an additional language were found to have difficulty in understanding the course material (Eisleen & Geyser, 2003).

The majority of the first–year students were relying on their parents and the National Student Financial Aid Scheme (NSFAS) for tuition payment (Figure 4C). A concerning number of the students had not yet finalised their tuition payment plans at the time of registration. Students with financial difficulties, such as challenges in the acquisition of funding to pay tuition fees, residential accommodation, food and other necessities like clothes and textbooks, have been found to experience additional stress during their studies (Bojuwoye, 2002). The additional stress has a negative impact on their retention and academic success. These students tend to have difficulties in concentrating on their studies as they worry about whether they will be able to complete their studies (Hundermark, 2018). On the other hand, research has shown that students who receive financial support tend to have high retention rates (Fike & Fike, 2008).

Almost half of the first–year students (52%) were receiving general support from both parents while studying at the university, while 4% had no general source of support (Figure 4D). Nel's framework for pre-university intervention largely fits into the context of general source of support for students. Nel and co-workers (2009) argue that a support network, such as parents, plays an important role in the successful transitioning from school to university, especially with regard to the emotional well-being of students. They further argue that the support role that parents play in the transition phase is essential to students' successful adjustment, regardless of their own educational level. A stronger likelihood

of attrition of students who came from single-parent households was observed in exit interviews conducted with students who deregistered in 2015 by Hundermark (2018). The role that friends and peers play as support structures has been found to be increasingly important in the transition phase (Nel, Troskie-de Bruin & Bitzer, 2009).

Hence, it is important for HEIs to understand such information about the new incoming first-year students as this may provide insights on the challenges that might be experienced by the students and the relevant support they may need to succeed in their first year of study.

BQ Planning for the Following Academic Year

The planning process for BQ data collection for the following academic year begins in the early part of the second semester of the current academic year. The following stages form part of the BQ planning process:

• **Questionnaire review**: This stage entails critical reviewing of the questions in the BQ online platform by the various faculties and student success stakeholders. Ambiguous questions are rephrased for better clarity; redundant questions are removed; and new questions are added, depending on the current problematic areas faced by students and the university.

• **Updates on the BQ online platform**: The ICT and AISU teams update the BQ online platform based on the technical glitches/problems encountered by students during the data-collection period in the current academic year.

• **Testing of the BQ online system**: Just before the end of the current academic year and at the beginning of the new academic year, the BQ online platform is tested by various stakeholders for operational accuracy and optimal performance. Any concerns/challenges uncovered through this exercise are communicated to the AISU and ICT teams for rectification.

• **Stakeholder meeting**: All the stakeholders who are affected and involved with the BQ data collection process (e.g. Student Enrolment Centre, ICT, AISU, Registrar's Office, Faculty Registrars, Student Affairs, Call Centre and Marketing) are invited to a planning meeting where they discuss the challenges encountered with the BQ data collection in the current academic year and ways of improving the whole BQ process going forward. Timelines for the data collection in the new academic year are also discussed in detail and agreed upon.

• **BQ training of involved stakeholders**: All the stakeholders who deal directly with students during the registration process are trained on how to navigate and complete the BQ online platform as well as how to answer the most frequently asked questions. This training takes place just before the start of the registration process and conducted by one of the institutional researchers.

Lessons Learned

Below are some of the lessons that were learned through the process of implementing the student BQ online platform at Wits:

• **Buy-in and support from University Executive Management**: This is one of the most critical aspects when introducing a new initiative such as the student BQ online platform which will have an impact on the overall student registration process and student success at an institution. Romano (2018) argues that leading student success is less about pursuing numerous initiatives but more about changing the culture of a university. He further states that articulating the reason for change and helping others understand why change is needed, must precede any conversation about new initiatives. Hence, it is essential for university leaders to invest first in building and maintaining a culture of student success – a culture that should permeate the university with the ultimate aim of improving the student experience.

Buy-in is broadly defined as a personal and professional commitment to actively engage in a process, task or initiative (French-Bravo & Crow, 2015). In their study, Thomson and co-workers (1999) constructed a two-dimensional emotional–intellectual matrix to visualise levels of commitment and understanding. Their findings demonstrated that the higher the understanding and commitment of a leader, the stronger that leader will advocate for the implementation and success of a new initiative.

• **Involvement of all university stakeholders dealing with student success**: For this initiative to be successful, the reasons and benefits of collecting the BQ data should be appreciated by these stakeholders. This is the university sector that gives inputs on the current areas of student success that require urgent attention, thus identifying and proposing new questions to be added to the BQ tool.

Romano (2018) posits that improving student success will not be the result of one initiative or the work of one unit or department; it will be the result of collective effort at the university with the aim of breaking down the silos and focusing holistically on students. It must be borne in mind that students do not see universities as the units or departments on which the institutions are structured; they see only one institution. As a result, the involvement of all university stakeholders dealing with student success is essential when implementing an initiative such as the student BQ.

• **Understanding of the BQ online platform by stakeholders dealing directly with students during the registration process**: Personnel dealing with student registration and enquiries are at the forefront when it comes to questions raised by students regarding the BQ online platform. Provision of relevant training to these stakeholders is critical in ensuring the success of this initiative.

Effective communication, including clearly articulated and relatable desired outcomes and goals to reach those outcomes, have been cited by Thomson and co-workers (1999) as essential components for the stakeholders responsible for implementing a new initiative such as the BQ. Trust in the competence and experience of those implementing the initiative, and in stakeholders participating in the initiative has also been shown to be important (Dooley & Fryxell, 1999).

• **Sharing of the BQ data and findings with faculties**: The most effective use of the BQ online platform lies in the ability of sharing the BQ data with the faculties as early as at the start of the academic programme so that the faculties are able to use this data to

inform and improve the student support programmes that they are providing to students. In addition, the data can assist teaching staff with improving their teaching strategies to effectively communicate with and support students. This is the premise for using early-warning systems, such as the BQ data, to ensure that students are provided with the necessary support before it is too late in the academic year (Hundermark, 2018; Kotzé & Kleynhans, 2013; Kuh, 2008; Kuh et al., 2007; Tinto, 2014).

•   **Continuous review and improvements on the BQ online platform**: This entails a critical and objective review of the BQ online platform for identification of areas of improvements and those requiring changes. Any technical failures on the BQ online platform will negatively impact the registration of new students, which is a critical process that the university cannot afford to compromise.

Park and co-workers (2013) state that continuous improvement is not synonymous with improving all institutional processes, but rather iterative and gradual in nature. This statement is especially true in the context of the observed success of the student BQ at Wits in the last four years. Continuous improvement entails effective diagnostic review that is based on proper root cause analysis. The process generates evaluative feedback, including the identification of practices that must inform the current improvement planning, actions and decision-making. During the implementation of the initiative, relevant stakeholders regularly monitor the progress, discuss and analyse what is working or not working and make any necessary adjustments to the improvement plan (Dawson, McWilliam & Tan, 2008).

Through the continuous review and improvement of the BQ process, the following activities were identified as necessary in ensuring successful implementation:

BQ help desk

A help desk aimed at assisting students with queries related to completing questions on the BQ online platform was established in 2018. The BQ help desk has three major components:

- **Face-to-face contact**, which enables students to walk in at the AIRU office for personal assistance regarding completion of the BQ questions;
- **Electronic contact**, which enables students to send their queries using email to the BQ help email address; and
- **Telephonic contact**, which enables students to call designated staff members in the AIRU office for telephonic assistance regarding the BQ online platform.

BQ student consultants

In 2019, we introduced the use of student interns, who were deployed to the registration hall where some of the student registration activities were taking place. This ensured that first-year students were readily assisted with completing the BQ online platform, while they were finalising their registration processes.

Limitations of the Student BQ Online Platform

One major limitation of the BQ online platform is that it presents an analysis of data which is based on self-reported information by the students. Although this cannot be deemed precisely accurate given that it is based on self-volunteered information, approaches to validate and verify the data can be employed. These include triangulation of some of the BQ data variables with other university datasets such as the payment of tuition and accommodation fees as well as accommodation arrangements.

The BQ online platform is able to capture the students' circumstances as reflected by the students at the time of registration or beginning of the academic year. It is a known fact that students' circumstances undergo continuous changes and can be very unpredictable. Therefore, innovative ways are required to ensure that the BQ online platform is able to update the changes in circumstances of the students as they go through the various stages of the university to completion of their studies.

Conclusion

Student characteristics are not homogeneous; as a result, HEIs are increasingly attended by a diversity of student population from various regions and backgrounds, with markedly different academic, social, emotional, cultural and financial experiences. Knowing relevant information about the students entering the HE system can assist institutions to better prepare by providing the incoming students with the necessary support they may need to succeed.

The BQ online platform has proven to be a valuable tool in providing Wits with a head start in understanding the kinds of students that are entering the university, the university readiness of first-year undergraduate students and the support that these students require to succeed in their first year of study.

Some of the possible future research projects envisaged from the BQ data include using statistical analysis to rigorously test and validate the reliability of the BQ questions (and data thereof), identifying potential predictors for students at risk of failing and/or dropping out, and developing an evaluation framework to assess the impact of the support interventions provided to the students identified as being at risk of failing and/or dropping out.

Ethics Statement

The study was approved by the University of the Witwatersrand Human Research Ethics Committee (Protocol Number: H18/05/13).

Conflict of Interest Statement

The authors declare that they have no financial or personal relationships that may have inappropriately influenced them in writing this article.

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