

# Teaching the students we have: Two perspectives on first year students at the University of Johannesburg and the UJ First Year Experience initiative

Dr. André van Zyl

University of Johannesburg

andrevz@uj.ac.za

## Abstract

Over the past decade it has become clear that the South African Higher Education sector is marked by low participation rates coupled with low levels of student success. Although a lot of money, time and effort have been spent in trying to improve student success rates, no real systemic improvement has taken place. This paper argues that key elements of any strategy aimed at improving student success should include that it should “reach the classroom” (Tinto, 2012); it should be systemic in nature and it should be based on a thorough knowledge of the student population the institution serves. The paper then reports back on the results of research undertaken at the University of Johannesburg as well as on the First Year Experience that has been implemented at the institution since 2010. Results reported in the paper includes data from the Student Profile Questionnaire (SPQ) (used since 2006 and containing more than 30 000 records) and the Initial Student Experience Survey (ISES) (used since 2010 and containing about 20 000 records). Some of the findings from these questionnaires confirmed previously held beliefs while others were completely surprising. The data were used to inform the planning and implementation of the University of Johannesburg’s First Year Experience initiative which is aimed at assisting the institution to more effectively “teach the students it has”.

## Teaching the students we have: Two perspectives on first year students at the University of Johannesburg and the UJ First Year Experience initiative

As part of the broader transformation agenda in South Africa, higher education institutions have made good progress in terms of equity of access, but the success levels of the various groups still differ widely (CHE, 2012). This shows the practical implications of what Morrow contended in 1994, that formal access does not necessarily imply epistemological access. As a result, over the past decade, student academic success and more specifically the transition between school and university have become subject to increased academic scrutiny in South Africa. Universities have also all increased their efforts aimed at improving student success. In the United States however, it was found that despite significant resources being invested into efforts at improving student success over the past 20 years, very little real progress has thus far been made (Tinto, 2012). Effort in itself therefore does not improve student success.

Many institutions and academics have historically held the view that students who do not succeed, were just not “good enough” and they “shouldn’t have been there in the first place”. The low participation rate of 18 – 24 (18% in 2010) year olds in South Africa in conjunction with the low 5-year graduation rates (52% by 2010 for the 2005 cohort) (CHE, 2012) implies that less than 10% of 18 to 24 year olds ever achieve a tertiary qualification in South Africa. In light of the above statistics, the CHE (2013) typifies the South African Higher Education system as a “low participation, high attrition system”. This creates such a wasteful situation (of both money and talent) that it becomes clear that the historical approach of academic Darwinism (survival of the fittest, i.e. students who don’t pass were not “fit enough”) is no longer tenable in South African higher education. Lewin and Mawoyo (2014) call this situation the “single biggest challenge facing the South African public higher education system”.

Any realistic solution to the systemic problems described above will have to involve all role players such as students, schools and higher education institutions. In this paper the focus is on the role institutions can play in improving student success. Thomas (2012) states that higher education institutions have a moral responsibility to take “reasonable steps” to enable the success of the students they have admitted to their institutions. Tinto (2012) argues that one of the key elements needed for enhancing classroom effectiveness is “contextualised academic support”. He subsequently adds that interventions should be relevant to the students’ needs and goals. For many years institutions have tried a variety of approaches and activities, with varying degrees of success. The “complex and multi-dimensional” (Lewin and Mawoyo, 2014) factors influencing student success however results in a situation where fragmented and ad-hoc solutions are not likely to succeed.

For higher education institutions to be able to effectively teach the students they have, it is imperative that they develop a more in-depth understanding of who the students

they selected and enrolled actually are. By understanding better who their students are, they would be able to do what Thomas (2012) suggests, by providing for a variety of “ways of belonging” in their institutions to accommodate the diversity of students they accept. This is because a student’s success at university depends, at least in part, on their ability to develop a “sense of belonging” at the institution they are enrolling at. Many students from cultures other than the dominant culture at an institution often feel intimidated and they tend to worry about their ability to adjust to the institution that is perceived to be so different from themselves. Many institutions expect the students to be the only ones who adapt to their new environment and its entrenched ways of being and doing.

Keup (2013) however contends that universities have a social contract and social responsibility towards the societies they serve. This means institutions must effectively teach the students they have (the ones entering from their societies), not the ones they thought they had (based on perception, expectation or past experience). The demographic makeup of the South African student population has changed radically (in terms of aspects such as gender and race) over the past two decades and institutions must appropriately respond to these changes and their educational implications. Currently, institutions have, as the CHE (2013) found, “not yet come to terms with the learning needs of the majority of the student body.”

Vincent Tinto’s thinking played a major role in the international academic endeavour of understanding and improving student success. His Longitudinal interactionist approach to student persistence includes aspects such as student pre-entry attributes as well as institutional integration over time (Van Zyl, Gravett and de Bruin, 2012). Tinto specifically postulated that students have to integrate socially and academically for them to effectively persist at university. Both the level of complexity and the sociological nature of Tinto’s theory supports the concept of an institutional response to effectively improve student success.

## **Institutional context**

In the rest of this paper the data used and the institutional response to the issues described in the introduction at the University of Johannesburg is described in more detail. The University of Johannesburg, a comprehensive African-city university consisting almost 50 000 students, was created in 2005 by way of a series of incorporations and mergers of institutions from the country’s racially divided past. The institution has an annual first year intake of about 10 000 students. These students enrol for a variety of degrees, extended degrees, diplomas and extended diplomas. A basic breakdown of UJ enrolments since 2009 can be seen in Table 1 below:

**Table 1: UJ enrollment details**

Year	Headcount	African	Female
2009	49 315	80%	54%
2010	48 374	82%	55%
2011	50 028	84%	55%
2012	48 257	86%	53%
2013	47 743	87%	54%

Source: UJ HEDA downloaded from <https://mis.uj.ac.za/heda/fsmain.htm> on 9 June 2013

As is the case in the South African system, many of these newly arriving UJ students find it very difficult to adapt to the higher educational environment. Within the context of low levels of student success as well as the direction taken in the UJ Teaching and Learning strategy, it was decided that UJ would design and implement a holistic approach to all aspects of the first year experience of incoming students, with the overall goals of improving the quality of the student experience at UJ, and of enhancing the retention and ultimate graduation rate of school-leavers who commence their studies at UJ.

## Who are the UJ students?

The approach taken at UJ was that in order to implement a contextualised initiative aimed at improving student success, accurate student data were required. It is essential that the starting point for an investigation into the issue of student success should include creating a profile of incoming students. As Keup (2013) and Laskey and Hetzel (2011) contend, a profile of an incoming cohort is essential to be able to identify students at risk of failure, as well as those with a reasonable chance of success. This is also in line with the research based approach favored by the UJ First Year Experience (FYE). As part of the UJ FYE, investigations were launched into the profile of the newly entering UJ students about their initial experiences and actions. This article reports back on some of the most interesting findings of two areas of research on who the students entering UJ actually are and what they experience during the first months of being tertiary students. The two research projects were:

- The Student Profile Questionnaire (SPQ) was first used in 2006 and has since been refined to provide the institution and its Faculties with a “snap-shot” picture of each entering cohort of students. The SPQ is completed during the orientation period and the first week of class. A full account of the development and validity of the SPQ can be found in Van Zyl, Gravett and de Bruin (2012).

The results reported here are based on a database containing in excess of 25 000 records collected over the 8 year period.

- The Initial Student Experience Survey (ISES) is a one page questionnaire distributed during the sixth week of class to investigate various aspects of the student experience and interaction with the institution during their initial entry into the institution. The ISES has been in use since 2010 and consists of a database currently containing in excess of 20 000 records.

Some of the findings and trends that emerged from these questionnaires confirmed previously held beliefs while others were surprising. The data gathered from the two research projects mentioned above have been used to guide the process of re-thinking the way scholarly teaching and learning at UJ is approached. It also informs the planning and implementation of the initiatives and is being used by academics and institutional management in data driven decision-making and planning processes at UJ.

## Findings about UJ students

The complex databases that resulted from the research described above yielded massive amounts of data. In this article a small but important selection of data is presented. The findings reported below about newly entering first year students which influenced the UJ response emerged from the analyses of the data described above. The findings have been categorised into demographic, family background, academic, language/literacies, financial and life experience aspects to enable coherent reporting.

### Demographic findings

The samples of both the SPQ and the ISES were found to be representative of the UJ student population (see Table 1). For example the 2012 and 2013 samples indicated that 54.5% and 56.6% of participants were female whilst 82.2% and 79.9% were black Africans. Not only the sample representative of the UJ student population, it was also a good representation of the South African population makeup. As a result, the UJ context provides a particularly useful lens through which the South African higher educational landscape can be better understood. It also makes the findings in the UJ context more generalizable to other institutions in the country.

### Family educational background

Smith and Zhang (2010) identify First Generation (FG) university entrants as being at a higher than usual risk of not completing their studies. The proportion of students in this sample indicating that they were a part of the first generation in their respective

families to attend university was always above 50% except during 2010 when it dropped to 48.5%. However, during 2012 the proportion of FG students rose to 64.9% and it continued to be very high with 59.6% of students indicating FG status in 2013. First generation students could be further sub-divided into those who had a sibling attend university before them and those who were the very first in their families to attend university (first in family). During 2012, the “first in family” students represented 49.2% of the sample and in 2013, 44.3%. These students are less likely to have background experiences and developed practices that are congruent with ways of being and doing at a higher educational institution. They would also not have access to close family who would be able to provide them with appropriate academic and/or social support or examples.

The cultural and social capital resources of the 35% of students who reported that “many members of their families had attended university” and the 30% who reported that “neither of their parents completed grade 12” is likely differ widely. This finding concurs with Vosloo and Blignaut (2010) who stated that “the gap [between previous life experiences and the challenges posed by higher education] is deeper and wider” for these students than for traditional university entrants.

## Academic practices

One of the basic requirements of completing a difficult task (such as university studies) is that sufficient time is spent on the task to have a realistic chance of success. The SPQ investigations started by enquiring about students’ study practices (in terms of time spent outside class time on academic work) while in grade 12. Their responses gave an indication of the existing practices of newly entering students. In 2007, 41.1% of students entering university reported that they had spent 10 or less hours a week, outside of class time, on academic work. The proportion of students reporting poor study practices has steadily increased with 47.7% reporting the same degree of effort in 2013. On the other hand only between 11.3 and 16.9% of students reported spending more than 20 hours a week (outside class time) on academic activities whilst at school. This trend has constantly remained between 10 and 20% of respondents. The vast majority of students therefore arrive at university having not worked very hard whilst still having done well enough to meet the entry requirements.

In an effort to investigate if student behaviour changed once they have arrived at university, the ISES questionnaire was used to investigate the same construct as above during their first 6 weeks at university. The same question that was used in the SPQ was included in the ISES from 2011. The results are shown in Table 2 below.

**Table 2: Percentage of students reporting hours studied outside of class at week 6 at university**

	2011	2012	2013
Less than 15 hours per week	48.8%	56.1%	59.2%
Between 15 and 25 hours per week	36%	24.9%	25.1%
More than 25 hours per week	15.2%	19%	15.7%

Although there was a significant improvement in the proportion of students reporting less than 10 hours of academic work per week (approximately 26%), the improvement is very limited as can be seen in Table 2 above. At this point, between 50 and 60% of students reported spending fewer than 15 hours per week on academic activities outside class time during their first six weeks at university. From the results above it is clear that students arrive with inadequate study habits already well entrenched and these practices (in terms of time on task) seem to persist after entry into university.

## Language and literacies

South Africa's rich diversity in terms of language groups is illustrated by the fact that the country has 11 official languages. At the institution where this research was conducted, English has been selected as the main language of instruction and as a result the highly complex academic material is presented mostly in English. The SPQ research found that 60% of students consistently (62.3% in 2013) indicated that English was not their first language. Even the 37.7% who did indicate English as their first language might have over-estimated their English fluency as some of these students were not taught by English first language speakers. During 2013 three follow up questions were asked to get a better sense of the type of literacy environments that students came from. The three tables below show student responses to the question about the number of books in the home where they grew up; the number of books they read "for fun" during the last year and how they rated the English ability of the main person who taught them the English language.

**Table 3: Number of books in the house where the student grew up**

Number of books	2013
-----------------	------

None	11%
10 or fewer	30.8%
More than 10	58.2%

**Table 4: Number of books read for fun during the previous year**

<b>Books read</b>	<b>2013</b>
None	15.9%
5 or fewer	46.9%
More than 10	58.2%

**Table 5: Student perception of language level of main English teacher**

<b>English teacher</b>	<b>2013</b>
First language	60.7%
Non-first language	39.3%

Tables 3 to 5 above indicate more detail about the literacies backgrounds of newly entering students. Almost 42% of students indicated that there were 10 or fewer books in the house where they grew up and almost 63% of students had read 5 or fewer books in the previous year. The data above will be strengthened over time as more data are collected.

## **Financial aspects**

During 2007, only 34% of students reported being worried that a lack of money might prevent them from completing their studies. This changed to 41% in 2010 and 55.3% in 2011. This rising trend has continued with 59.5% of students reporting to be worried about this aspect in 2013. During this time period (2007 to 2013) the majority of students (50–55%) also continued to report that their parents would be paying for their

studies. Why then the change in number of students being worried about money? One important contributing factor in this regard is probably the rising number of students whose parents have not completed a tertiary qualification themselves and as a result will be likely to earn a lower income. A second factor is the rising number of students depending on loans (18.5% in 2007 up to a high point of 31.4% in 2012). Many of these students depend on the National Student Financial Aid System (NSFAS), which only provides for their most basic needs. The international economic downturn that has taken place over the past 5 years probably also affected South African students and contributed to their increasing worry about money.

## Life experiences

Breier (2010) points out that what is often called “financial considerations” includes real “poverty” and “socio-economic deprivation” in the South African context. This is different from students in many other countries who often only struggle to pay the high cost of education but who generally have their most basic needs met. The level of challenge faced by many of the students reporting being worried about money is illustrated by the fact that in 2013, 28.9% of students reporting that they were worried about food; 32.9% reporting that they were not happy in the place where they stayed during term time and 30.4% indicating that they had transport difficulties. The reports of these three types of problems have been rising slowly over time but have been above 20% since 2011. Many of these students share a multitude of problems with the same student often reporting problems with food, transport and accommodation. Students reporting worry about food are often poverty stricken and do not eat regular wholesome meals that would support their bodies and minds towards academic success. The worries expressed above also tend to draw students attention and/or efforts away from campus and the academic requirements of being a student.

## Developing and implementing the UJ First Year Experience

As knowledge of the profile of UJ students has grown over time, it has become very clear that traditional approaches to improving student success would not work. Terenzini and Reason (2005) called the first year at university a “make or break period for learning”. Most students who drop-out, do so during their first year of study and specific risk groups such as historically under-represented students, first generation students and low socio-economic status students (Terenzini and Reason, 2005) are at greater risk of dropping out. As Vosloo and Blignaut (2010) stated:

*While all students have to make a transition from high school to university, the gap is deeper and wider for most access students than for the traditional students universities are used to*

The majority of students at UJ can be classed as non-traditional university entrants with approximately 60% being first generation university entrants, 60% being non-English first language speakers and more than 50% having inappropriate study habits. A majority on non-traditional students necessitates a non-traditional response from universities. A more holistic, integrated institutional response is required to create an environment which allows all students a reasonable chance of success and coherently supports them towards that success. The UJ First Year Experience (FYE) is the institutional response to the issues described above. During 2010, UJ launched an institutional First Year Experience (FYE) initiative aimed at facilitating the effective transition of first year students into the UJ environment.

## Links to theory

A number of theoretical and practical perspectives were investigated during the planning phase of the UJ FYE, with investigations still ongoing. Tinto's longitudinal interactionist approach was particularly useful as a broad perspective on the complex issue of student retention. Both the longitudinal nature of the student departure/retention experience and decisions as well as the strong social links to student decision making are of specific relevance to the UJ context. The work of Astin (the role of pre-entry attributes) and a number of perspectives using the ideas of Bourdieu (with particular reference to 'cultural capital' and 'habitus') were used as additional sources. In the South African context, the work done at the University of Stellenbosch (US) had the most pronounced influence on the work at UJ. US took the lead in terms of initiatives focused on first year student success by creating a SU First Year Academy initiative. This initiative tailored many international ideas to the institutional and national context and were therefore applicable to the UJ context. The UJ FYE is an effort to move towards embodying what Tinto (2013) stated:

*Improvement in rates of student success requires intentional structured and proactive action, that is systematic in nature and coordinated in application.*

## Planning the UJ FYE

Faced with the serious and complex problem described above, UJ decided to follow the international trend that started in 1972 (Hunter, Keup & Gardner, 2011) of focusing on the first year transition of its students. The broad approach is called a First Year Experience (FYE) approach. The FYE is a combination of curricular and co-curricular

efforts across the whole institution aimed at enabling first year student success (Keup, 2013). Following a consultative process involving all relevant stakeholders, an FYE proposal document was created and approved. The following information sums up the UJ FYE approach.

## Definition of the UJ FYE

The FYE has been conceptualized as a holistic initiative which encompasses all aspects of first year student experience in the context of an invitational and equitable institution. It comprises both curricular and extra-curricular initiatives, and is far more than a single event, programme or course. It attempts to establish an ethos and a way of life, through which all first year students will experience the transition into university life.

## Principles of the UJ FYE

As part of the planning process, the following principles were developed to undergird the UJ FYE's implementation and were also informed by the UJ values.

1. The FYE is a holistic approach to the total student experience, and is an initiative of the university.
2. The FYE is embedded within the preferred UJ student experience, which begins prior to an application to UJ and ends with alumni status.
3. It is incumbent on the university to ensure that students are provided with enabling learning environments.
4. The FYE is not envisaged as simply assisting students to pass, but as enabling as many as possible to achieve their full potential.
5. The FYE requires the contribution and support of all sectors of the UJ, of both Faculties and Support Divisions.
6. An equitable First Year Experience will be based on the participation of all Faculties in terms of common principles; a common core combines with specific Faculty ethos and needs.
7. The FYE is informed by and grounded in ongoing developmental and evaluative research.
8. The FYE requires commitment from students and support and development by staff.

9. The challenge of first year teaching requires special expertise from the academic staff, who must in turn be assisted in meeting these challenges.
10. All components of the FYE strive, as far as possible, to be fully integrated.

## First phase of implementation during 2010

It was decided to follow a phased approach to the implementation of the UJ FYE. The following seven broad initiatives were identified, as constituting a first phase of implementation.

1. Placement testing, aimed at assisting Faculties in selecting and placing students in the most appropriate qualifications and modules.
2. The initial two-week Orientation programme was re-designed. This programme 'kick-starts' the FYE, by orienting students to studying at UJ and building an initial awareness of the academic expectations, activities and values associated with UJ.
3. An 'extended orientation' approach, which involves scheduling themes from the initial Orientation throughout the first semester. 'Extended Orientation' includes strands on academic development (literacies and learning skills), Library orientation, and Edulink orientation, each of which should be integrated into core first year curricula.
4. Ongoing tracking of student performance and immediate identification of students who seem not be 'engaging' and therefore may be, or are 'at risk', with appropriate interventions. The SAFENET tracking system is partly in use with the final development work currently being conducted.
5. Senior students: The involvement of senior students takes a number of forms such as tutorial programmes, mentoring programmes and community engagement. Senior students are seen as a key element in facilitating successful student integration.
6. Co-curricular activities, e.g. organised sport, clubs and societies, and cultural activities, provide a wide variety of learning, and friendship building opportunities and facilitate a ready acceptance of the diversity in the UJ community. Such activities are widely promoted and form a fourth strand of 'extended Orientation.'
7. Focus on residences as centres of academic excellence. UJ would like to create an optimal learning experience for the relatively limited numbers of students in residences, and those associated with day-houses; this involves the establishment of guided learning communities, which have been shown to have a very positive impact on student learning.

## Subsequent developments

Steady progress has been made on all the initial initiatives with a number of working groups and sub-committees having been established at UJ. Current efforts of the FYE committee are aimed at sustaining these current initiatives as well as acting on newly emerging themes.

Newly emerging themes for the FYE committee include increasing the level of student involvement in all FYE structures and activities. This is being pursued in a number of ways including the creation of a UJ FYE student forum that meets three times a year. Consideration is also being given to an enhanced role for parents and care-givers but the exact form this will take is still uncertain. The fact that many UJ students are worried about food has come to the fore through the ISES research and a multi-pronged institutional approach in partnerships with various Non-Governmental Organisations (NGO's) was put in place during 2012. In an effort to reach more students an initial UJ FYE website was created and Facebook and Twitter is being used to communicate students. The website is designed in a 'frequently asked questions' format with various stakeholders providing input on the most prominent questions students ask.

## National and international involvement

Student transitions and the First Year Experience (FYE) are relatively new research and practice fields in South African higher education. It was decided right from the start to follow a cooperative approach to ensure that best practice and resources are shared effectively both within and outside South African higher education. This has led to the establishment of the Higher Education Teaching and Learning Association of Southern Africa (HELTASA) Special Interest Group (SIG) on student success during the 2011 HELTASA annual conference. Contact has also been made with the International FYE community, including the National Resource Centre for the First Year Experience and Students in Transition based at the University of South Carolina.

## Conclusion

To be better able to teach the students we have, a deeper understanding of who they are and what their life experiences are is essential. The profiles gathered at UJ have assisted the institution in responding to our students and their needs in a focused way that increases the impact of our efforts. More and deeper qualitative investigations into

the matters mentioned above and their impact on students should be undertaken to ensure that efforts aimed at improving student success is built on a solid base. A data informed institutional approach such as the UJ FYE is suggested as the best way forward in trying to improve levels of student success.

The UJ FYE has made a promising start in addressing the issues that have a bearing on student success that are to some degree within institutional control. The holistic and systematic approach enables an institutional response which harnesses the institutional resources more effectively. Top management support at UJ has been invaluable to enable the required momentum of the UJ FYE and growing levels of student involvement will ensure that the student voice also informs the FYE going forward. Because institutional change is required for an institutional response as described above, patience is required to grow institutional student success efforts.

## References

- Breier, M. 2010. From 'financial considerations' to 'poverty: towards a reconceptualization of the role of finances in higher education student drop out. *Higher Education*, 60: 657–670
- Council on Higher Education (CHE). 2012. *Vital Stats: Public Higher Education 2010*. CHE publication (2012): 1-58. Accessed on 25 May 2013. Url: <http://www.che.ac.za/documents/d000249/>
- Council on Higher Education (CHE). 2013. *A proposal for undergraduate curriculum reform in South Africa: The case for a flexible curriculum structure*. CHE publication. Pretoria
- Hunter, M.S., Keup, J.R & Gardner, J.N. 2011. *Primer for first time attendees to the International FYE conference*, Manchester, UK. 21–24 July 2011
- Keup, J.R. 2013. *The First year Experience: Lessons learned and emerging issues*. Presentation to the First Year Success conference held at the University of Johannesburg 17 September 2013. Unpublished slides.
- Laskey, M.L. & Hatzel, C.J. 2011. Investigating Factors Related to Retention of At-risk College Students. *The Learning Assistance Review (TLAR)*, 16 (1): 31–43.
- Lewin, T & Mawoyo, M. 2014. *Student Access and Success: Issues and Interventions in South African Universities*. Inyathelo: The South African Institute for Advancement.
- Morrow, W. 2009. Entitlement and achievement in education. *Bounds of Democracy: Epistemological Access in Higher Education*. HSRC press. Cape Town 2009.

Accessed on 28 May 2013. Url: <http://www.hsrcpress.ac.za/product.php?productid=2254&js=y>

Smith, W.L. & Zhang, P. 2010. The impact of key factors on the transition from high school to college among first- and second-generation students. *Journal of the First Year Experience & Students in Transition*, 22 (2): 49–70

Terenzini, P.T. & Reason, R.D. 2005. *Parsing the first year of college: A conceptual framework for studying college impacts*. Paper presented at the meeting of the Association for the study of Higher Education, November 19, 2005, Philadelphia, PA. Accessed on 12 November 2013. Url: <https://www.ed.psu.edu/educ/parsing-project/.pdf%20documents/ASHE05ptt.pdf/view>

Tinto, V. 2012. Enhancing student success: Taking the classroom success seriously. *The International Journal of the First Year in Higher Education*, 3 (1) (2012): 1–8. Accessed 22 May 2013. Url: 10.5204/intjfyhe.v2i1.119

Tinto, V. 2013. *Theoretical underpinnings and research framework for student success*. Presentation to the CHE symposium 20 August 2013, Pretoria. Accessed 15 January 2014. Url: <http://www.che.ac.za/content/regional-symposia-student-success-19-23-august-2013>

Thomas, L. 2012. *Building student engagement and belonging in Higher education at a time of change: a summary of findings and recommendations from the What Works? Student retention & Success programme*. Report by the Paul Hamlyn Foundation. Accessed on 29 May 2013. Url: [http://www.heacademy.ac.uk/resources/detail/what-works-student-retention/What\\_Works\\_Summary\\_Report](http://www.heacademy.ac.uk/resources/detail/what-works-student-retention/What_Works_Summary_Report)

University of Johannesburg. 2013. UJ enrolment details. Accessed on 9 June 2013. Url: <https://mis.uj.ac.za/heda/fsmain.htm>

Van Zyl, A., Gravett, S. & de Bruin, G.P. 2012. To what extent do pre-entry attributes predict first year student academic performance in the South African context? *South African Journal of Higher Education*, 26 (5): 1095–1111

Vosloo, M & Blignaut, S. 2010. *From hero to zero ... and back? The journey of first year access students in mainstream programmes*. ASSAF “Mind the Gap” forum, October 2010, Accessed 10 January 2014. Url: <http://www.assaf.org.za/stem-mind-the-gap-forum>