Abstract

South African higher education, like other higher education systems, is confronted with increased demands for accountability in a context of reduced state expenditure, the need to widen participation while improving success and graduate rates, and delivering students that have the skills and competencies to grow the economy and compete in a global market place. Furthermore, stakeholders want to see further evidence of higher education's impact. This paper will reflect firstly, on the rationale for an evidence-based approach to academic student support. Secondly, it will use the Programme for Academic Student Success (PASS), a transition programme, to illustrate how action research can be used to develop, implement and evaluate interventions that focus on improving student success.

Keywords: Transition programmes, evidence-based approaches, student success, impact.

1. INTRODUCTION

South African higher education, like other higher education systems, has to deal with reduced state expenditure, the need to widen participation while improving success and graduate rates, and delivering students that have the skills and competencies to grow the economy and compete in a global market place. Although access with success has been a research focus for several decades, South African higher education is plagued by low national graduation rates and large gaps between degree attainment rates of Black African students in comparison to other ethnic groups (Council on Higher Education, 2015). These results increasingly confront academic developers and teaching and learning specialists with the need to provide evidence of the effectiveness and impact of their work. From an international perspective, Kuh and Ikenberry (2009:5) point out that efforts to improve access and affordability remain empty gestures in the absence of evidence of student accomplishment.

At a system level, higher education globally is faced with increased accountability demands from various stakeholders (McCormick, Kinzie & Korkmaz, 2011). The steering of South African public higher education through funding, planning, quality assurance and increased reporting requirements, as legislated in the Reporting by Public Higher Education Institutions, is proof of this trend [Department of Higher Education and Training (DHET), 2014].
In addition Kuh, Ikenberry, Jankowski, Cain, Ewell, Hutchings, & Kinzie (2015:6) highlights the pressure of transformative emergent technologies, scarce and constrained (human and financial) resources, lack of student financial aid and concerns about the efficiency of higher education from government, and private companies and donors. As a result of these pressures and accountability demands, many institutions currently tend to follow a compliance approach to the use of evidence; especially student assessment data (Kuh, et al., 2015:x). Arguably, a more effective approach would be for institutions to take ownership of the evidence as a means of promoting academic quality and institutional improvement.

This paper aims to illustrate how qualitative and quantitative data can be used, within a mixed method approach using an action research design, to inform the development of institution-specific transition programmes and share ways in which the impact of these initiatives can be understood and used to enhance our understanding of transition in the South African context.

2. OVERVIEW OF TRANSITION PROGRAMMES

Internationally, much research has been done on successful academic support models, including what type of support underprepared or at-risk students need to be successful (Olive, 2008). First Year Experiences or Freshman Seminars (Padgett, Keup & Pascarella, 2013), Themed Learning Communities (Tinto, 2003), and Probation Programmes are a few examples of institutionalised support programmes. These initiatives help students navigate the university system, align students' expectations of university life, create supportive community environments, and act as early warning systems to pick up at-risk students and give them the academic support needed to successfully move through their undergraduate years to graduation (Tinto, 2003; Olive, 2008).

Many transition programmes exist within the American higher education system that focus on different years of post-secondary education such as first-year, sophomore, junior or senior students. Also, these programmes support different student cohorts such as underprepared, academically at-risk, athletes, or transfer students and address specific needs, gaps, or skills in academic and/or social support (Gardner, 1999; Heier, 2012; Tobolowsky, 2008; Vaughn & Parry, 2008).

Transition programmes are of particular importance in supporting students who are minorities or disadvantaged, students with disabilities, and first-generation students, and provide services that include academic enrichment such as tutoring or supplemental instruction, as well as academic advising, information sharing, mentoring, career guidance, and social enrichment (United States. Department of Education, 2007). Although transition programmes are considered add-ons in some colleges or universities, they
need to form part of the curriculum to function optimally, which would require buy-in not only from faculties, but also from all student support-related departments and divisions (Tobolowsky, 2008).

Although some components of these interventions or programmes exist in the South African context, there are very few examples where the services have been positioned as part of a transition programme that link together different support initiatives with the aim of assisting students' transition from one year to the next. Further, evidence of the impact of transition initiatives on students' success and persistence in the South African context is limited. This paper hopes to contribute to this limited research field by describing the conceptual development of the Programme for Academic Student Success (PASS), within the Centre for Teaching and Learning (CTL), at the University of the Free State (UFS) and shares the results of a first phase impact analysis completed in 2014.

3. THEORETICAL AND CONTEXTUAL CONSIDERATIONS

The development of this transition programme, in its pilot phase, was informed by student engagement theory, which is in turn informed by theoretical and empirical research dating back to the 1930s. The most significant contributions come from Astin (1984, 1985), Pace (1984) and Kuh and colleagues (Kuh, Schuh, Whitt, and Associates, 1991; Kuh, Whitt, and Strange, 1989; Pike and Kuh, 2005). From a student development theory perspective PASS can be positioned with Schlossberg's transition theory. This theory examines what constitutes a transition, different forms of transition, the transition process, and factors that influence transition (Evans, Forney, Guido, Patton, & Renn, 2010). Transition is defined as "any event, or non-event, that results in changed relationships, routines, assumptions and roles" (Goodman, Schlossberg, & Anderson, 2006). The theory proposes that there are four major factors: situation, self, support and strategies (the 4S's) that influences students' ability to cope. The aim of the PASS pilot was to help students cope with the transition from the first to the second year of study, though facilitating students' understanding of the transition, themselves, the support programmes and services at their disposal, as well as assisting them with finding strategies to help them cope.

In its pilot phase the Programme was developed for University Preparation Programme (UPP) students who have successfully completed their academic bridging year. The UPP was established in January 1993 as an academic bridging or access programme in recognition of the imbalances in the school system, that still persist today, which lead to many deserving students not being able to access post-school opportunities (Marais and Hanekom, 2014: 10). UPP students have a lower admission point (AP) score than students who enter UFS through extended or mainstream provision.
To support students with a lower AP score, the UPP makes use of a student-centred pedagogy that focuses on resource-based learning instead of the traditional lecture-based approach. This student-centred pedagogy is one of the reasons for a success rate of 90% in 2014. Some of the key elements of the student-centred pedagogy include:

- Continuous pedagogical innovation and staff development;
- Immediate provision of study materials and textbooks to all students prior to their first classes;
- Class sizes limited to 40-50 students per class;
- Compulsory attendance of contact sessions;
- A full-time counsellor providing academic advice; and
- Dedicated and immediate administrative support for students.

After successful completion of their UPP year, students are enrolled in the extended degree programmes on the Bloemfontein campus and continue with their second (of four) academic years. The need for a transition programme arose after longitudinal research was conducted on the 2006 cohort of UPP students. Results from this research project indicated that, although the pass rate for UPP students was as high as 70%, only 30% of those students graduated from the University with a Bachelor's degree in 2010. The low throughput rate highlighted the need for the development of a transition programme to support the UPP cohort to successfully obtain their degrees.

Funding for PASS was provided by the Michael & Susan Dell Foundation, and in 2013 a team was commissioned to conceptualise and pilot this programme. The programme was first launched in July 2014. In 2015, 715 first year and 873 senior, post-UPP students were enrolled for study and included in PASS, which amounted to a cohort of 1588 students.

4. THE PROGRAMME FOR ACADEMIC STUDENT SUCCESS (PASS)

PASS is a non-compulsory transition programme aimed at providing academic support, at high impact times of the academic year, to a specific group of at-risk, undergraduate students at the UFS. The Programme provides students with information, skills, and tools to succeed at university through quarterly contact sessions, individual academic advising sessions (per request), and regular communication via social media. In addition, the PASS initiative aims to provide a longitudinal as well as a cross-sectional faculty overview of students' "credit overloading" and strives towards ensuring that students are registered correctly and adhere to the credit load limits stipulated by the faculties. The students' academic success is also tracked, and ad hoc initiatives are piloted where the need for additional academic support is flagged.
PASS aims to develop students who:

- Are able to navigate the system and who fosters a campus connection;
- Recognise and develop good academic habits;
- Develop a sense of academic responsibility and intrinsic motivation;
- Are able to proactively manage their academic careers; and
- Feel part of a community that shares common experiences at university.

Students are invited to attend contact sessions throughout the academic year and continuous attendance is encouraged, but not mandated. During these contact sessions various topics are addressed and students are asked to reflect on, and share their views and experiences that relate to the topic at hand. Then the PASS tutor would share and discuss specific information, tools, and strategies to help students deal with their specific academic challenges. The content is adapted for different cohorts, with specific differentiation between first year and senior students. Thus, attendance is incentivised; students receive different academic-related incentives that correspond with the specific topic that is dealt with in the session.

### 4.1 Research approach and design

From its inception, the Programme had a mixed method approach that made use of an action research design which entailed repeated cycles of planning, acting, observing and reflecting (Zuber-Skerritt, 2001). Particular emphasis was placed on an evidence-based approach, which included the collection of quantitative and qualitative data through student evaluation forms after each session and "real-time" or continuous tracking of all students' progress. The tracking data would be used for the development of an early warning system for at-risk students. By combining action research with an evidence-based emphasis and "real-time" tracking, the team was able to develop a better understanding of what type of support, at what times of the academic year has the greatest impact on student success, i.e. pacing support with the institution and especially students' academic rhythm.

### 4.2 Planning

As part of the planning phase in the action research cycle, the team integrated information from a literature review of academic student support, student engagement theory, as well as research, monitoring and evaluation data of support initiatives that were already running within the CTL such as; tutorials, and academic and career advising to develop the initial programme content. The content is divided into themes, which are strategically presented at specific times of the year to enhance impact and relevance.
Examples of content within these themes include orientation, navigating the system, registration, credit load, setting goals and priorities, developing good academic habits, motivation, exam preparation, time management, bursary application information, and upcoming registration information. PASS also places a strong emphasis on academic and career alignment; the importance of the world of work and skills for the workplace (aimed specifically at senior students), as well as resource referral to create awareness of other support services offered by the institution, which contribute to students' academic success.

4.3 Acting: Structure and delivery of PASS

The structure and delivery method of PASS comprises targeted contact sessions at high-impact times throughout the year, in order to provide specific information and support at times when the students need it most. In the pilot phase the high impact times were identified based on the CTL staff's engagement with students and faculties with regard to when students would require specific support. The programme consisted of six contact sessions throughout the year, and other support initiatives that aim to improve students' academic success.

<table>
<thead>
<tr>
<th>February: Orientation</th>
<th>This session introduces students to the new campus environment and provides information about faculty-based support and institutional support services. Further, the session aims to help students focus on their academic goals and priorities, and aligns their academic expectations for the year ahead. The concepts of credit load and major and elective selection are also explained. Lastly, the function and aims of PASS are shared.</th>
</tr>
</thead>
<tbody>
<tr>
<td>April: Academic skills development</td>
<td>Students are provided with an opportunity to reflect on their experience at university thus far, and discuss concepts such as academic success and which habits promote or hinder success at university. Students are also given a self-reporting survey to establish what their current academic habits are. Then, good academic habits are discussed with the first-year students, while seniors discuss how good academic habits transfer to the world of work.</td>
</tr>
</tbody>
</table>
Aside from the scheduled contact sessions, students could schedule one-on-one academic advising sessions with a member of the PASS team, and the Programme hosted additional interventions targeted at high-risk modules. Within PASS, high-risk modules were determined by identifying the subjects that had the highest dropout or failure rate in the student cohort. Examples include the Psychology and Chemistry interventions; students are invited to attend additional tutorial sessions arranged by PASS in collaboration with the faculty, with a specific focus on semester test and exam preparation.

### 5. OBSERVATION AND REFLECTION

The steps of observation and reflection followed each other in rapid succession due to the emphasis on an evidence-based approach. Observations included team members' personal experience of interacting with students as well as team meetings in which the team reflected on data gathered. Quantitative data were analysed using SPSS for both descriptive and inferential statistics. The qualitative data from students' session evaluations were analysed using thematic content analysis to identify core themes in students' responses. Figures 1 provides a graphic illustration of the quantitative responses students generated.
Figure 1: Quantitative data analysis of Orientation 2014 feedback.

Figure 1 shows that the top five items that the students feel they want to learn more about are improving study skills (54%), preparing for exams and writing exams (48%), staying motivated throughout the year (45%), dealing with academic workload (39%) and understanding and applying referencing techniques (39%). These needs were used for reflection and informed the conceptualisation of the themes for contact sessions throughout the year.

Figure 2 provides a graphic illustration of the responses that were generated by the students, using NVivo qualitative data analysis software.

Figure 2: Qualitative analysis of Teaching and Learning Community (TLC) evaluation data.
Figure 2 shows that motivation (74%), presentation and facilitation (43%), raising awareness of support services (41%), goal setting (36%), and academic advising and care (26%) were the top five aspects students liked about the programme. A comparison of Figures 1 and 2 show some alignment between what students wanted to learn and what they enjoyed. As part of the action research cycle, it pointed to areas where alignment could be improved, but also that students do not always know what they need. Further, these results underline that it is important to students to feel connected to the institution and that there is someone who cares about their progress and academic success.

In addition to the above mentioned analysis the team conducted an impact analysis towards the end of 2014. The impact analysis focused on a quantitative analysis of student attendance data and students' academic results to explore whether there were any differences in the average final marks of students who attended PASS sessions and those who did not.

5.1 Results from the impact analysis

Students are expected to register for multiple modules per semester. Subsequently, the overall final mark average was calculated by determining the means (averages) of the marks for all the modules a student is registered for. This mark was then coded as the final mark average for 2014 to date which was used in correlation to the frequency of attendance.

The data in Table 1 represents a bivariate correlation using the average final mark and total amount of intervention sessions attended as continuous variables respectively. When interpreting the correlation (Table 1), there is a significant correlation (p<0.05) between the number of sessions a student attended and the final marks that the student achieved. Further analysis revealed that the correlation explains 5% of the variance in both variables; thus a change in the total number of sessions explains a 5% change in the overall average of students and vice versa.

Table 1: 2-Tailed Pearson Correlation between final mark averages and total number of sessions attended.

<table>
<thead>
<tr>
<th>Correlations</th>
<th>Average</th>
<th>Total Sessions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average</td>
<td>Pearson Correlation</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>420</td>
</tr>
<tr>
<td>Total Sessions</td>
<td>Pearson Correlation</td>
<td>.234**</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>420</td>
</tr>
</tbody>
</table>

1Calculated by the $^2$ of the Pearson Correlation (0.234$^2$ X100) = 5.48%
The data used that resulted in a positive correlation was further analysed by means of an independent sample T-test. This statistical test is used when there are two groups or two separate sets of data and you wish to compare the mean score against a "continuous variable". For the PASS analysis, the attendance data acts as a categorical variable (attended vs. not-attended) and the final mark averages as continuous variable.

Table 2a indicates the group statistics of the independent sample T-test with a total (N) of 234 students grouped in the "no-attendance" group with an overall final mark average (mean) of 56%. In comparison, a total of 186 students attended at least one intervention session in PASS and obtained an overall final mark average of 60%.

**Table 2a:** Group statistics of PASS attendance versus Final Mark Average.

<table>
<thead>
<tr>
<th>Group Statistics</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attended_PASS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average No Attendance</td>
<td>234</td>
<td>56</td>
<td>11.296</td>
<td>.738</td>
</tr>
<tr>
<td>Attendance</td>
<td>186</td>
<td>60</td>
<td>9.269</td>
<td>.680</td>
</tr>
</tbody>
</table>

Levene's test (Table 2b) was used to determine the statistical significance of this finding. The results of the test is significant (p<0.00) which means that the variance of the two groups are not equal, thus violating the assumption of homogeneity of variance. The T-test for equality of means (final mark average) where equal variances are not assumed was significant with a p<0.00. These Independent T-test analyses confirm the differences in final mark averages are significant with a small effect size of 0.389. Effect size indicates the practical importance of an observed difference.

**Table 2b:** Independent Sample T-test for PASS attendance versus Final Mark Average.

<table>
<thead>
<tr>
<th>Levene's Test for Equality of Variances</th>
<th>t-test for Equality of Means</th>
<th>95% Confidence Interval of the Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>F</td>
<td>Sig.</td>
<td>t</td>
</tr>
<tr>
<td>Average Equal variances assumed</td>
<td>6.707</td>
<td>0.01</td>
</tr>
<tr>
<td>Equal variances not assumed</td>
<td>-4.133</td>
<td>0.00</td>
</tr>
</tbody>
</table>

\(^2\text{Calculated the difference between means divided by the quotient sum of both standard deviations}\)
The aforementioned statistical tests indicate a positive correlation between students enrolled in PASS and their academic achievement throughout the first semester of 2014. Furthermore, students involved in PASS achieved an overall 4% higher final mark than those that did not participate in the Programme.

When analysing the qualitative feedback, students stated that PASS assisted them in achieving their academic goals, as is illustrated by the following responses:

"My favourite moment was when we had discuss because I did not know the people I was with and it is good hearing other peoples studying methods and opinions"
"Knowing that I am not alone, and that everyone is having the same problems."
"PASS is a programme that helps students who were in the University Preparation Programme and that are now in University. University is a huge step from the UPP and one has to adjust to this huge step. So PASS helps us manage the pressure and also helps us with academics."
"It has changed my attitude towards my studies and has helped me realised what I needed to change. It helps you understand how the university life is like. Helps you load off the pressure and helps you study."

5.2 Implications for student engagement and student development theory

The results from this pilot study suggest that the PASS programme has a positive impact on student performance and their development. The preliminary findings suggest that transition initiatives like PASS could potentially become high impact practices (HIPs). High impact practices, in the context of student engagement research, are activities that were found to be more likely to advance students' capability in areas such as critical thinking, solving real-world problems and working effectively with others, regardless of student backgrounds (Kuh, 2008). In the South African context student engagement researchers have started to look at what these practice might be. From a student development theory perspective we believe the PASS project can contribute to the use of Schlossberg's transition theory. Using the lens of the 4 S's (situation, self, support & strategies) the qualitative data shows that the PASS programme has helped students to better understand what is involved in the transition from the first to the second academic year (situation). The quantitative data illustrates the important motivation benefit that PASS students receive. This suggests that the programme contributes towards students, self, by helping them form a more positive outlook on the transition and helping them to be resilient during their academic careers.
The qualitative and quantitative data shows that student not only found, support, within the institutions, but also formed networks with each other during the PASS sessions. The data also shows that students have developed several, strategies, such as study skills and assessment preparation. This theoretical contribution will be explored in greater depth as the PASS programme develops.

5.3 Implications of an evidence-based approach

In this section we would like to consider the implications of an evidence-based approach in the development of transition programmes.

From a methodological point of view, a focus on evidence while developing and implementing a programme provides an opportunity to operationalise action research. The results places an emphasis on the importance of understanding what information and support students need at specific times throughout the year; this evidence-based approach has shown potential in helping institutions to provide students with support when they need it.

Further, an evidence-based approach contributed to the development of a more grounded understanding of transition in the South African context. The quantitative and qualitative data facilitated reflection on how the needs of South African and more specifically, UFS students, differ from the typical needs articulated in international research. In terms of agency, a focus on evidence through student feedback turned the participants into co-constructors of the content.

The focus on evidence underlines the importance of showing impact in terms of student success and programme outcomes. The PASS case study shows how a rigorous research approach can, over a very short period of time, illustrate impact to meet the accountability demands of various stakeholders. The evidence-based approach also provided valuable feedback on a continuous basis to the PASS team which enabled them to react pro-actively to students' needs and kept them motivated during the challenging time of piloting a new initiative.

6. CONCLUSION

The need for evidence of how South African higher education institutions listens to the needs of its students has been drawn into sharp focus by various student protests since 2015. In this context, conversations about evidence often elicit strong emotions from managers, academics, support staff and students alike, depending on their theoretical paradigm in relation to higher education and what its role and responsibilities are in society.
Based on our [UFS] findings we believe that the combination of action research with a strong evidence based emphasis shows promise in helping academic, support staff, and students to be critical and reflective about why they are doing what they are doing. Through this evidentiary focus, institutional interventions and their impact can become, in the words of Kuh et al. (2015: 3) "more consequential for decision makers and leaders in higher education". The qualitative and quantitative data in this paper illustrated the value and impact of transition programmes, focused on student success, and can be evaluated and used to illustrate to students an institutions commitment to using their voice (data) to better support their success.

7. REFERENCES


