

## **Learning gains of international students in South African distance education**

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### **Abstract**

The proportion of students studying in international distance education programmes has risen dramatically in the last decade, particularly in developing countries like South Africa. Although there has been some research in UK distance education, there is little known about academic trajectories of distance education students in other countries. One promising approach of assessing students' learning through the use of learning analytics is through measuring students' learning gains and learning trajectories. Longitudinal data was collected for 69,935 undergraduate Science students from across 30 different qualifications at UNISA. Our multilevel modelling indicated that students made positive learning gains over time, whereby most variance (78.9%) was within-student, followed by the variance due to individual differences (18.3%). Theoretical implications and practical applications for these findings in the context of distance education as well as the appropriateness of the selected method in the context of Africa will be discussed.

### **Introduction**

The proportion of students studying in international distance education programmes has risen dramatically in the last decade, particularly in developing countries (UNESCO, 2012). One of such examples is South Africa, which has become a hub for international students in Africa, with over one-third now studying at a distance. However, relatively little is known about the learning and lived experiences of these international students studying in South Africa, and in particular what the experiences are for international students following distance learning programmes. Previous research found that distance students showed a relatively low degree attainment (Prinsloo et al, 2015), and learning design affects their retention and satisfaction (Author E, 2016). However, it is still unclear which inclusive practices and resources can best promote distance student academic success.

Our International Distance Education with African Students (IDEAS) project aims to address this gap in knowledge through a research collaboration between the Open University UK and the University of South Africa. The project explores international distance student experiences in developing countries and their educational transitions through Higher Education. Recent technological developments and in particular learning technologies provide a valuable opportunity for universities to follow student journeys, and where needed provide interventions on learning design and individual student support so that students get the best possible education. Thus, our first research aim is to understand what counts as an excellent educational outcome, and how students' progression in learning can be effectively measured using learning analytics.

One way of assessing students' learning through the use of learning analytics is through measuring students' learning gains and learning trajectories. Learning gains can be defined as growth or change in skills, abilities and knowledge that are linked to learning goals of the course (Author A, 2017). Previous research within distance higher education revealed that there were substantial differences between students' learning trajectories across different disciplines (Author A, 2016). For instance, at the SRHE 2016 conference Author A (2016) found that in comparison to science students, social science students were much more varied in their learning trajectories. Furthermore, the gap between weak and strong students increased over time in social sciences, whereas it stayed same or decreased slightly in science.

Although there has been some research in UK distance education, there is little known about academic trajectories of distance education students in other countries. University of South Africa is the largest distance education provider in Africa and it is also a hub for international students. However, to the best of our knowledge there is no research that has looked into the specific learning trajectories of "local" and international students, which is particularly important in the increasingly global HE sector. As such, the second aim of this research is to examine differences in learning gains between these two groups of students.

## **Method**

Longitudinal data was collected for students between academic years 2005 and 2016. A total sample for this study was 69,935 undergraduate Science students from across 30 different qualifications. The sample comprised of 36.3% female

students and 63.7% male students. The majority of students were local or so-called home students (i.e., students living in South Africa and having South African citizenship: 88.6%), and 11.4% were classified as international students (i.e., students were not South African citizens and held a citizenship of another country). 95.7% of these international students lived in South Africa, whereby 4.3% of students were following these UNISA courses at a distance outside South Africa. Just over half a sample were studying full-time (54.7%), and 91% of students were below 40 years old. Data was analysed using multilevel growth-curve modelling (Rasbash, Steele, Browne, & Goldstein, 2009).

## **Results and discussion**

Multilevel modelling fitted data better than regression model ( $X^2$  Change = 9891,  $p < 0.001$ ) and 2-level model ( $X^2$  Change = 2812,  $p < 0.001$ ). These results are in line with the previous research on learning gains at the institutional level and support the notion that the nested structure of the data has to be taken into account when examining students, learning gains (Rogaten et al., 2017).

Overall results showed that students made positive learning gains over time ( $Beta = 0.393$ ,  $p < 0.05$ ). Previous research in distance education with science students only looked at the learning gains of students in one semester (Rogaten, Rienties and Whitelock, 2016), whereas in this study we were able to look at the longitudinal learning trajectories of international and local students over the years. Examining the distribution of variance in students' learning gains revealed that most of the variance (78.9%) was within-student (i.e., studying hard for one module and getting a good grade, studying just to pass the next module with minimum effort due to family circumstances), followed by the variance due to individual differences (18.3%), and only 2.8% of variance was between different qualifications. These findings have important implications and applications in the South African distance education context, as in the current setup it becomes very hard to predict how any one student will progress year on year regardless of their socio-demographic characteristics or qualification they are studying for. Dropout is one of the largest concerns for UNISA and although this study did not look at the drop out rates, the overall volatility in students' grades throughout the degree should be taken into the consideration.

The main objective of this study was to examine how international students' learning gains compared to those of home students. On average international students

studying in South African distance education had higher learning gains than home students ( $Beta = 0.646$ ,  $p < 0.001$ ). Furthermore, the learning gain gap between home and international students increased significantly over time ( $Beta = 0.871$ ,  $p < 0.001$ ). This means that although both groups of students were making positive learning gains, international students made bigger learning gains in comparison to home students. Follow-up qualitative research will need to unpack the underlying reasons for these results.

The presentation will outline differences and similarities between different qualifications and students studying in those qualifications. Theoretical implications and practical applications for these findings in the context of distance education as well as the appropriateness of the selected method in the context of Africa will be discussed.

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