Student Success and Curriculum Reform in Post-Apartheid South Africa

*Rubby Dhunpath*
University Teaching & Learning Office, University of KwaZulu-Natal,
Durban, South Africa
dhunpath@ukzn.ac.za

*Reshma Subbaye*
Directorate of Institutional Planning and Research, Mangosuthu University of Technology, Durban, South Africa
subbaye.reshma@mut.ac.za

**Abstract**

Student success is an elusive aspiration in South Africa, especially for its majority African population as the country continues to endure the imprints of a racially divided higher education system. This article will critically examine various reform initiatives designed to enhance student success since 2004. The authors will demonstrate that despite successive efforts and increasing resources directed at enhancing student success, the outcomes have been minimal, largely because student failure has been pathologized as a function of student deficits rather than a consequence of systemic dysfunction, especially as it relates to the curriculum. We concede that while the impediments to student success are multifarious, using the affordances of technology to institute a less alienating curriculum structure, alongside a review of content, can catalyse the process of reform to reverse current student outcomes.

**Keywords**

undergraduate student success – curriculum structure – transformation – South Africa
1 Introduction

Higher education is afflicted by a curious contradiction: Entrusted with the intellectual project of finding solutions to world problems, it has a poor record of finding solutions to its own persistent problem of low progression and success rates. The South African Council on Higher Education (CHE) characterises graduate output as marked by high levels of failure and dropout, where: only one in four students in contact institutions graduate in regulation time; only 48% of contact students graduate within five years; 55% of the intake will never graduate; access, success and completion rates continue to be racially skewed, with completion rates of White students being on average 50% higher than that of the majority Black African rates. The net result of the disparities in access and success is that under 5% of African and coloured youth are succeeding in any form of higher education.1

The consequence is that higher education is failing to catalyse the conditions necessary for intergenerational mobility for the majority African population.2 Narratives of chronic attrition and failure continue to dominate the South African experience as the country is denied the requisite skills to arrest the shrinking capitalist economy, evident in the annualized 0.2 percent economic growth in 2017.3 Higher education in South Africa was, and continues to be a ‘low-participation, high-attrition system’4 which largely fails to interrupt the cycle of poverty, as unemployment and income inequality increases and South Africa boasts one of the highest GINI co-efficients5 in the world.

Historically, this failure was attributed to the articulation gap between secondary schooling and further education.6 More recently, institutional

5 The Gini Coefficient is a measure of inequality of income distribution or inequality of wealth distribution. It measures the extent to which the distribution of income (or, in some cases, consumption expenditure) among individuals or households within an economy deviates from a perfectly equal distribution.
under-preparedness\textsuperscript{7} is being acknowledged as contributory, particularly institutions’ incapacity to monitor and track student progression effectively. Despite its best intentions to rid itself of its colonial legacy, supported by huge resource investments, the apartheid inspired system, which was historically differentiated along unequal racial demographics, failed to meet the needs of the recently enfranchised masses.

Using a transformative framework\textsuperscript{8}, this article explores how student success is currently being characterised in the South African higher education system. The overarching question framing this article is whether the core elements of social justice are being addressed in higher education in post-apartheid South Africa. In particular, we are interested in how resource allocations and specialised programmes to address equity, contribute to student pathways that lead to success.

2 The Higher Education Transformation Journey

In 1996, the South African National Commission on Higher Education (NCHE) reported to the new democratically elected government, that the higher education system was characterised by inefficiencies and redundancies. It noted that given its current state, higher education was unable to respond to the changed and changing needs of the country, especially in terms of social justice and economic development. It implored the government of the urgent need for higher education reform. Consequently, the period between 1997 and 2003 was devoted largely to policy development, culminating in a national plan for higher education in 2001. The national development plan recommended that the higher education sector should be reorganised more equitably through mergers\textsuperscript{9} of racially segregated universities to address the problem of unsustained participation and success rates\textsuperscript{10}.

Between 2002 and 2005, the higher education sector underwent major reorganisation. The mergers involved shutting down large numbers of teacher


education colleges and incorporating some within universities, while expanding the further education and training (FET) sector for vocational education. It was envisaged that differentiation and mergers would contribute to efficiencies across the higher education system, while expanding access to previously disadvantaged and excluded students, amidst fears that the pristine legacies of the ‘White’ institutions would be irretrievably destroyed. The mergers resulted in the creation of three loosely categorised institutional types: traditional universities, universities of technology and comprehensive universities. The differences among these institutional types lay in the mix of offerings of purely academic and vocationally oriented programmes.

In the years that followed the restructuring, despite substantial resource investments especially in the formerly black (historically disadvantaged) institutions, the mergers failed to deliver on the ambitious promise of equitable access and in particular, equitable outcomes. The reconfigured higher education landscape remained expensive and wasteful as 70% of undergraduates continued to enrol at universities while the expanded and potentially more productive Further Education and Training (FET) sector failed to attract students to the portals of skills development. This failure is attributed to their poor reputation and declining quality. Success continued to be the preserve of middle class and white students while the majority black youth were routinely consigned to unskilled labor.

Ironically, by around 2010, following the introduction of new school curricula and the resultant rapid increase in the numbers of students gaining access to higher education, the rationalised higher education system, which now comprised of 23 public universities, wasn’t big enough to provide access to those seeking post-secondary education. Fast-forward to 2014, 2 new comprehensive universities were created and one university demerged in 2015, expanding the total to 26 universities. Table 1 provides a descriptive profile of the higher education sector by institutional type, merger status, undergraduate student enrollments and permanent staff headcounts.

---

12 Ibid.
<table>
<thead>
<tr>
<th>Type</th>
<th>Institution name</th>
<th>Merger-status</th>
<th>Undergraduate headcount*</th>
<th>Permanent instructional/research staff headcount*</th>
<th>Headcount undergraduate student to permanent staff ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Traditional universities</td>
<td>North West University</td>
<td>Merged</td>
<td>50,460</td>
<td>1,453</td>
<td>35:1</td>
</tr>
<tr>
<td></td>
<td>Rhodes University</td>
<td>Unmerged</td>
<td>5,579</td>
<td>318</td>
<td>17:1</td>
</tr>
<tr>
<td></td>
<td>Sefako Makgatho University</td>
<td>New</td>
<td>4,126</td>
<td>504</td>
<td>8:1</td>
</tr>
<tr>
<td></td>
<td>University of Cape Town</td>
<td>Unmerged</td>
<td>16,164</td>
<td>1,179</td>
<td>14:1</td>
</tr>
<tr>
<td></td>
<td>University of Fort Hare</td>
<td>Merged</td>
<td>10,158</td>
<td>345</td>
<td>29:1</td>
</tr>
<tr>
<td></td>
<td>University of KwaZulu-Natal</td>
<td>Merged</td>
<td>32,011</td>
<td>1,341</td>
<td>24:1</td>
</tr>
<tr>
<td></td>
<td>University of Limpopo</td>
<td>De-merged</td>
<td>16,491</td>
<td>543</td>
<td>30:1</td>
</tr>
<tr>
<td></td>
<td>University of Pretoria</td>
<td>Merged</td>
<td>35,551</td>
<td>1,192</td>
<td>30:1</td>
</tr>
<tr>
<td></td>
<td>University of Stellenbosch</td>
<td>Unmerged</td>
<td>18,522</td>
<td>1,076</td>
<td>17:1</td>
</tr>
<tr>
<td></td>
<td>University of the Free State</td>
<td>Merged</td>
<td>22,526</td>
<td>845</td>
<td>27:1</td>
</tr>
<tr>
<td></td>
<td>University of Western Cape</td>
<td>Unmerged</td>
<td>16,259</td>
<td>645</td>
<td>25:1</td>
</tr>
<tr>
<td></td>
<td>University of Witwatersrand</td>
<td>Unmerged</td>
<td>21,865</td>
<td>1,144</td>
<td>19:1</td>
</tr>
<tr>
<td>Universities of technology</td>
<td>Cape Peninsular University of Technology</td>
<td>Merged</td>
<td>30,757</td>
<td>807</td>
<td>38:1</td>
</tr>
<tr>
<td></td>
<td>Central University of Technology, Free State</td>
<td>Merged</td>
<td>13,198</td>
<td>288</td>
<td>46:1</td>
</tr>
<tr>
<td></td>
<td>Durban University of Technology</td>
<td>Merged</td>
<td>26,055</td>
<td>577</td>
<td>45:1</td>
</tr>
<tr>
<td></td>
<td>Mangosuthu University of Technology</td>
<td>Unmerged</td>
<td>11,487</td>
<td>193</td>
<td>60:1</td>
</tr>
<tr>
<td></td>
<td>Tshwane University of Technology</td>
<td>Merged</td>
<td>54,596</td>
<td>963</td>
<td>57:1</td>
</tr>
<tr>
<td></td>
<td>Vaal University of Technology</td>
<td>Merged</td>
<td>17,006</td>
<td>367</td>
<td>46:1</td>
</tr>
</tbody>
</table>
### TABLE 1  Public universities in South Africa in 2015 (cont.)

<table>
<thead>
<tr>
<th>Type</th>
<th>Institution name</th>
<th>Merger-status</th>
<th>Undergraduate headcount*</th>
<th>Permanent instructional/research staff headcount*</th>
<th>Headcount undergraduate student to permanent staff ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comprehensive universities</td>
<td>Nelson Mandela Metropolitan University</td>
<td>Merged</td>
<td>22,025</td>
<td>624</td>
<td>35:1</td>
</tr>
<tr>
<td></td>
<td>Sol Plaatje University, Northern Cape</td>
<td>New</td>
<td>328</td>
<td>30</td>
<td>11:1</td>
</tr>
<tr>
<td></td>
<td>University of Johannesburg</td>
<td>Merged</td>
<td>41,495</td>
<td>1,108</td>
<td>38:1</td>
</tr>
<tr>
<td></td>
<td>University of Mpumalanga</td>
<td>New</td>
<td>816</td>
<td>45</td>
<td>18:1</td>
</tr>
<tr>
<td></td>
<td>University of South Africa (distance education)</td>
<td>Merged</td>
<td>279,863</td>
<td>1,715</td>
<td>163:1</td>
</tr>
<tr>
<td></td>
<td>University of Venda</td>
<td>Unmerged</td>
<td>12,616</td>
<td>388</td>
<td>33:1</td>
</tr>
<tr>
<td></td>
<td>University of Zululand</td>
<td>Unmerged</td>
<td>15,191</td>
<td>295</td>
<td>52:1</td>
</tr>
<tr>
<td></td>
<td>Walter Sisulu University</td>
<td>Merged</td>
<td>24,845</td>
<td>582</td>
<td>43:1</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td></td>
<td>799,990</td>
<td>18,567</td>
<td>Average for contact universities = 32:1</td>
</tr>
</tbody>
</table>

* Data source: DHET website (http://www.dhet.gov.za/sitepages/university-education) data extracted 18 December 2017

Participation rates for tertiary education in South Africa appears to be better than the rates of counterparts in the Southern African Development Community (SADC) region\(^\text{13}\) but is low when compared to OECD/BRICS/other developing nations outside the continent\(^\text{14}\). In addition participation rates in South Africa are racially skewed. Ethnic minorities (Whites and Indians) have larger representation and consequently participation rates than the African majority. Overall, despite the lower than expected participation rates in South Africa, modest gains were made in terms of headcount enrolments and graduation rates. However, students who did manage to...


access the somewhat expanded higher education sector reported hostile institutional cultures and universities acknowledged that student integration was highly problematic.\textsuperscript{15}

Thus, institutions were under pressure to address student performance, transformation and social cohesion. During this period, student bodies diversified rapidly, while universities where mildly responsive in transforming their curricula offerings and structuring of academic programmes, as evident in the modest increase of 2\% in graduations over the 2005 to 2015 period. This reluctance to transform is regarded as a symptom of universities perpetuating their deeply entrenched institutional cultures, rituals and traditions which inhibit success in higher education.

The White Paper on post-secondary education and training (2013) noted that, “despite the advances made since the advent of democracy, the education system continues to replicate the divisions of the past. The institutional landscape is still reminiscent of apartheid ... in terms of infrastructure, teaching facilities and staffing.”\textsuperscript{16} Amidst several competing demands in higher education transformation, South African universities are under pressure to

\textbf{FIGURE 1} Undergraduate progression profile

\textit{DATA SOURCES: CHE, 2012, CHE, 2017; DHET, 2017A}

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{undergraduate_progression_profile.png}
\caption{Undergraduate progression profile}
\end{figure}

\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline
\hline
\textbf{Participation rates in undergraduate programmes} & 16\% & 16\% & 16\% & 17\% & 17\% & 18\% & 17\% & 19\% & 20\% & 18\% & 19\% \\
\hline
\textbf{\% undergraduates who drop-out after one year of study} & 25\% & 28\% & 26\% & 25\% & 21\% & 20\% & 21\% & 19\% & 19\% & 18\% \\
\hline
\textbf{Undergraduate graduation rates} & 15\% & 15\% & 15\% & 15\% & 16\% & 16\% & 16\% & 15\% & 16\% & 17\% & 17\% \\
\hline
\end{tabular}


ensure that they are financially viable and accommodate the demands of increasing numbers of students while providing high quality education; all within the circumscriptions of reduced government spending in the sector.\textsuperscript{17} These pressures on the higher education sector may be broadly characterised by three types of government-initiated structural reforms: equity, expansion, competitiveness.

3 Higher Education Sectoral Reforms to Advance Student Success

The first reform underpinning transformation is equity-driven and is aimed at providing increased access to the previously disadvantaged majority. By 2015, the student body in universities comprised 84\% Blacks (African, Indian and Coloured) and 16\% Whites. In addition, women constituted 58\% of enrolments.\textsuperscript{18} While substantial gains in this regard have been made, black students are still unevenly represented at historically advantaged (White) universities.\textsuperscript{19} Similarly, although the number of black academics and women academics teaching in the public higher education sector have also increased, these staff are aggregated in the lower ranks of the academy.\textsuperscript{20} Moreover, these quantitative gains in providing access (for both Blacks and women: staff and students) to the academy have not been matched by progress in creating institutional cultures where all students and staff can thrive and succeed in equal measure.\textsuperscript{21} For example: The medium of instruction in most South African universities is English. Yet, the majority of students speak English as a second or third language. Currently, the language issue in South Africa is the subject of much controversy and “has added to the instability of the social justice project in teaching and learning in higher education.”\textsuperscript{22} But more importantly, while universities have long acknowledged the centrality of language as a determinant of student success, most universities have only succeeded in providing symbolic access to student’s mother tongues.

\textsuperscript{17} J. Jansen, \textit{As by Fire: The End of the South African University} (Cape Town: Tafelberg, 2017).
The second reformation is the drive for the expansion of the higher education sector. Universities have responded by reducing institutional spending, increasing student enrolments and fees and seeking other streams of income. Student headcount enrolments in higher education have doubled since 1994 and in the last decade, income from student fees have increased from 24% to 31%.23 These increases in student numbers exceed the increases in staff numbers (see Figure 2) resulting in escalating student to staff ratios. The increased student enrolments have resulted in larger class-sizes which means that academics are now spending more time on teaching with little time for academic support, amidst increasing demands for higher research productivity.

Although administrative access to higher education has been achieved by the removal of exclusionary barriers, financial access continues to be the de-facto gatekeeper for the majority African population. The ongoing campaign for free higher education, accompanied by violent protests which catapulted the fees crisis into the national spotlight, gives a new complexion on higher education transformation, yet again, shifting attention away from the unresolved problem of unsustainably low graduation rates. When taking into account the

increases in headcount enrolments, governmental funding support for universities has declined in real terms by 1.1% from 2000 to 2010. Instead, tuition fees have increased by 2.5% over the same ten-year period. Whether intentional or accidental, the funding of South African higher education seems to be shifting toward a cost sharing model, where the burden of higher education costs and the reliance on government for support was being recalibrated to the student/parent in terms of tuition fees. The consequence of increases in tuition fees has resulted in frequent and volatile student protests largely motivated by socio-economic motivations, exemplified by hashtag movements such as RhodesMustFall and FeesMustFall in 2014 and 2015.

Initially the government responded with a band-aid attempt at restructuring the national student financial aid scheme (NSFAS), which failed to substantially increase funding. Instead, the funding slice for student financial aid has increased while funding allocations for teaching have declined in real terms (Figure 3). However, the cost-sharing swing was disrupted in 2015 by the FeesMustFall movement when national government discussions about fee-free higher education were initiated. By December 2017, the governing party announced fee-free higher education for the poor and missing middle. Without student fees and/or fee increases as an income stream, universities are currently hard-pressed to hire more staff, run operations and maintain existing infrastructure. Overall, it is unlikely that staff-student ratios will decrease in the near future and, the quality of higher education teaching is under threat (Jansen 2017) as are the prospects of student success.

The third expression of reformation relates to competitiveness which emphasises the increase of efficiencies and reduction of redundancies. This has been partially realised through mergers and de-mergers; fiscal control by government (where public funding is earmarked and government prescribes the type of activities the funding can be spent on), and demands for accountability of public spending (in particular, future government funding is based on satisfactory progress against government approved institutional plans and performance indicators). Universities have been somewhat more successful in responding to this type of reform compared to the other reforms. For instance universities have capitalised on the earmarked funding for the development

---

24 Ibid.
Government grant—funding to universities

Figure 3

Data source: CHE, 2017

Of teaching and research by creating centres of excellence, encouraging staff capacity development, and supporting the progression of emerging academics undertaking masters and doctoral studies.27

These structural reforms in higher education have placed explicit demands on teaching in public universities with the implicit expectation that enhanced higher education teaching and learning quality has the potential to enhance student success, which would in turn resolve the country’s need for skilled graduates which is essential for economic growth in the 21st century. Are the core elements of social justice indeed being addressed within this triumvirate of expansion, equity and efficiency; or do some elements dominate and eclipse others?

In response to the demands for improved teaching, an array of funded national interventions was introduced. This included the Foundation Provisioning Grant; the Teaching Development Grant; the Research Development and other infrastructure and efficiency grants.28 By 2015, (Figure 1) South Africa experienced a 3-percentage point increase in undergraduate participation rates since 2005 and a 2-percentage point increase in graduation rates. In contrast to this unspectacular performance, there was a significant decline in the dropout rate from 25% to 18%. This decline follows a concerted attempt by government to ameliorate the problem of student under preparedness, conceding that the


schooling sector was failing to expedite access to higher education especially for students from low socioeconomic contexts.

4 National Interventions to Facilitate Undergraduate Success

The decline in the dropout rate may be attributed, in part at least, to the Foundation Provisioning Grant and associated programme, which was institutionalized in 2004. Foundation provisioning sought to improve the academic performance of first-time entering undergraduate students, who are at risk of dropping out because of their poor educational backgrounds. Such students are placed on ministerially-approved extended curriculum programs, which are in most case one year longer than the regular qualifications. This is complemented by earmarked Teaching Development funds, which are directed at enhancing teaching capacity. Both teaching development funds and earmarked foundation provision funds aim to increase the average success rate and the graduation rate.²⁹

The State budget for the Foundation Provisioning grant has almost quadrupled since inception of the grant, from just under ZAR 85 million in 2004 to ZAR 336 million in 2017—an increase of 296% over 14 years. Therefore, it may be argued that foundation provisioning is an expression of willingness to move away from placatory rhetoric as national oversight bodies in higher education have begun placing emphasis on actions to improve and support teaching and curriculum reform in universities towards realizing the elusive ideal of student success.

Are the increases in funding for these specialised programmes paying dividends and to what extent does this investment improve student success? In short, the answer is affirmative; the success rates of students enrolled in foundation provisioning programmes have generally been stable while demonstrating a small (2%) upward trend over time. This is consistent with the growth in the number of programme offerings which in turn may be linked to the increases in the budgetary allocations for these programmes. Comparative analysis shows that the foundation students’ success rates are comparable with those of the whole student body despite their different risk profiles. This comparability suggests that addressing the articulation gap for students who are underprepared for existing mainstream higher education curricula improves

their performance to the extent that they are able to perform on par with their better-prepared peers.30

What can be considered noteworthy in the current foundation programmes, is their curriculum structure and content which bear the semblance of characteristics and attributes necessary to disrupt the general cycle of underperformance in higher education. Scott (2012) reminds us that the flexible curriculum framework of foundation programmes allows curriculum space for foundational learning and for fresh teaching approaches. More recently, increased academic support systems (Table 2) for under-performing students appears to be mitigating high attrition but has also resulted in unintended consequences: rather than graduate in minimum time, students are now being retained in the system for longer, which accounts for the low gains in graduation rates (see Figure 1).31 This unintended outcome is a consequence of the generous provision of academic support early in the undergraduate programme and the absence of distributed support in subsequent years, which means that students are often left to their own devices, and success is a function of survival rather than persistence in an often hostile institutional climate.32 Moreover, student profiling and early-warning systems are often premised on student deficits (such as at-risk of underperformance, failure or drop-out). Despite the ubiquity of these systems across universities in South Africa, very little is known about how students actually navigate existing curriculum structures. What are the student pathways that lead to success?

### TABLE 2  Academic support interventions deemed successful

<table>
<thead>
<tr>
<th>Interventions deemed successful</th>
<th>Description and examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Establishing organizational</td>
<td>These are functional units that offer a variety of services to students e.g. wellness programs, student academic development, non-academic support etc.</td>
</tr>
<tr>
<td>structures such as student</td>
<td></td>
</tr>
<tr>
<td>affairs and teaching and</td>
<td></td>
</tr>
<tr>
<td>learning units to promote</td>
<td></td>
</tr>
<tr>
<td>student success</td>
<td></td>
</tr>
<tr>
<td>Conducting student profiling</td>
<td>Commonly used surveys to identify student support and development needs (e.g. Sasse, Stars and SPQ)</td>
</tr>
<tr>
<td>initiatives</td>
<td></td>
</tr>
<tr>
<td>Implementing early-warning,</td>
<td>Systems to identify students who are not faring well and who are at risk of failing. It is argued that recognizing these students early enough and referring them onwards for appropriate support mitigates against drop-out and failure. E.g. AMS systems</td>
</tr>
<tr>
<td>tracking and referral systems</td>
<td></td>
</tr>
<tr>
<td>Coordinating first year</td>
<td>These initiatives are designed to assist undergraduate students in particular with transitioning from high school to university</td>
</tr>
<tr>
<td>experience and orientation</td>
<td></td>
</tr>
<tr>
<td>programs</td>
<td></td>
</tr>
<tr>
<td>Accommodating academic literacy</td>
<td>Because the majority of students enter university where the language of instruction is not their mother tongue, these ‘enabling’ courses (mandatory or elective) are included in the curriculum.</td>
</tr>
<tr>
<td>and language development in</td>
<td></td>
</tr>
<tr>
<td>the curriculum</td>
<td></td>
</tr>
<tr>
<td>Providing subject-specific</td>
<td>Provision of mandatory small group tutorials, SI, on-demand tutoring etc.</td>
</tr>
<tr>
<td>academic support and development</td>
<td></td>
</tr>
<tr>
<td>Implementing co-curricular</td>
<td>Mentoring, peer-support, curriculum advising and counselling, support for students in residences, support for students with disabilities, career guidance etc.</td>
</tr>
<tr>
<td>support activities</td>
<td></td>
</tr>
</tbody>
</table>

Data source: CHE (2015) - p.113-130

### 5  Transforming Curriculum Structure to Mediate Student Success

An emergent discourse in South African higher education revolves around demands for the decolonisation of the academy.33 Shay (2016, cited in Heleta

33 (see Mgqwashu). “Universities Can’t Decolonise the Curriculum without Defining It First,” https://theconversation.com (2016); Savo Heleta, Decolonisation of higher education:
2016, 1) articulates the essence of the campaign: “students have called for the end of domination by white, male, Western, capitalist, heterosexual, European worldviews in higher education and incorporation of other South African, African and global ‘perspectives, experiences [and] epistemologies’ as the central tenets of the curriculum, teaching, learning and research in the country.” The substance of this discourse is often reductionist and is typically linked to curriculum as content, which is believed to be rooted in colonial epistemologies. Mgqwashu, (2016) cautions against simplistic definitions: “decolonising the curriculum is far more nuanced than replacing (European) theorists and authors” (with African ones). Regrettably, the populist discourses on curriculum transformation, which is largely ideological in orientation, pays little attention to curriculum structure, which indeed also has its roots in colonial prescripts, which are often inappropriate for the African context. By curriculum structure we are referring to the dominant model adopted more than a century ago, based on assumptions about students’ prior knowledge, pedagogies, time and duration of learning programmes, sequencing of modules, the pace and flexibility of progression pathways, credit allocation, combinations of modules, pre and co requisites, amongst others.

One noteworthy response and arguably, one of the more ambitious attempts to initiate substantive curriculum reform at the structural level to address student success in South Africa has been the Proposal for Undergraduate Curriculum Reform in South Africa. Led by the Council on Higher Education (CHE) in 2013, it noted that South Africa’s current colonial inspired curriculum structure, adopted almost a century ago, has remained largely unchanged, despite the major societal and economic changes, which constituted a prima facie justification for a review. The report analyses the role of curriculum structure as a systemic variable affecting student performance, with particular reference to the availability of sufficient curriculum time and space for necessary reforms. The report advocates the extension of the undergraduate programme to provide additional curriculum time to enable students to develop sound academic and psychosocial foundations. The proposal claims to addresses three structural dimensions in the higher education curriculum. The first is the articulation gap between schooling and higher education; the second is the key transitions for which students are differentially prepared; and the third is the need for undergraduate curricula to be enhanced in order to meet contemporary local and global conditions.34

The essence of the proposal is that all undergraduate programmes should be extended by one year, to “ensure realistic starting points and progression paths, and to introduce valuable forms of curriculum enhancement.” This model would emphasise flexibility allowing students to exit earlier if they demonstrated the capacity to do so. Using complex modelling techniques, the report deemed the proposal to be more cost effective than the status quo. Using scenario-modelling techniques, this claim was later found to be flawed.

On the face of it, the proposal offers an opportunity to re-envision the existing curriculum structure beyond its colonial prescriptions. Regrettably, the proposal undermines itself by cautioning that there is an “irreducible core” in the curriculum that needs to be preserved. The irreducible core was interpreted to be an attempt at preserving the vestiges of colonial content. Concerns were then raised that “the existing curriculum will in fact, with all of its structural pathologies, be ‘stretched’ to accommodate an additional year, wherein student un/under-preparedness will be remedied,” without necessarily enhancing student success. The proposal, with its conservative (biblical) undertones, was an attempt to “advance an econometric model to solve a pedagogic problem.”

In 2015, the Department of Higher Education (DHET) rejected the proposal, arguing that the CHE modelling failed to consider the Foundation/Access Programmes as a key driver in curriculum reform, which, the DHET argued, had impacted student progression over the interceding years. In cautiously welcoming the DHET stance, we argued that Foundation/Access Programmes do support an alternative Multi-Trajectory Approach (MTA) to designing curricula. The MTA approach “is a departure from the perfunctory normative and mimetic approach to curriculum design, and disrupts curriculum rituals, without sacrificing rigour in delivery.” MTA makes a distinction between the curriculum as a body of knowledge and associated experiences, “arranged in a specific sequence, determined by logic and conditions for scaffolding (see Vygotsky 1978), distinct from a progression plan, which is a specific route taken by a student or group of students through such a curriculum.”

35 Ibid.
37 Ibid., 171.
38 Ibid., 177.
40 Ibid., 101.
Our first assumption in advocating MTA is that there exist multiple routes for progression through a curriculum, whether it is a mainstream or extended. Typically students chose routes prescribed in Faculty Handbooks that often have no correlation to successful precedents. The second assumption is that curricula chosen and their associated progression routes, are often a function of historicised, ritualised practices rather than informed by empirical logic. The third assumption is that a typical curriculum is characterised by a prevalence of pre-requisites and co-requisites, “which often serve as gatekeepers or gateway courses, are evidence of this ritualised behaviour in which the curriculum is accorded sacrosanct status, regardless of the outcomes.”41 Rawatlal (2018, 295) argues that “in addition to being error prone, the unavailability of curriculum structure information in a database makes it impossible to perform wide-scale analysis and hence to determine the progression characteristics on a faculty or college level.”

Noting the above, we contend that modern analytic methods such as those afforded by Artificial Intelligence (AI) now “enable data-mining of progression information from successful students to determine how existing curricula and timetables may be optimised.”42 Such data mining has the potential to provide insights into the less visible elements of curriculum structure, which are rarely interrogated. These include, how courses are sequenced and scheduled, and what motivates the logic of such sequencing; the conditions of pre and co-requisites required for the acquisition of foundational knowledge and skills and what informs student choice in selecting modules, combinations of modules and how these are sequenced. Analytics makes possible the assessment of whether the pre- and co-requisites actually promote concept scaffolding or whether content-drift has made them irrelevant. For instance, machine learning can reveal whether pre-and co-requisites actually feature in the data analysis when cross-correlating requisites and the courses they are intended to support. The application of AI algorithms enables the analyses of large data sets to generate natural-language advice to staff and students in monitoring persistence and progress, including real-time alerts to students.43

A concrete illustration of one such approach is the AutoScholar Advisor systems being implemented in three South African universities. This advisory system is a home-grown progression mapping tool, which provides a host of

---

41 Ibid., 102.
curriculum data by mining student information to: obtain real-time views into student records, school data, and programme information; apply progression mapping to reveal student progression routes; identify major obstructions to student progression; deduce the curriculum structure of the core content of any programme to about 92% accuracy. Such a system may also facilitate richer analyses, e.g. determining how on-track students are performing with respect to minimum time progression. The tool is accessible to both students and staff to provide signals to alternative curriculum pathways which have a history of success. This data, when aggregated has the added potential to harvest evidence for “more substantive curriculum reform to address what has become a stubborn pathology in higher education reform.”

Perhaps the most valuable application of artificial intelligence and its contribution to the AutoScholar, is its potential to satisfy the obsession of academicians and policy makers to change the content of higher education curricula as a tangible illustration of curriculum transformation. The current plea for change is ideologically grounded as demands for the stripping out of colonial content reverberates. Our view is that there is little merit in replacing one brand of ideological content with another—which has populist appeal. Ultimately, what content achieves hegemonic status must be determined by analysing its ability to cultivate productive graduate attributes. Such an analysis must be empirically derived through data mining of existing content to reveal the official curriculum, the enacted curriculum, the received curriculum, the hidden curriculum and the null curriculum. Such an analysis must privilege the interests and experiences of the student rather than advance the epistemological commitments of professors.

6 Concluding Comments

Globally, higher education is considered both a private and public good, and access to this good is often a proxy for a nation’s commitment to equity and social justice. Education systems are routinely reconfigured to meet the changing aspirations of its citizenry. The kind of changes envisioned and enacted are in turn reflective of what a society values as catalysts for successful navigation of public and private domains. It is not uncommon for change to be driven

45 AFT Higher Education. “Student Success in Higher Education.” American Federation of Teachers, USA (2011).
by ideological and political imperatives rather than pedagogic motivations, as has been the case of South African public higher education. We have witnessed more than two decades of tinkering around the periphery of substantive change in the form of programme reviews, organisational changes in the form of mergers and de-mergers, a litany of policies and plans none of which has advanced the project of improving student success.

Higher education has the remarkable capacity to insulate itself from substantive change while society demands graduate attributes which are socially, culturally and economically valuable for future generations. Despite the installation of democratic institutions to drive systemic change and the academic freedoms enshrined in the constitution, South Africa has not re-imagined curriculum. We should concede that part of the reason for the complexity we are experiencing today is precisely because our attempts at granting access to higher education has been successful, while our attempts at supporting them have been less successful. If structure delineates the boundaries and limits of curriculum, then we need to disrupt the hierocracy of the extant curriculum by appropriating the affordances of available technological tools to deconstruct “the totalising colonial project.” The curriculum transformation agenda can and should be realigned to address the current disembodied and disembedded structure while avoiding “perceptions of students as the ‘hassle factor’, and instead re-centre the students as individuals with their own identities and potential to thrive.”

7 Acknowledgements

Marco Bozza and Abdulbaqi Badru (Research Interns in the UKZN Teaching & Learning Office)


References


