

Learning Analytics at the University of South Africa: Towards a 'student-institution' integrated framework of analytics

Professor Mandla Makhanya, Principal and Vice-Chancellor, Unisa
Mr Glen Barnes, Director Information and Analysis, Unisa

INTRODUCTION

The initiatives to improve student throughput at Unisa have at their core the Socio Critical Model of Student Success developed by Subotzky and Prinsloo (2011). Within the model, emphasis is placed on the integration of information around both student and institution, and the need to consider the concept of student success as the responsibility and domain of both the student and the institution. The concept of an 'at-risk' student therefore needs to be refined and cannot only be viewed as a 'deficit' within the individual, but also considered in the context of institutional structures and processes which impact student success.

A number of projects at Unisa consider the integration of Academic Analytics (AA) and Learning Analytics (LA) as described by Lemmens and Henn (2016) and are being deployed to decision making structures in various ways, one of which being the development of the DIA Apps - an online repository of integrated, 'real-time' descriptive and predictive analytics. The focus of this development is not the search of the 'ultimate' predictive model, but rather the collation of a broad base of related data and information to support the decision-making process.

In response to the social, historic, political, economic and cultural challenges facing South African higher education, Subotzky and Prinsloo (2011) propose a definition of student success that consists of five constructs, (1) the situated agents (student and institution); (2) the interaction between the student, institution and networks (the student walk); (3) capital; (4) habitus; and (5) the domains and modalities of transformation (Figure 1).

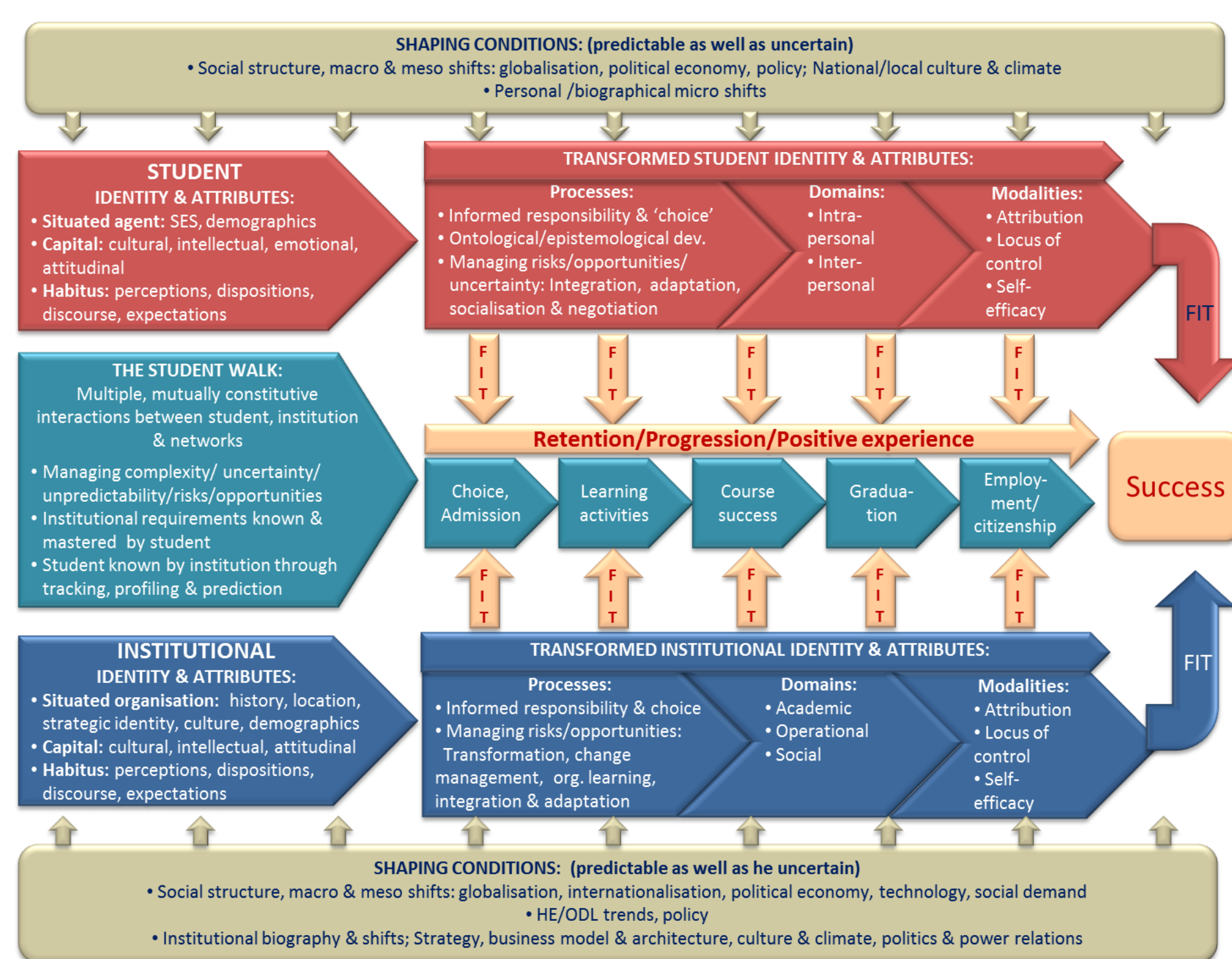


Figure 1: The socio-critical model for student success

DISSEMINATION OF INFORMATION

One of the initiatives in the provisioning of data and information is the deployment of a collection of separate but integrated 'modules' in an online environment known as the DIA Apps. This initiative has the objective of provisioning detailed and aggregated information in a user-interactive environment focused on various levels of granularity of available data. The data contained in the various reports and dashboards are linked via a comprehensive navigation system termed the Digital Decision Network Application (DigitalDNA) described by Archer and Barnes (2016). The component design framework of the DIA Apps development is summarised in Figure 2.

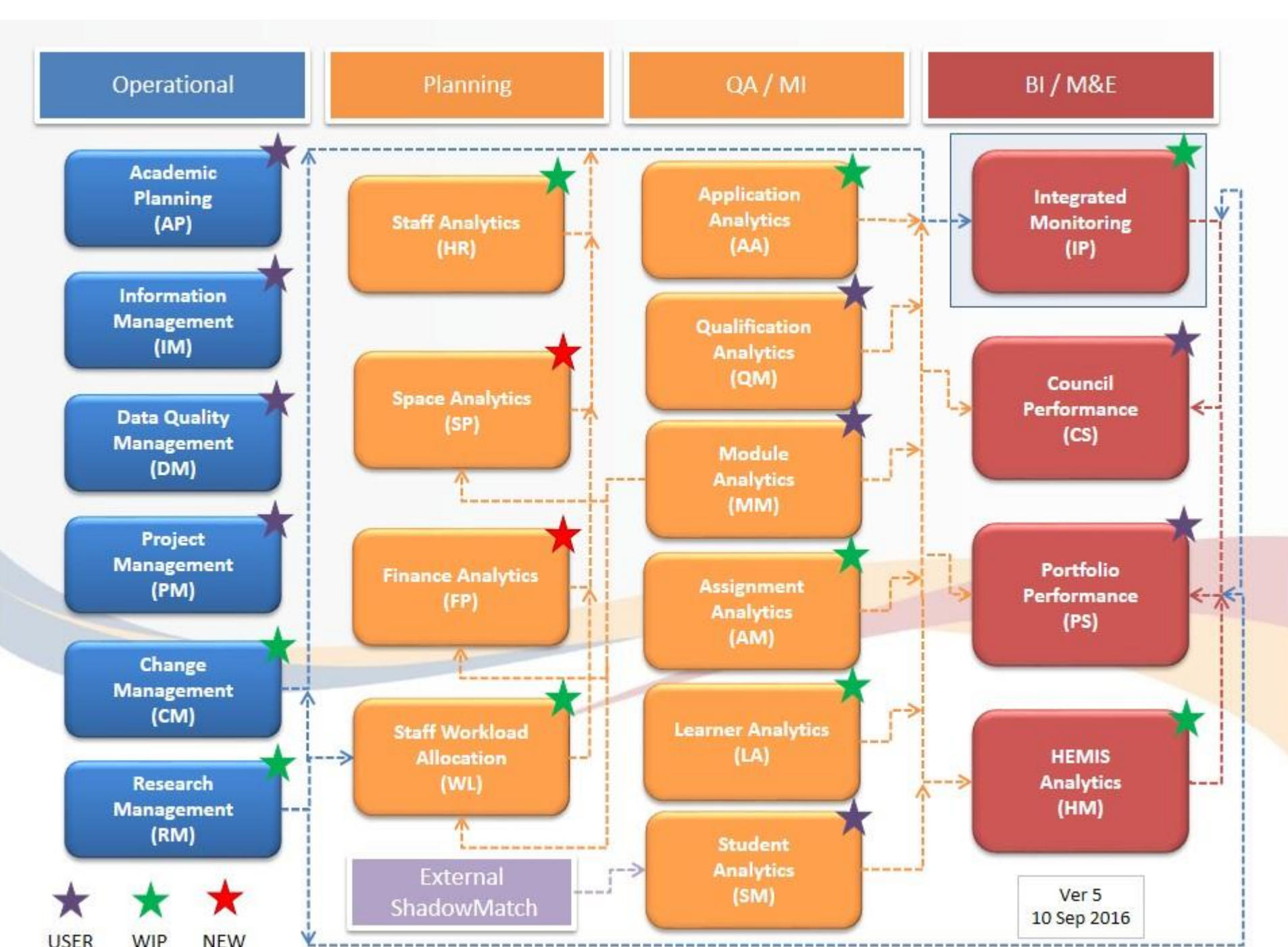


Figure 2: The component design of the DIA Apps development

THE INTEGRATION OF EXISTING PROJECTS

The integration with current initiatives and student success projects is vital if the objective of 'collation' of a broad base of data is to be achieved.

a) Module risk rankings

The process of identifying modules 'at-risk' is done collaboratively (annually) with colleges to ensure that the understanding of risk is nuanced and contextualised within each college.

b) The Shadowmatch® project

This project provides information about the habits and behaviours of students and forms part of non-academic risk and success factors. The initiative is voluntary and the tool is available online with feedback to the student via a Personal Development Plan (PDP).

c) Student profiling

Profiling is done on a range of data points to understand issues like (1) access to online resources, (2) the uptake of technology, (3) the proficiency and maturity of students in prescribed technologies, and more.

d) Progression analysis

The re-admission policy of Unisa aims to steer students along a trajectory of progression, these rules are contained within progression analyses and the results visible in the student dashboard.

e) Student tracking

The purpose of the student tracking system is to disseminate information to the various support and tuition departments to ensure the proactive and timely intervention with 'at-risk' students.

THE STUDENT DASHBOARD

This development aims to culminate the collation of all student-related data and to package this in a way that assists interpretation of the data and the implementation of interventions. The dashboard is a collection of enriched analytics and adopts a 'information-on-demand' approach to limit information overload. An example of the dashboard is given in Figure 3.

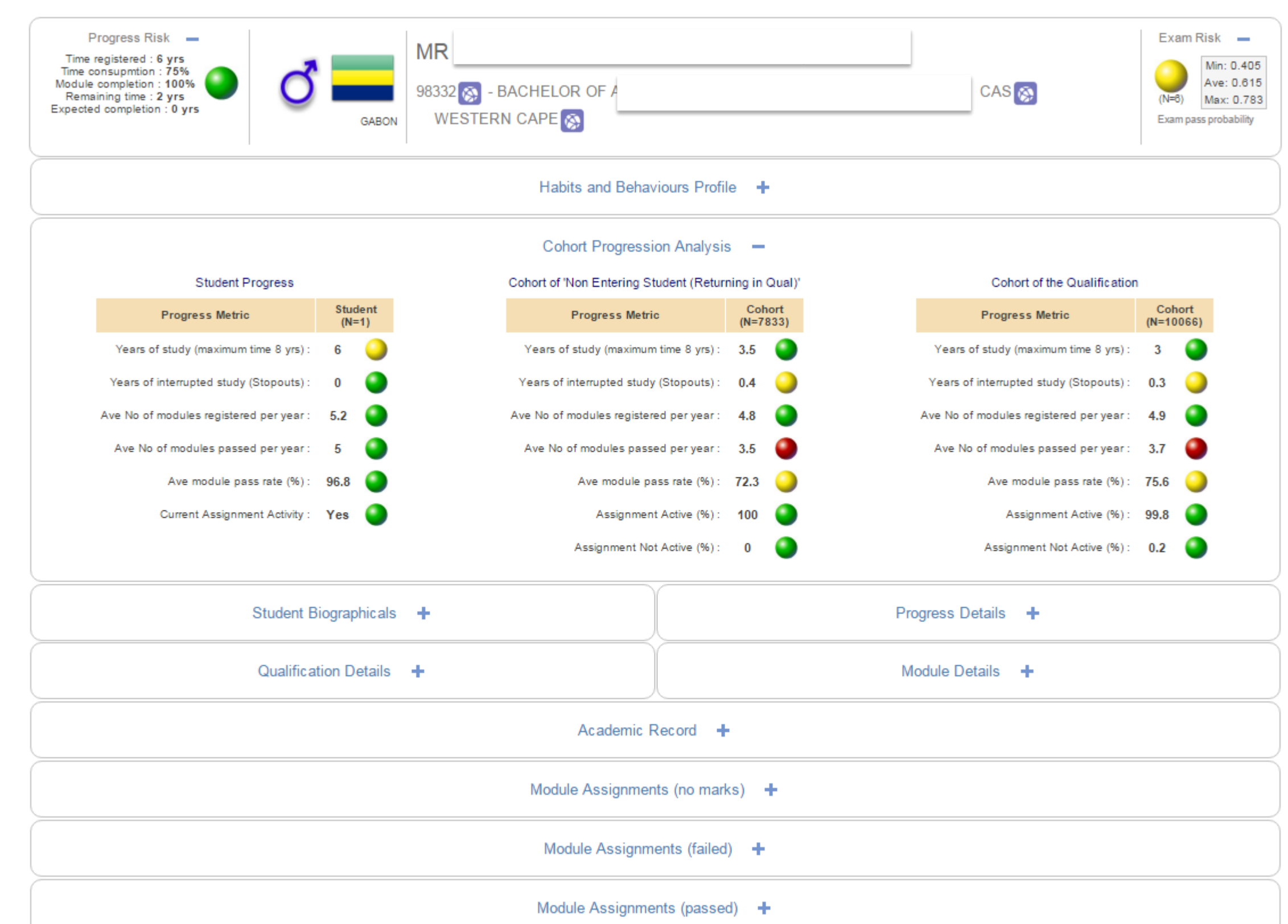


Figure 3: An example of the student dashboard

CONCLUDING REMARKS

Learning analytics at Unisa is in the initial stages of conceptualisation and deployment. A number of initiatives and projects deal with 'related' analytics and the aim is to 'collate' all related data and to package these in various forms in support of the decision-making process. Much still needs to be done on the integration of 'bigger' data from the virtual learning environment before a meaningful impact of learning analytics is realised. Discussions also need to consider the ethical aspects, moral obligations and the risks and dangers of using 'bigger' data in the quest for improved retention and throughput.

REFERENCES

- Archer, E and Barnes, G (2016). *Revisiting sense-making: The case of the Digital Decision Network Application (DigitalDNA)*. Accepted for publication in IDRRODL, in press.
- Lemmens, JC and Henn, M (2016). *Learning Analytics: A South African Higher Education Perspective*. Chapter 12 in *Institutional Research in South African Higher Education*, Editors Jan Botha and Nicole J Muller.
- Subotzky, G and Prinsloo, P (2011). *A Framework and Strategy for Enhancing Student Success at Unisa*. Final report Prepared by Task Team 6, 30 May 2011.