2016

SAHELA

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Southern African Association for Institutional Research

SAHELA 2016 Workshop

University of Pretoria & University of the Free State

Closing the loop!

(of Knowledge, Action and Intervention)

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Welcome

- 4the Meeting: Closing the Loop
- Aim: SAHELA
- Role of Stakeholders
- Disclaimer
- The road ahead

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A Framework for Learning Analytics

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What is Learning Analytics?

Learning Analytics and Knowledge Conference, 2011

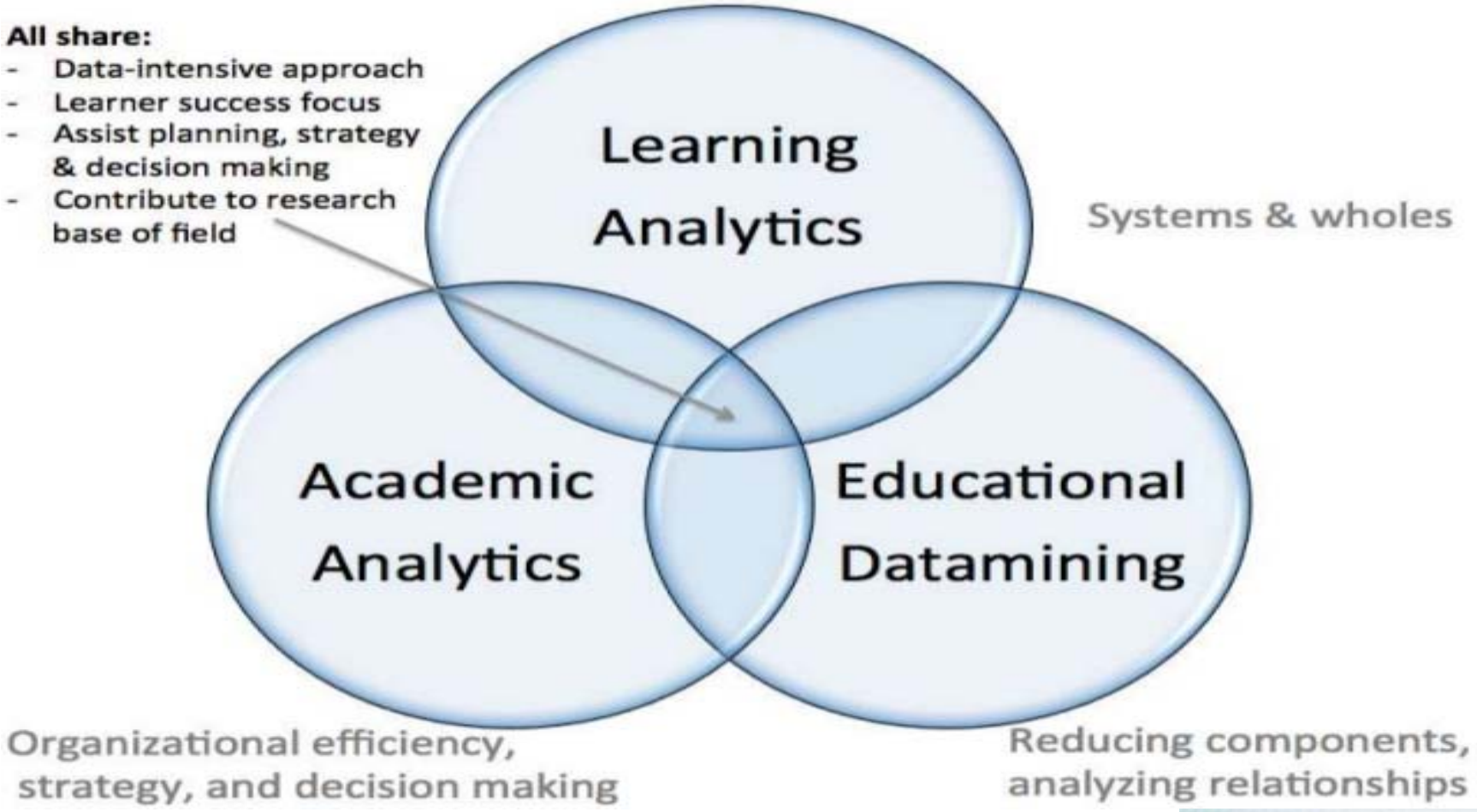
Learning analytics is the **measurement**, **collection**, **analysis** and **reporting of data** about **learners** and their **contexts**, for the purpose of **understanding and optimizing learning** and the **environments** in which it occurs.

Academic or Learning Analytics

Learning and Academic Analytics

Type of Analytics	Level or Object of Analysis	Who Benefits?
Learning Analytics	***Course-level***: *social networks, conceptual development, discourse analysis, "intelligent curriculum"*	*Learners, faculty*
	Departmental: *predictive modeling, patterns of success/ failure*	*Learners, faculty*
Academic Analytics	***Institutional***: *learner profiles, performance of academics, knowledge flow*	*Administrators, funders, marketing*
	Regional (state/provincial): *comparisons between systems*	*Funders, administrators*
	National and International	*National governments, education authorities*

Nexus of analytics and data mining



SOLAR
SOCIETY for LEARNING ANALYTICS RESEARCH

Analytics in Higher Education

Learning Analytics

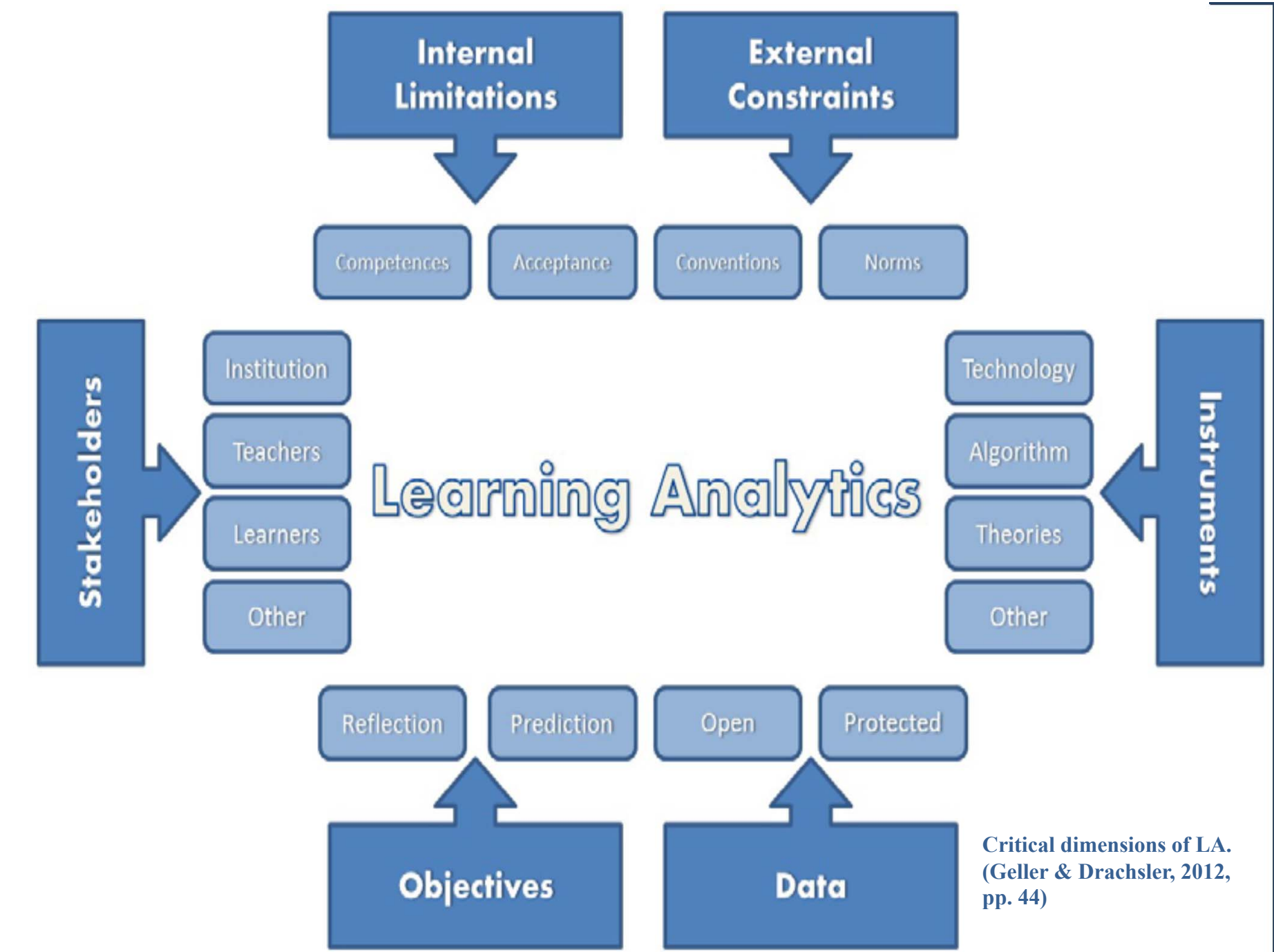
Best way to teach and learn

Learner Analytics

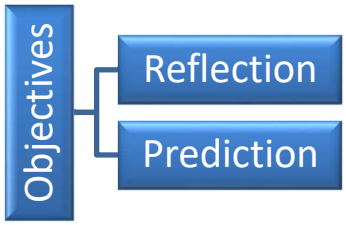
Best way to support students

Action Analytics across an institution

Best way to operate a college inclusive of functions including enrollment management, HR management, facilities management



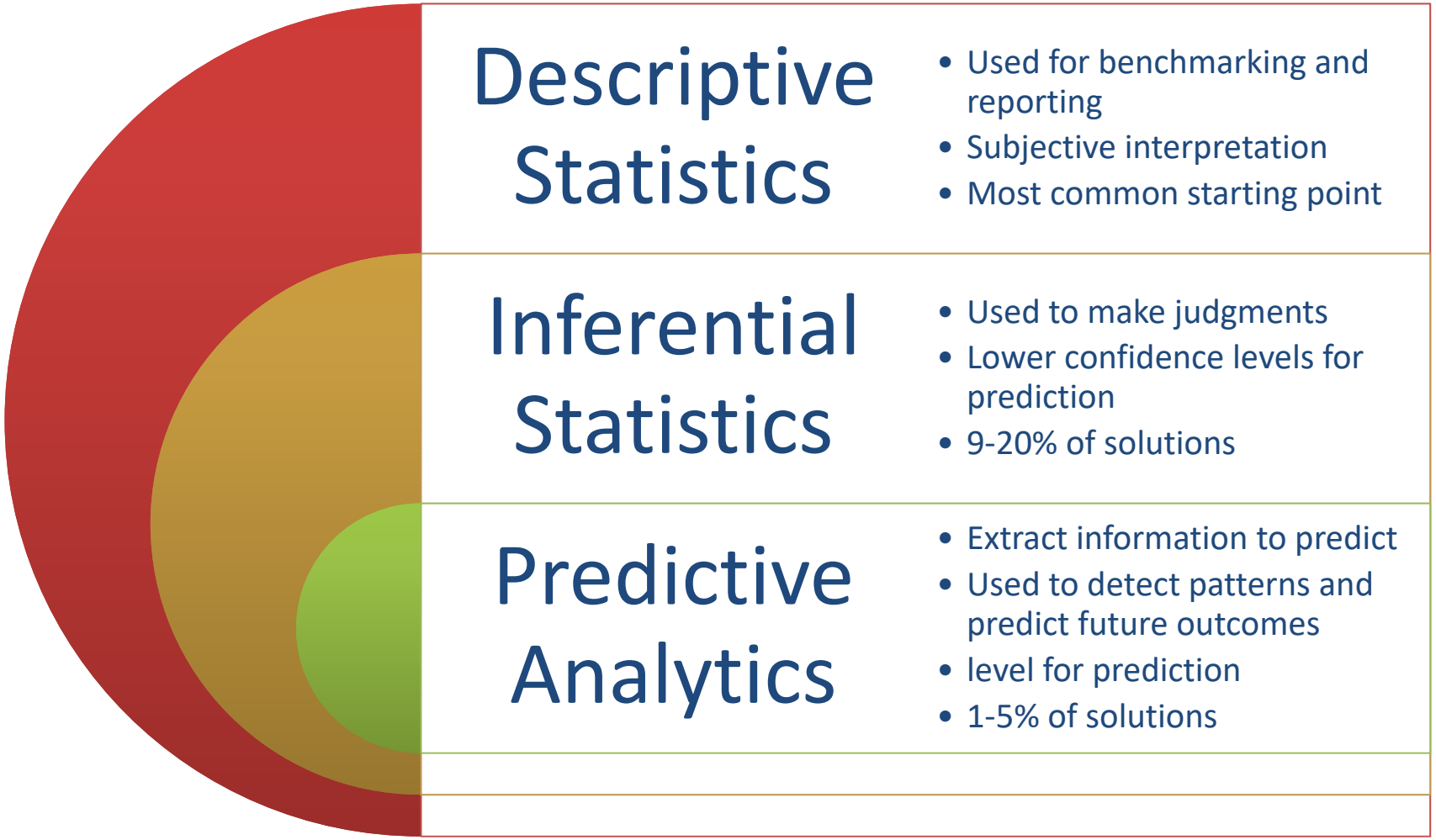
Critical dimensions of LA. (Geller & Drachsler, 2012, pp. 44)



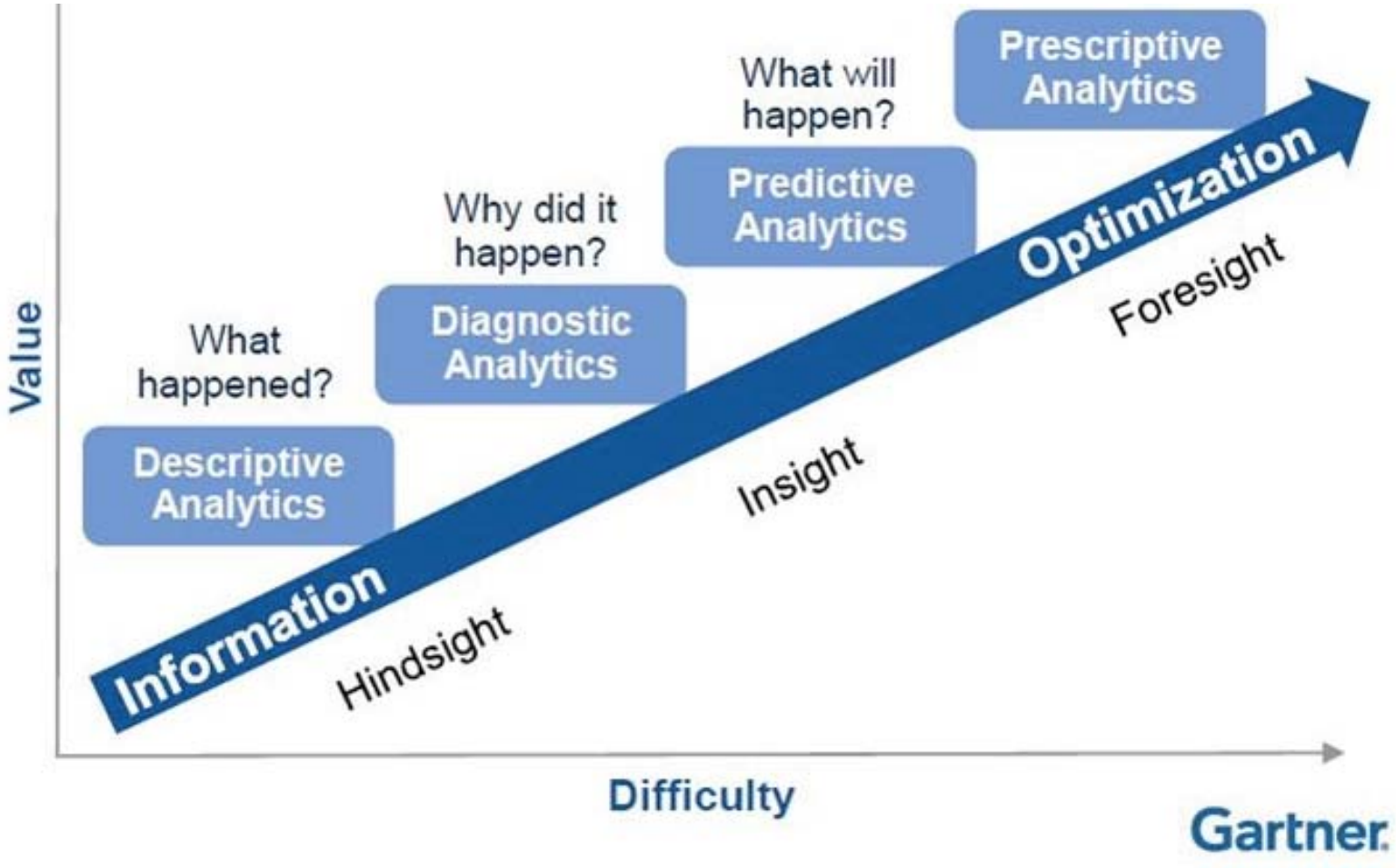
Objectives of LA

- Reflection/ description of:
  - students based on normative data
  - lecturers reflecting on the learning process of their students
  - institutions evaluating and reflecting on groups of students
- Prediction suggests a statistical modelling of the data about the student learning process in order to provide support to students with similar characteristics to those of the target group modelled in the analysis.

Levels of Analysis



From Hindsight to Foresight



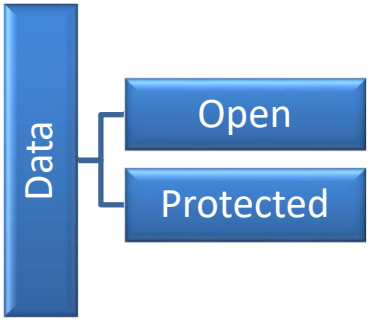
Different Levels of Insight

Descriptive Analytics

1. How many logins, page views, and other metrics have occurred over time?
2. What were the course completion rates for a particular program over time? What were the attributes of the students who didn't successfully complete?
3. Which tools are being used in courses the most?

Predictive Analytics

1. Which students are exhibiting behaviors early in the semester which put them at risk for dropping or failing a course?
2. What is the predicted course completion rate for a particular program? Which students are currently at risk for completing and why?
3. Which tools and content in the course are directly correlated to student success?



Data for LA

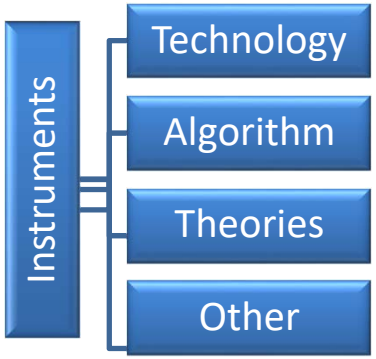
- Student record data from LMS and other sources. This is more than we can sense and goes beyond numbers and categorical labels to include things like text, images and video
- Mash-ups of data from different sources to facilitate learner-oriented services and personalisation
- LA data is protected or proxy access, which limits the evaluation of LA models - Anonymisation is one means of creating access

Data dimension questions

- Who collects data?
- Are all the variables you need to answer your question(s) available? If not, do proxies exist?
- In what format?
- At what level is the data?
  - Per course
  - Per student
  - Per term
  - Per login to the LMS
- How reliable are the data?
- What other data are available - unstructured?

Data dimension questions

- What impact does ethical aspects have on the way data is collected and shared?
- Who receives this information?
  - Advisors
  - Other support service providers
  - Lecturers
- What do they do with it?
  - Contact the student – with what messages?
  - Offer assistance – what kind?



Instruments for LA

- The technology element refers to the analytical application of:
  - educational data mining
  - classical statistical techniques
  - data visualisation
- Statistical algorithms that are used by the technology applications to transform data into information
- The theoretical constructs, such as self-regulated learning, should be operationalised appropriately and underpinned by theory

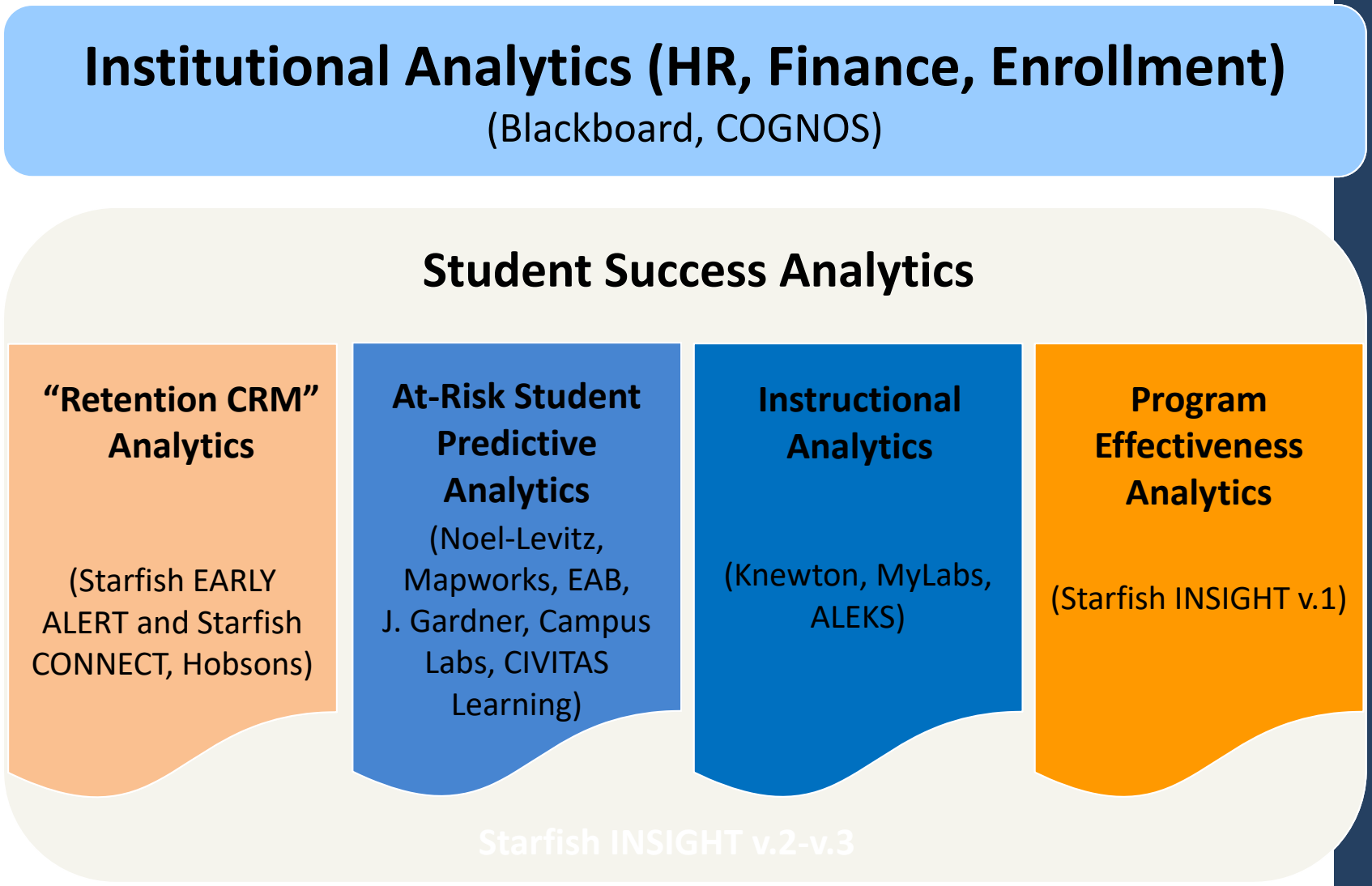
Statistical analysis

- Descriptive analysis
- Bayesian models
- Percentiles
- Cluster analysis
- Neural networks
- Regression analysis
- Decision Trees (e.g. CART)
- Other ‘qualitative’ data (survey, speech, text)

Multiple technology solutions in each application category

	Education Planning	Counseling and coaching	Risk Targeting and Intervention	Transfer and Articulation
Legacy ERP/SIS/LMS	ellucian, ORACLE PeopleSoft, JENZABAR, Bb Blackboard, Desire2Learn Innovative Learning Technology, m			
Vendor point solutions	connectedu EDUCATION & CAREER MANAGEMENT, campuscruiser, campuslabs Data Driven Innovation	Microsoft Dynamics CRM	Starfish retention solutions, INTEGRA, hobsons, CIVITAS LEARNING	parchment credentials unleashed, NUVENTIVE
Homegrown point solutions	eAdvisor; *Sinclair's MAP*; *Valencia's LifeMap*; *Austin Peay's Degree Compass*	STUDENT SUCCESS PLAN; *Central Piedmont's Online Student Profile*	course Signals; *WICHE's Predictive Analytics Reporting*	
Direct-to-student	connectedu EDUCATION & CAREER MANAGEMENT, myEdu		PERSISTENCE +PLUS	CollegeTransfer.Net

Higher Education Analytics Landscape



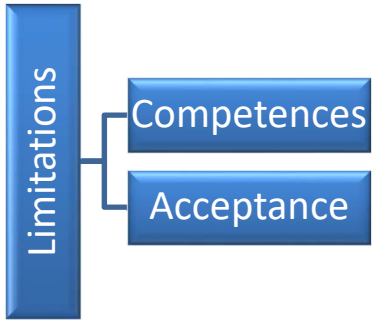
Adapted from Presentation by David Yaskin, President Starfish at IPAS Conference 2014

Instruments dimension questions

- Who analyses the data?
- What data are analysed?
- What assumptions are being made about the analysis/findings?
- What are the input variables and relation to outcome measures?
- What subgroups are used?
- What are the levels of analyses and why?
- What type of analytics is appropriate?

Instruments dimension questions

- Which technologies are available for LA?
- Which type of analyses (algorithms) are appropriate to answer the strategic goals?
- Invest in “open” or “black box” analytics?
- What theoretical/conceptual frameworks are used?
- Does the analytics lead to actionable activities?

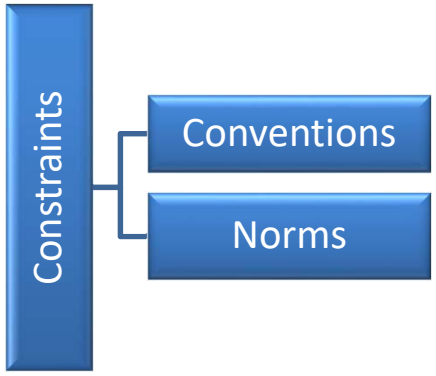


Internal limitations of LA

- The instruments and data sources are always used within the constraints of internal limitations such as:
  - the knowledge and analytical skills of the staff working with LA models and data
  - institutional culture and processes of change management operative in an institution
  - A reluctant or slow buy-in by stakeholders can also be an internal limitation.

Limitations dimension questions

- What skills are needed to analyse/interpret and report on the LA data?
- To whom are reported?
- To whom should there be reported?
- How can you ensure that LA initiatives are accepted widely?
- Do users have access fixed or dynamic reports?
- What interventions are associated with LA?
- How are results fed forward in the action enquiry framework – monitoring and evaluation?

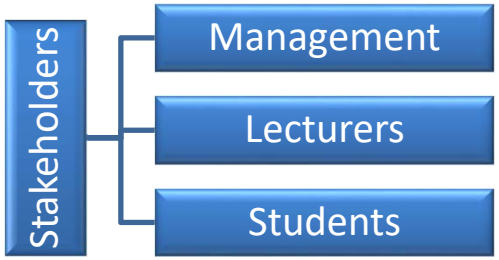


External constraints of LA

- The external constraints of LA focus on:
  - *Conventions* refer to ethics, personal privacy, and similar socially motivated limitations
  - *Norms* are restrictions imposed by laws or specific mandated policies or standards. These could refer to the institutions policies, practices, programs and processes

External constraints questions

- How can inappropriate or incorrect interpretations of data be managed?
- How is personal and institutional privacy managed?
- What are the ethical implications of not acting on student data?
- How is POPI integrated into the LA initiative?
- How do we ensure that what we measure is what matters?
- What are the policies, processes or practices that guide LA initiatives?
- What impact does restricted reporting have for LA?



Stakeholders of LA

The Stakeholders are the focus of the workshop:

- Students
- Lecturers
- Institutional management

Handout: Strategic Plan

List three key performance indicators that your institutions is focused on.

What are the appropriate data to measure these goals?

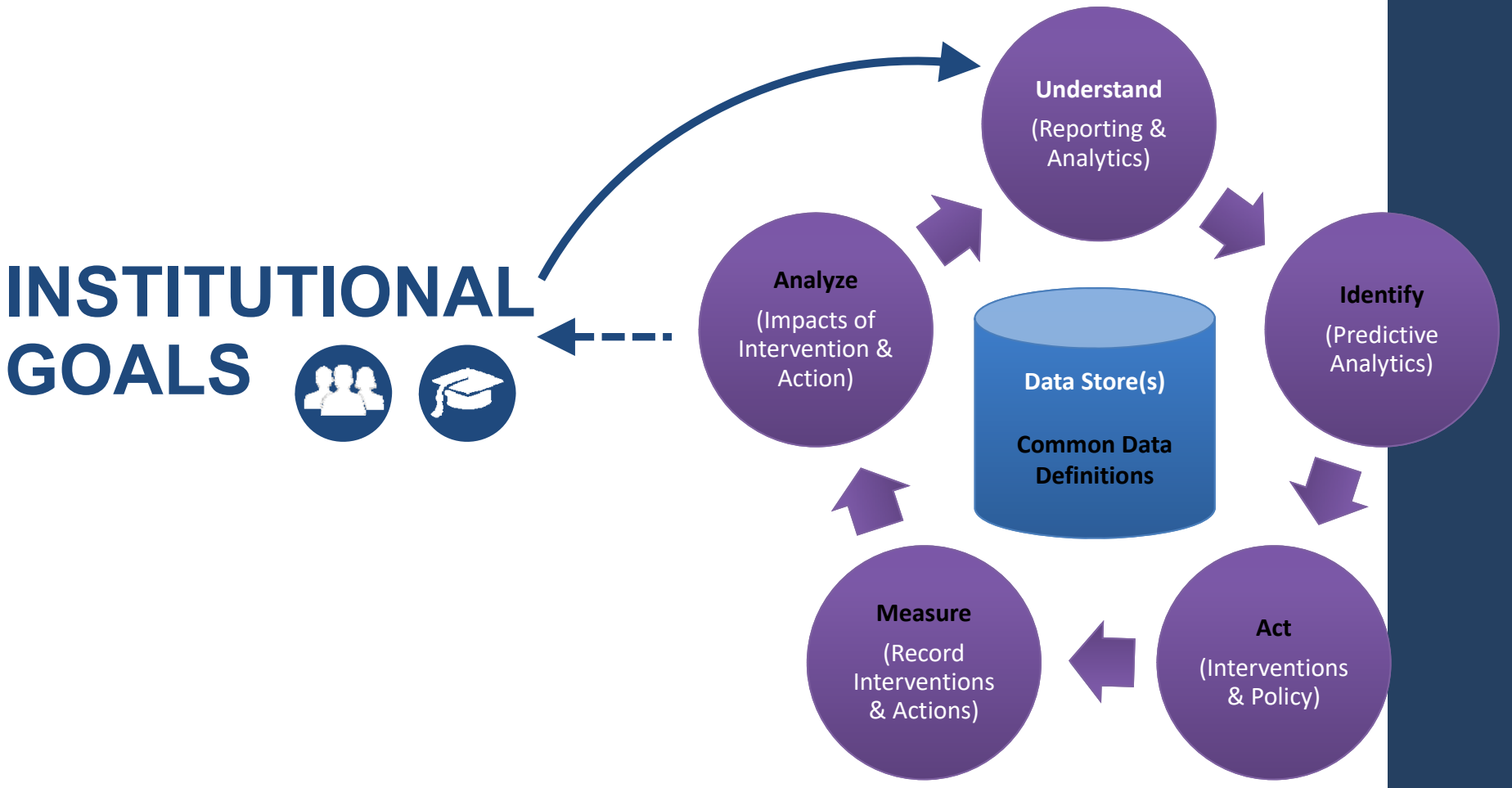
How are the findings reported so that it is both understandable and actionable?

How is insight fed back into the process of addressing institutional goals and creating new ones?

Activity (20 min)

University of Pretoria

Analytics in Higher Education



Handout: LA Framework

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- Reflection/ description of:
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Session 1 handout

1. In your own words, please explain what Learning Analytics is.

2. To your knowledge, are there any projects at your institution that make use of Learning Analytics?

☐ No

☐ Yes

If there are any projects, please explain briefly:

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State of Learning Analytics in South Africa

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“a South African Study”

- The Learning Analytical context is still in its infancy in South Africa but multiple institutions are displaying promising practices pertaining to the further development of the research field.

- This lead to the conceptualisation of this research project, which directly stems from the inaugural SAHELA conference in 2013.

- The SAHELA 2013 participating institutional representatives were approached to provide detail as to the further development of an Learning Analytical culture at their institutions.

Participants

UNISA university of south africa

UNIVERSITY of the WESTERN CAPE

UNIVERSITY OF THE WITWATERSRAND JOHANNESBURG

Tshwane University of Technology
We empower people

UNIVERSITY OF JOHANNESBURG

UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

Nelson Mandela Metropolitan University
for tomorrow
Port Elizabeth & George

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Critical dimensions of Learning Analytics

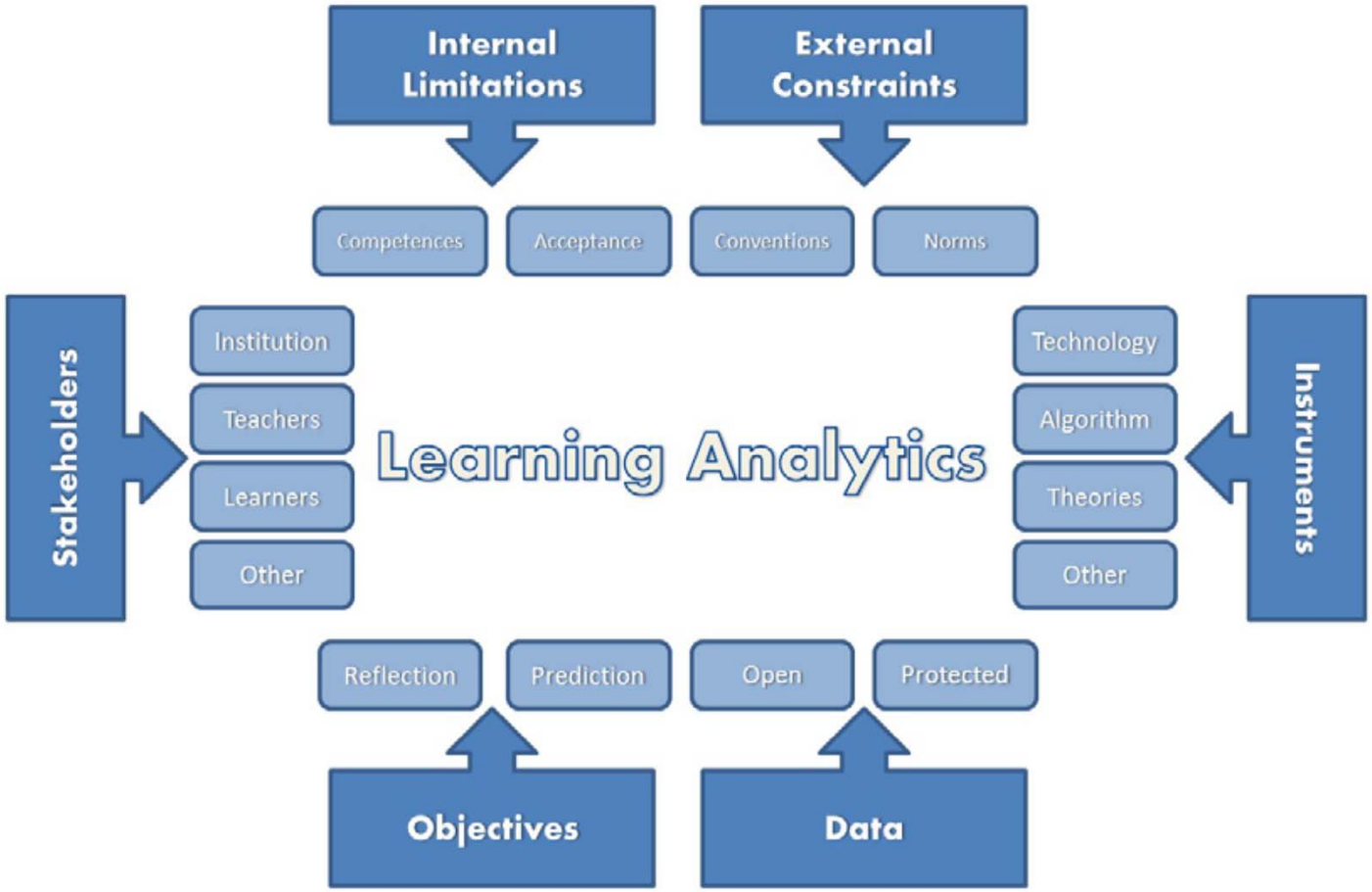


Figure 1. Critical dimensions of learning analytics. (Geller & Drachsler, 2012, pp. 44).

Survey Dimensions

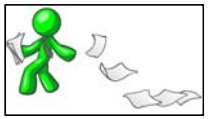
Stakeholders

Where are analytics located in the institution?
Who are the various stakeholders that benefits from the analytics? (e.g. data used to assist students, faculties/schools, departments, institutions…)

Objectives

What are the objectives of analytics at your institution? (E.G. descriptive and/or predictive)?

Data



What data is being collected? (e.g. learner characteristics, engagement, interventions, evaluations)
Are there specific times and events used to collect student and institutional level data?

Instruments

What analytics systems are being used
What analytical tools and dashboards are available?

Survey Dimensions

Limitations

Are staffs responsible for the analytics trained and knowledgeable?

Constraints

What processes does the institution have in place to deal with any legal or ethical issues? Who has access to the data?

Evidence of outcomes

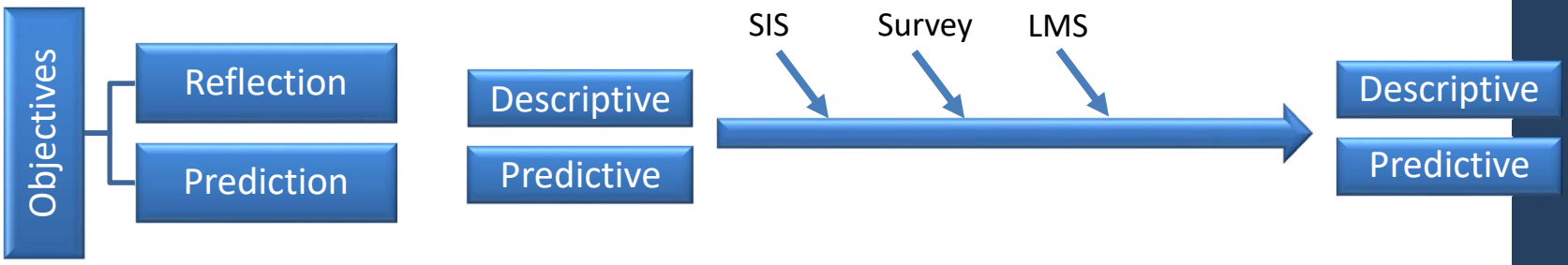
Any outcomes or achievements with regards to incorporating analytics? What interventions are taken as a result of the analytics?

Further developments

Future analytical driven innovations that aim to use student data to optimise their success?

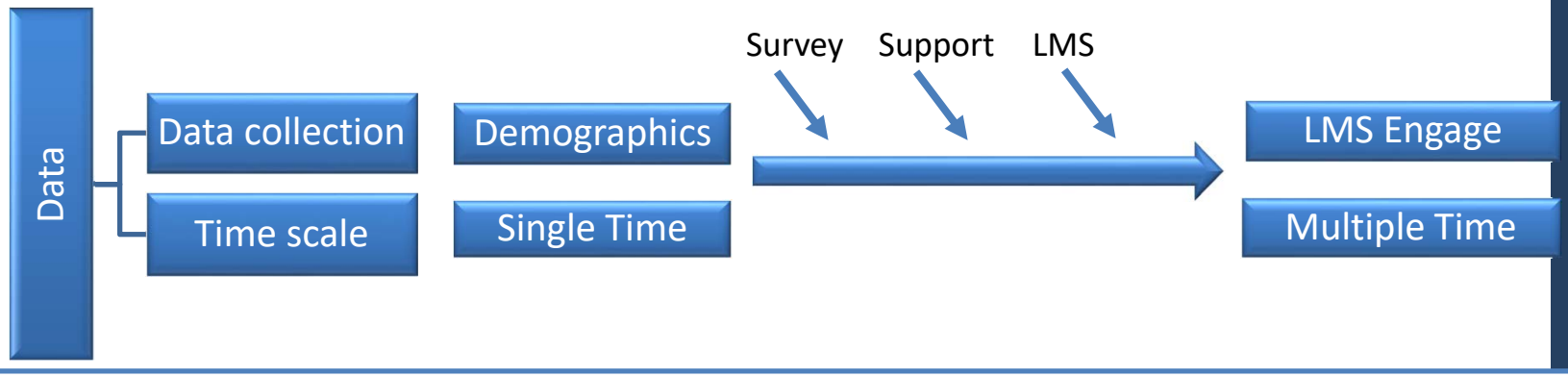
Rubric

Stakeholder: As the system matures, the stakeholders move from a meso level to a micro level and as the practices move from a highly decentralised data environment to a controlled centralised data environment as the system starts combatting data silos

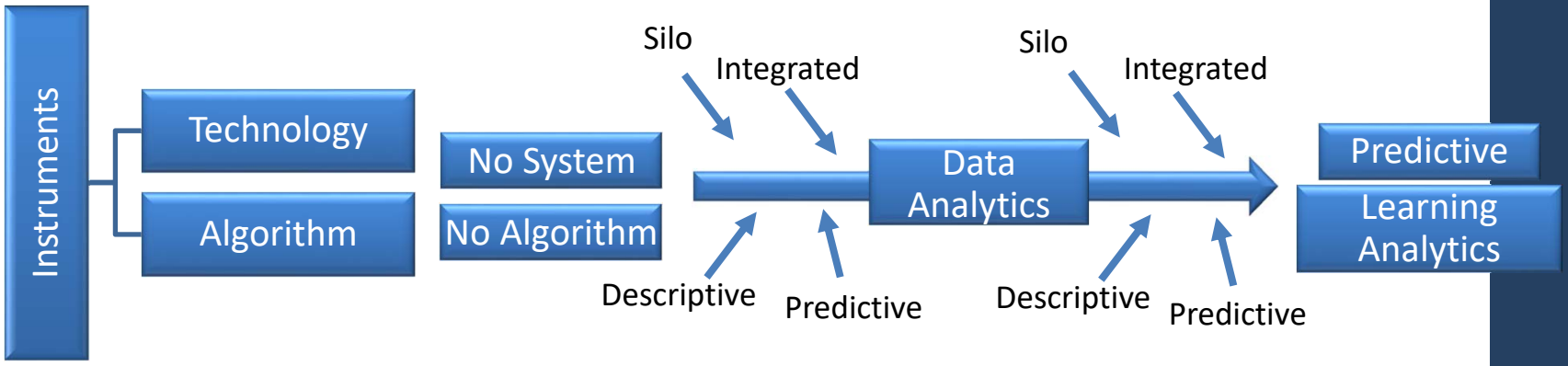


Objectives: The concept of Learning Analytics as part of the “big data” movement is to consolidate multiple data sources to provide a broader understanding of stakeholders. As the objectives strengthen the system includes both descriptive and prediction models

Rubric

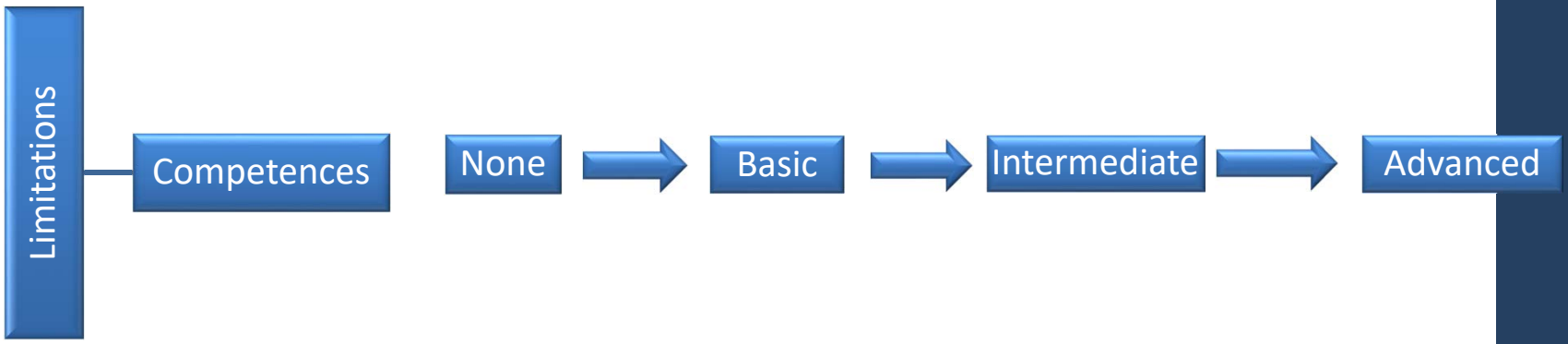


Data: To explore the abilities of Learning Analytics is to engage with more data and more frequently. This dimension as it matures move from a single to more complex data source and from a single point of data collection to a multiple time stamp

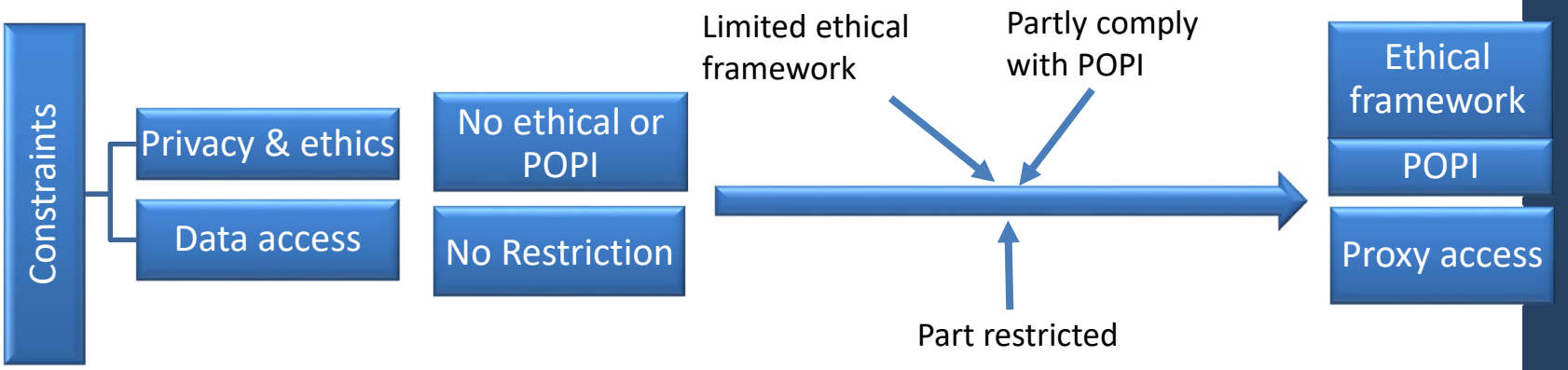


Instruments plays a pivotal role and its critical to reflect on the systems and methodology we use in an effort to better understand our students. This dimension matures from a Data Analytical focus to a predictive Learning Analytical focus

Rubric



Limitations: Capacity development internally to an institution can be a tremendous task and creating a culture of evidence and adopting analytical tools and techniques can be a limiting factor



Constraints: Two major constraints to the evolution of Learning Analytics is the sensitive matter of ethics and the governance of student data

Results

Code description	NMMU	UFS	UWC	Wits	TUT	UJ	UNISA	UP	Dimension max score
Stakeholder: Analytics	3	4	2	3	3	3	3	3	5
Stakeholder: Data users	4	4	3	3	4	3	5	5	5
Stakeholder: Practice	3	2	2	2	3	2	2	3	3
Objective: Reflection	4	4	4	4	4	4	4	4	5
Objective: Prediction	3	3	2	3	3	3	4	3	5
Data: Time scale	4	4	4	4	4	4	4	4	5
Data: Data collection	4	4	4	4	4	4	4	4	5
Constraints: Privacy and Ethics	3	3	3	2	3	2	3	3	3
Constraints: Data access	3	3	3	2	2	3	2	3	3
Instruments: Technology	3	3	3	3	3	3	3	3	5
Instruments: Algorithm	3	4	3	3	3	4	5	4	5
Limitations: Competence	3	3	3	4	3	3	4	3	4
TOTALS:	40	41	36	37	39	38	43	42	53

Summary of findings

- Magnitude of data available from MIS, SIS data, survey results, in some instances interventions are evaluated and prediction models are based on the data, however, LMS data is not used widely to inform teaching and learning.
- SMART data
- Interventions were inferred from data > outcomes NOT assessed – Planning for outcomes assessment prior to embarking on the intervention
- ‘Sophistication of the analytics system is not in centralisation but rather decentralisation’ (Jan Lyddon)

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Learning Analytics for students

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Contextual questions

- What interactions do your students have with the systems, policies and process that contribute to their learning experience?
- How much of your students' educational outcomes are due to internal factors or external factors?
- Think of a specific type of student at your institution that you want to understand better?
- What do students do with their data?
- What data is most useful for students?
- How do students use their data to better their learning?

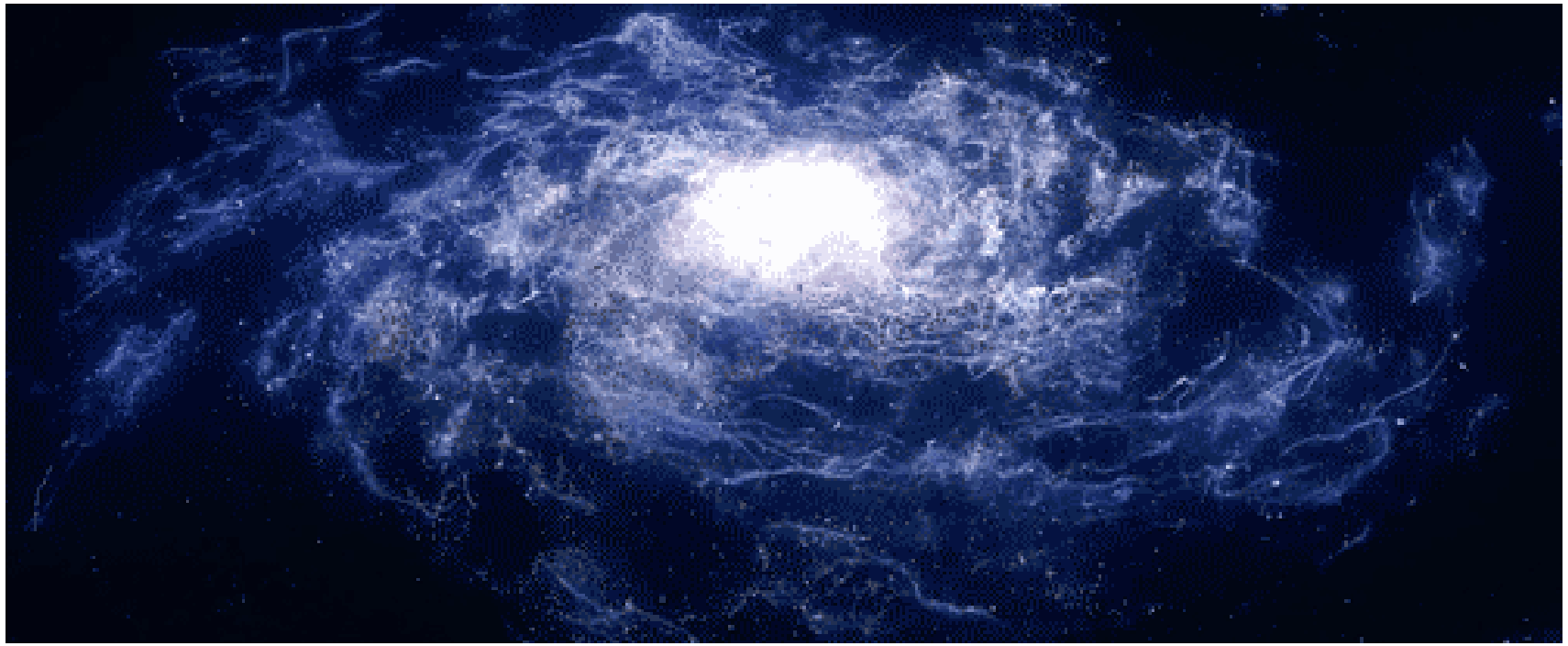
Learning Analytics for students

Students leave behind a digital footprint, this footprint can be seen on LMS, VLE, assessments, library and entering/exiting the campus.

According to Niall Sclater, Learning analytics is the process of using this data to improve learning and teaching:

- Students are not always aware of their performance in relation to their peers.
- Students are not always granted access to the data that they generate and their thus able to apply action.
- Students need continues formative feedback so that institutions can assist learners in transforming their learning and gain a better understanding of how they learn in relation to others.

How do some institutions combat this?



220 terabytes of web data
6 petabytes other data

=

3 times the amount of ALL the U.S. academic research libraries contents combined

IBM stipulate that users create 2.5 quintillion bytes per day… To put this into perspective, 90% of all the data ever has been created in the last two years

Learning Analytics for students

There is a lot of data out there…

What data is most useful for students?

What information should be shared with students?

- Monitoring data (Includes academic progress, level of engagement)
- Comparative data (Compare a students' progress with peers)
- Useful data (Information about exam times, class time tables)

How should this information be acted upon?

- Students should receive prompts and recommendations
    - Wellness centres, tutorials, advising, counselling
- Communication facilities with staff and students
- Providing consent to what data is used for learning analytics

How students use their data

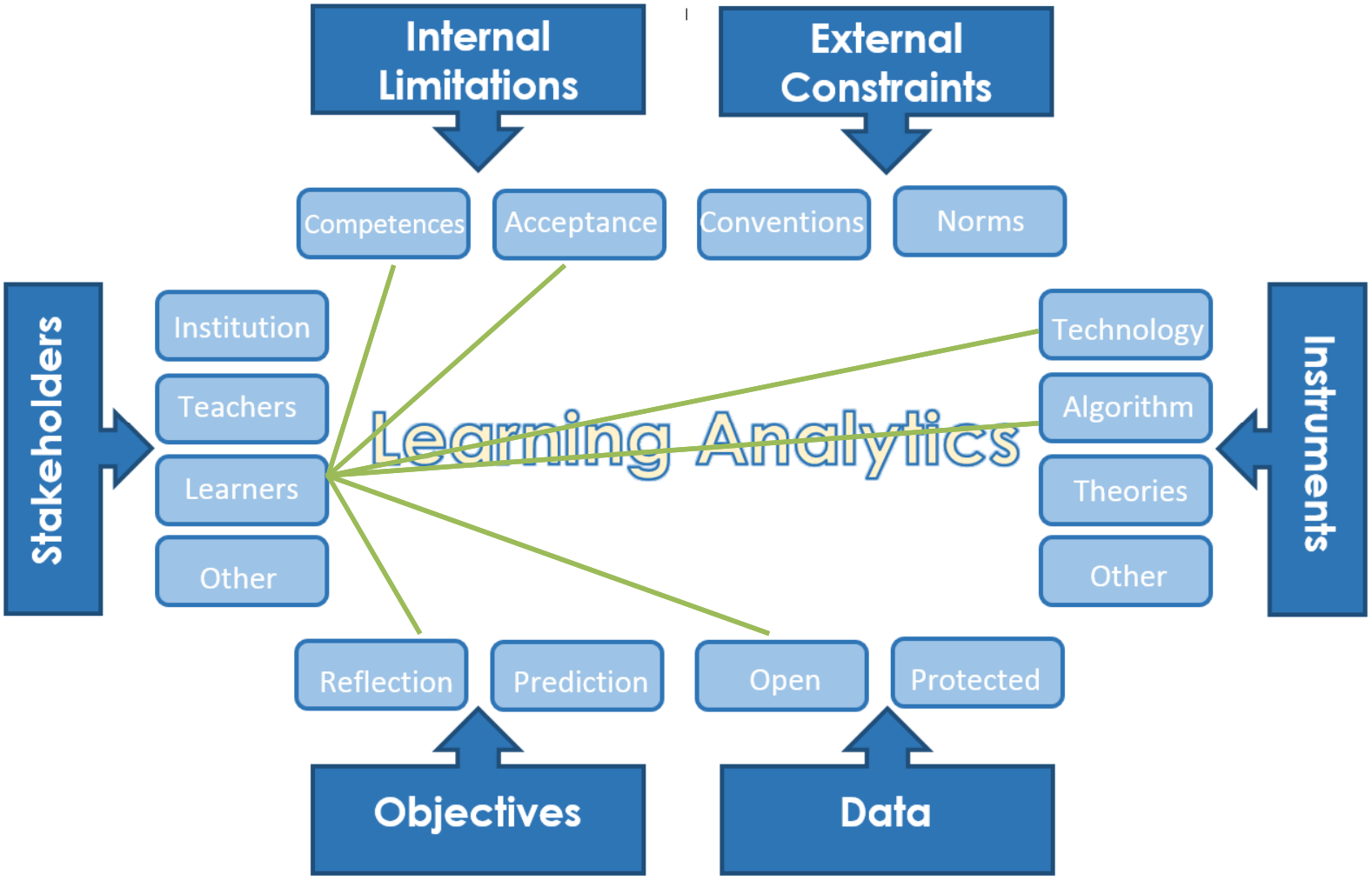
VLE at the University of Maryland, Baltimore County

Students submit and view their data using the “Check My Activity tool”
The CMA was developed for students to compare their own learning activity in a course against their peers

“obsessive status-checking tendencies” of students enabled:

- Frequent feedback on what their peers are experiencing
- Feedback of their own activities

Further research determined that 92% of the students used the VLE and of those 91.5% used the CMA tool.


Internal Limitations
External Constraints
Competences
Acceptance
Conventions
Norms
Stakeholders
Institution
Teachers
Learners
Other
Learning Analytics
Technology
Algorithm
Theories
Other
Instruments
Reflection
Prediction
Open
Protected
Objectives
Data

How students use their data

Early Alert at the University of New England

Complex system with a simplex interface, Leece and Hale in 2009 stipulated that the aim was to develop a dynamic automated process that capture the learning wellbeing of students:

E-motion: students use emoticons and textboxes to express how they Feel each day linked to their subjects.

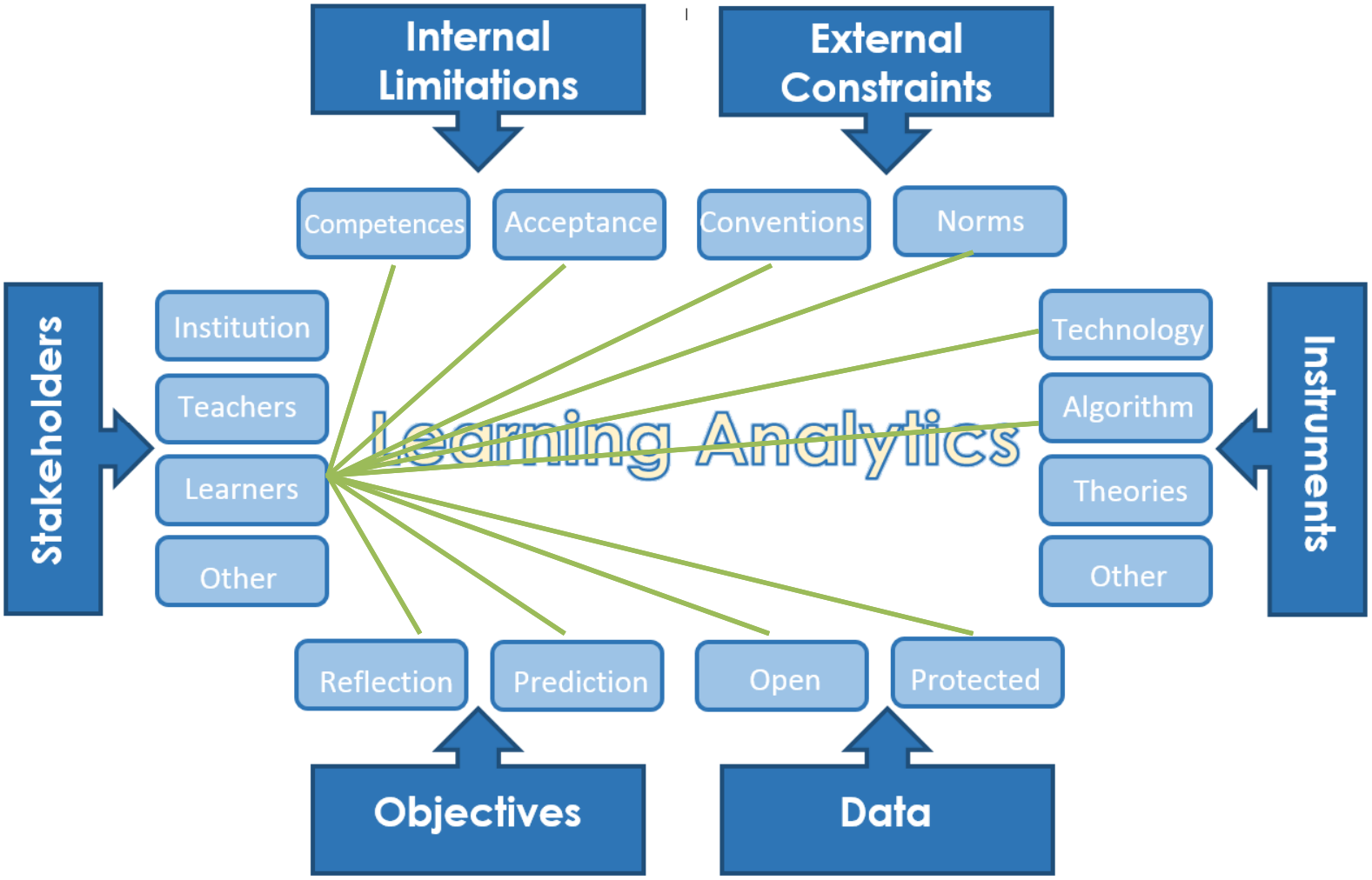
The Vibe: Words entered in the textboxes are aggregated into a word cloud and updated every 10min so the rest of the cohort can see what the other students are thinking and sharing.

How students use their data

Early Alert at the University of New England

Automated Wellness Engine (AWE): Complex system that analysis data from 34 Indicators which contributes to the classification of risk.

The system is powerful in the sense that it analyses data in real time using seven corporate data systems every night. The following day support staff is informed based on the 34 triggers which students need further support.


Internal Limitations
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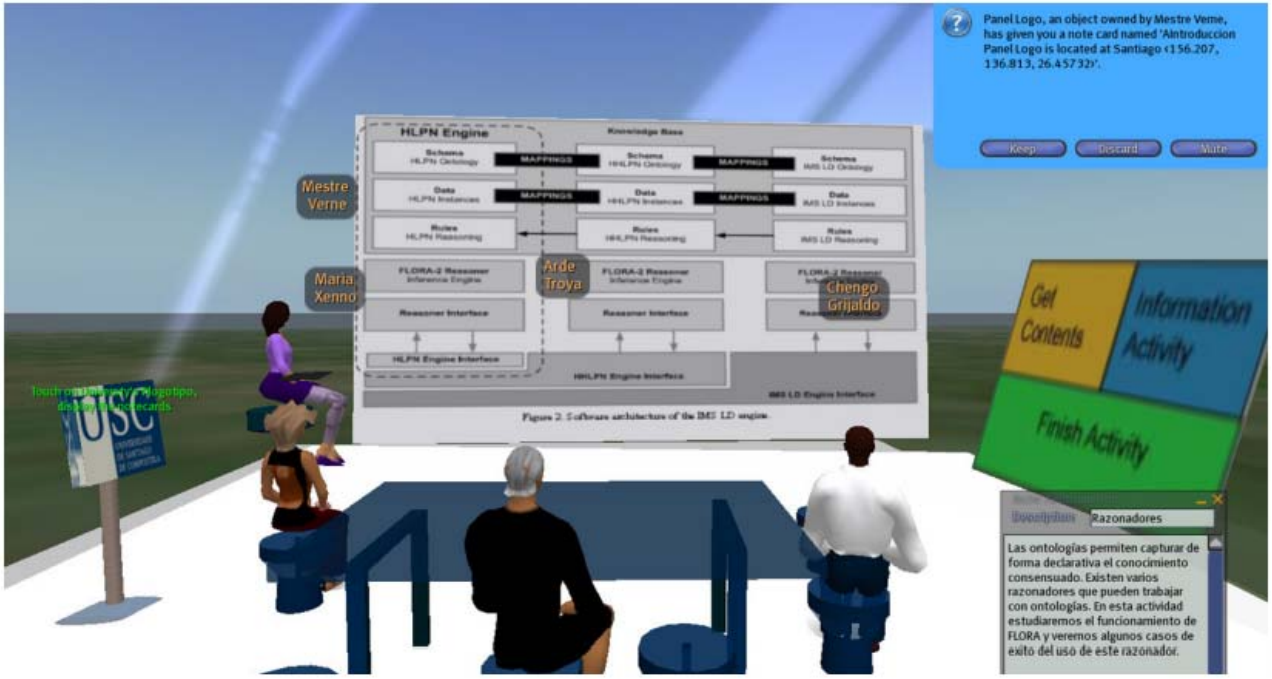
Stakeholders
Institution
Teachers
Learners
Other
Learning Analytics
Technology
Algorithm
Theories
Other
Instruments
Reflection
Prediction
Open
Protected
Objectives
Data

What’s next?

OPENET4VE platform, is a virtual world learning environment

Augmenting the learning experience



International Conference on Virtual and Augmented Reality in Education

Session 2 and 3 handout

3. In your option what data should **NOT** be shared with students?

4. Do you think a learning analytical approach where students are key decision makers would enhance teaching and learning?

☐ No

☐ Yes

Please explain briefly:

Activity

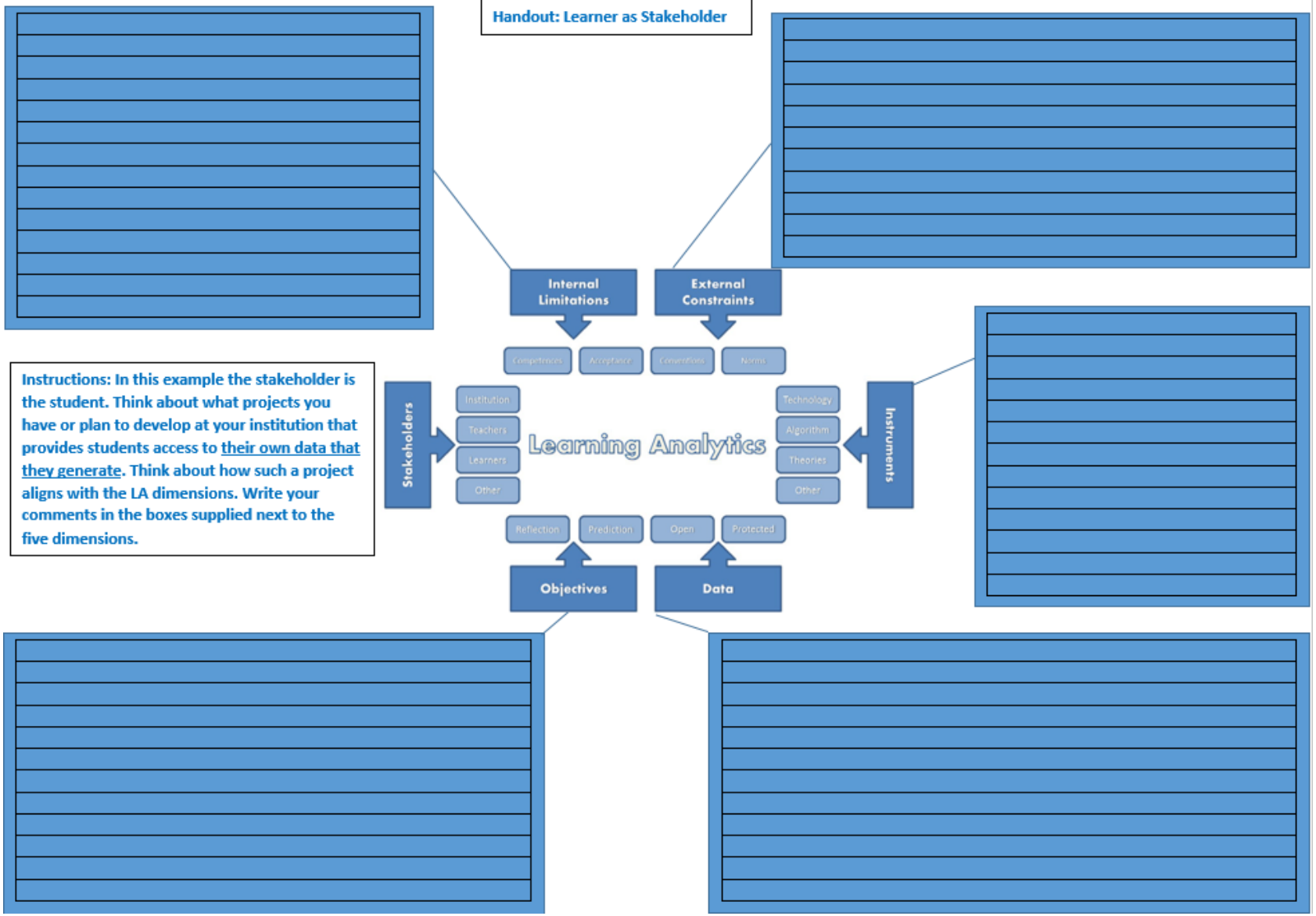
University of the Free State

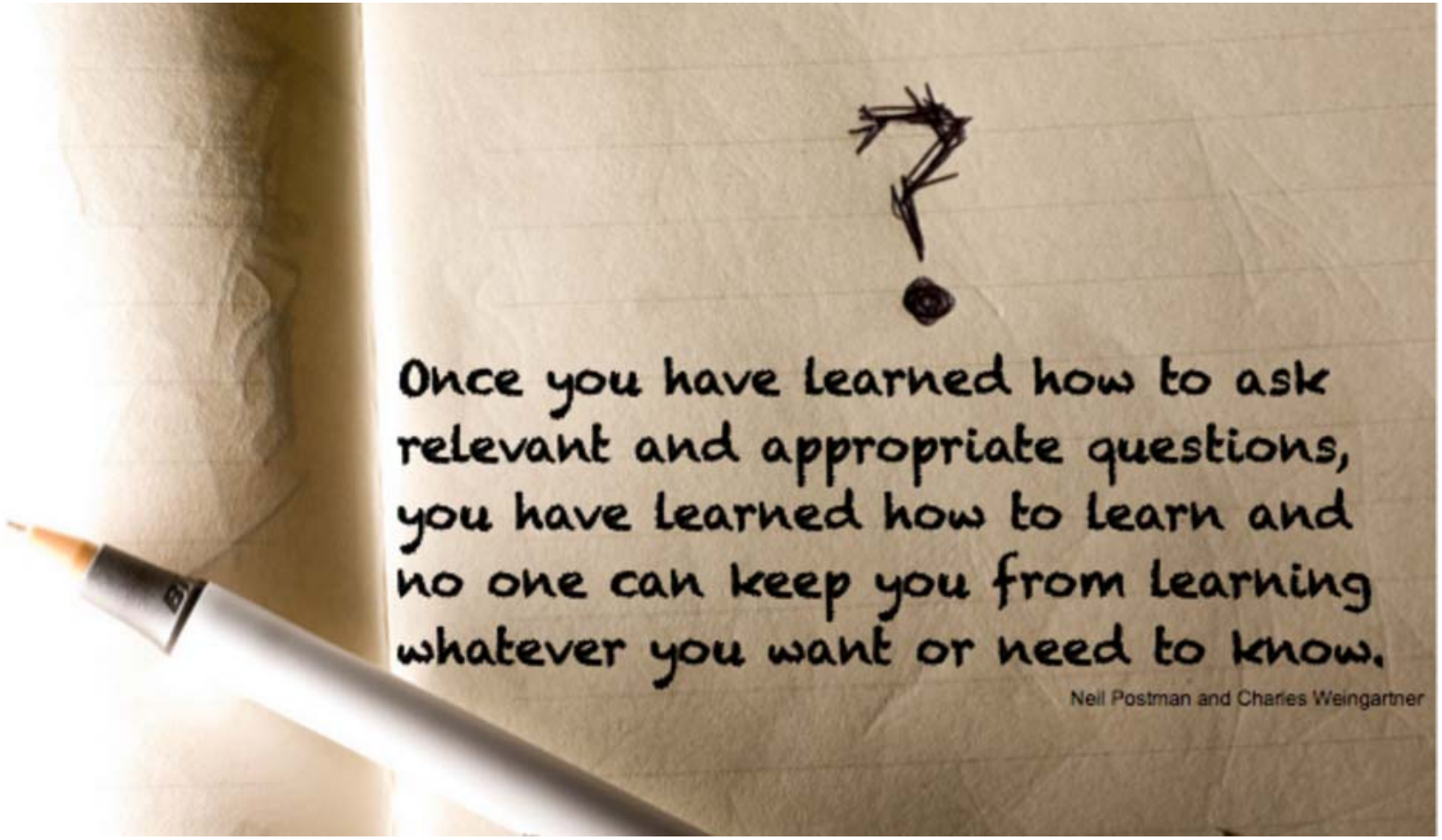
Activity

University of the Free State

Handout: Learner as Stakeholder

Instructions: In this example the stakeholder is the student. Think about what projects you have or plan to develop at your institution that provides students access to their own data that they generate. Think about how such a project aligns with the LA dimensions. Write your comments in the boxes supplied next to the five dimensions.




Once you have learned how to ask relevant and appropriate questions, you have learned how to learn and no one can keep you from learning whatever you want or need to know.
Neil Postman and Charles Weingartner

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Learning Analytics for lecturers

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FREISTATA

Overview

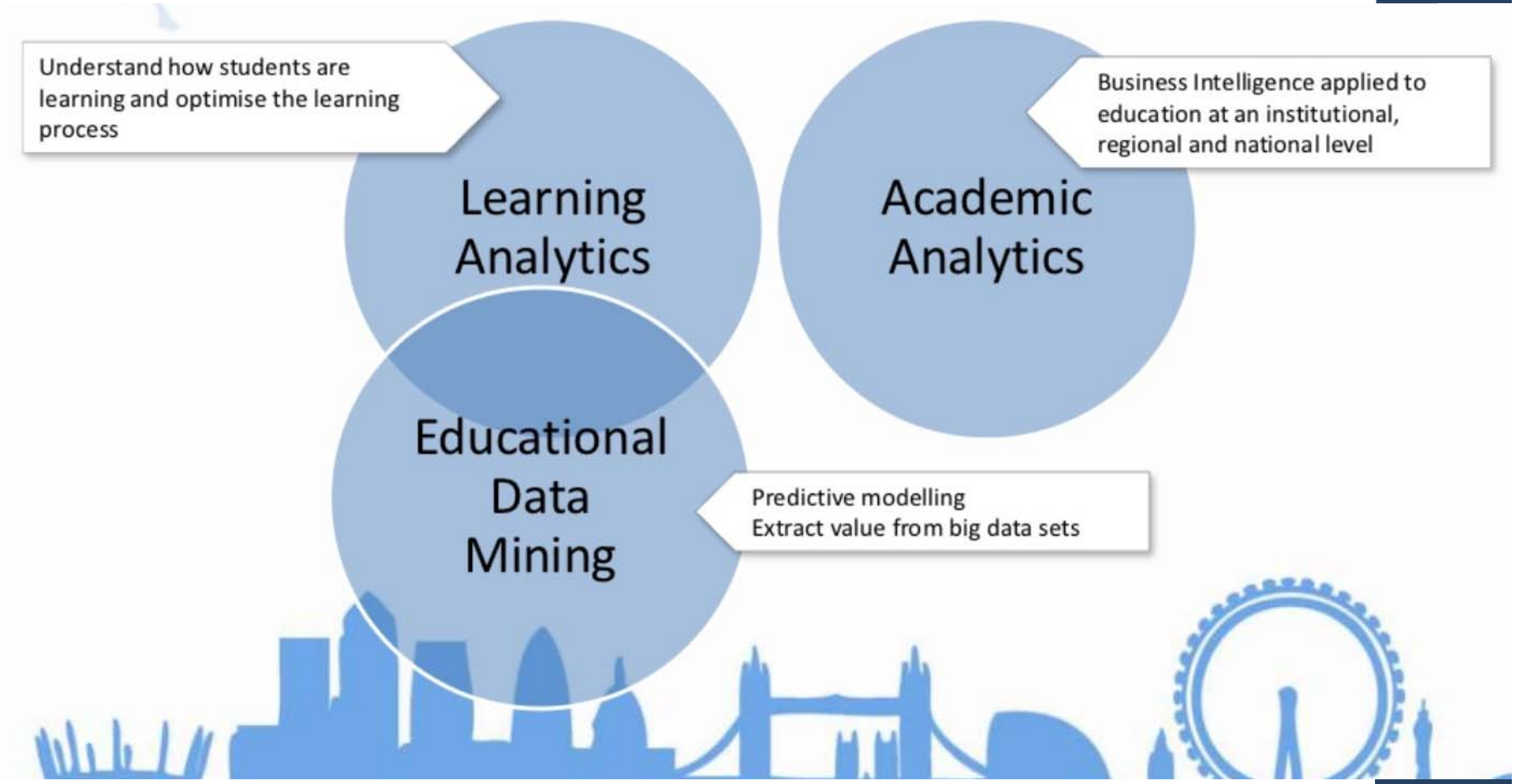
- What do we have?
- What do we do?
- What do we need?

What is Learning Analytics?

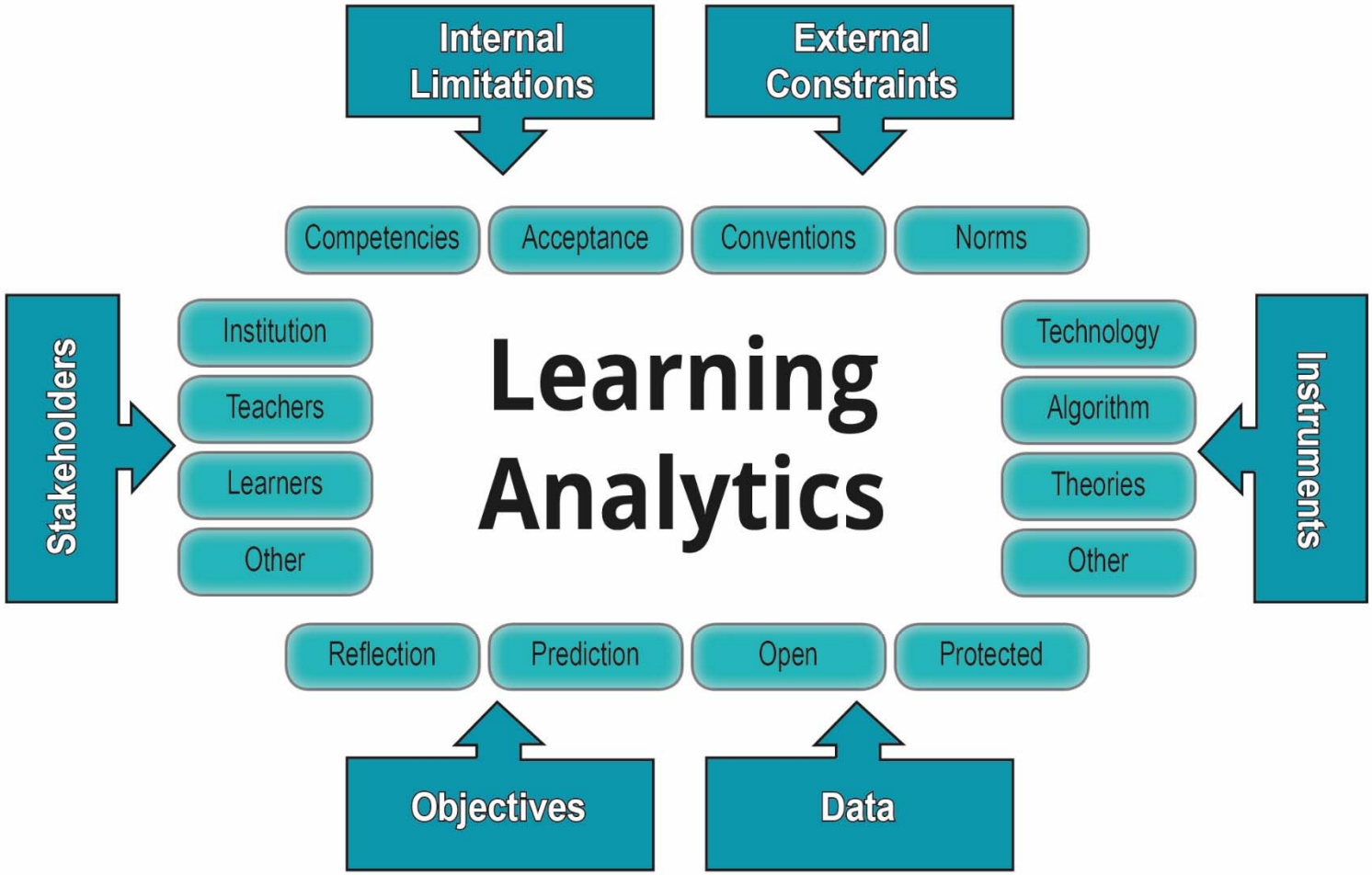
Learning Analytics and Knowledge Conference, 2011

Learning analytics is the **measurement**, **collection**, **analysis** and **reporting of data** about **learners** and their **contexts**, for the purpose of **understanding and optimizing learning** and the **environments** in which it occurs.

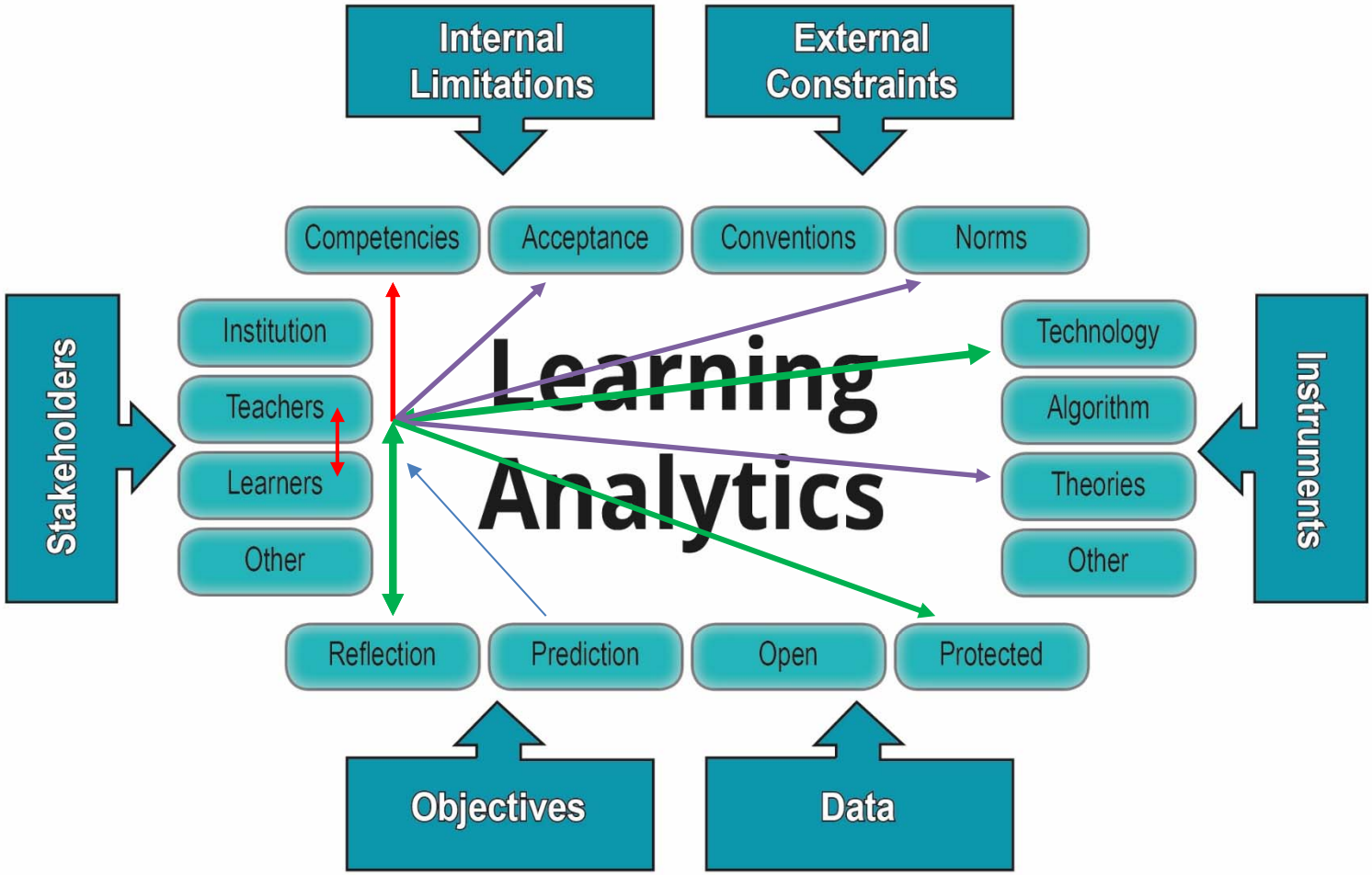
Academic or Learning Analytics



http://www.slideshare.net/ChrisBallard/learning-analytics-improving-student-retention

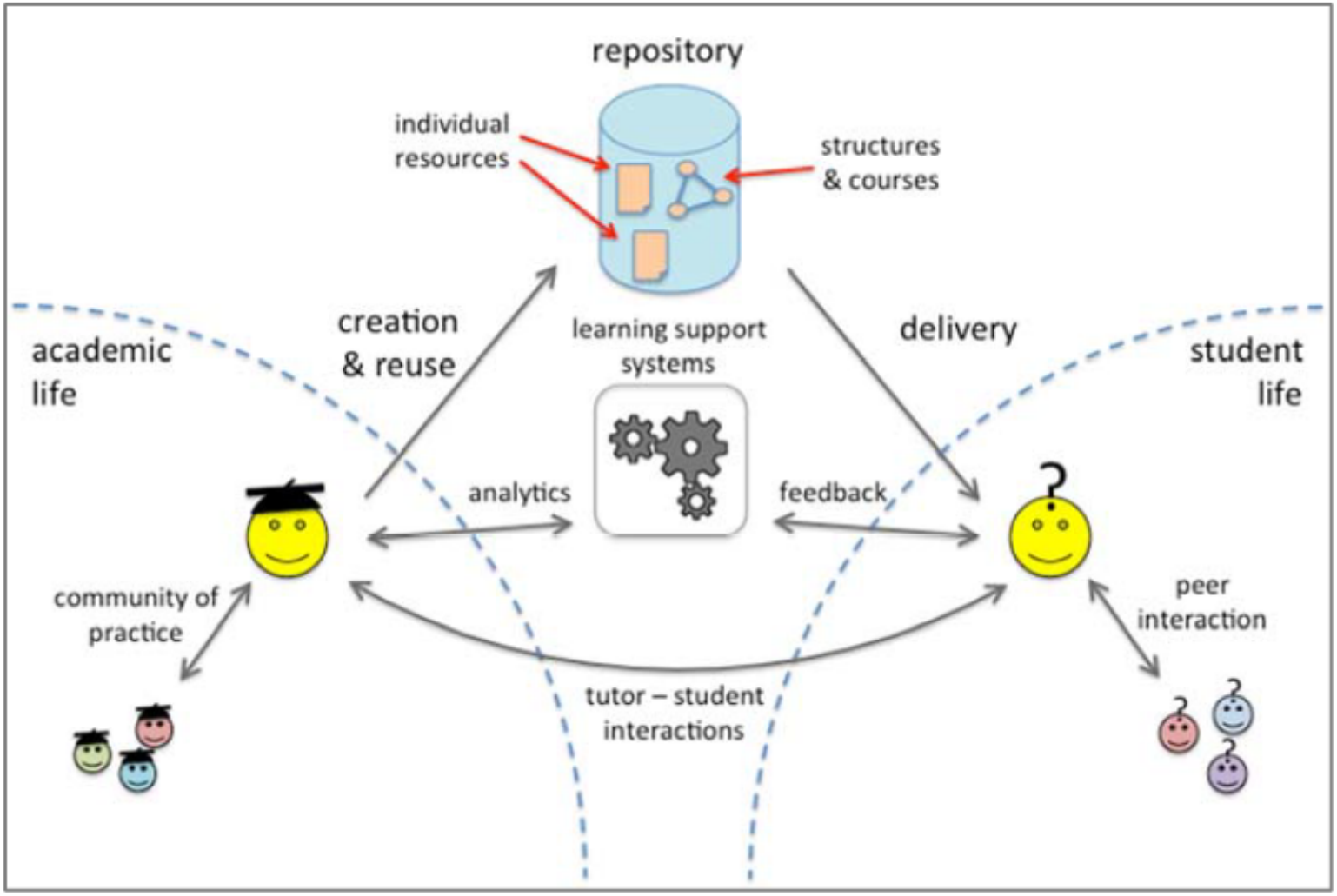


Critical dimensions of LA. (Geller & Drachsler, 2012, pp. 44)



Critical dimensions of LA. (Geller & Drachsler, 2012, pp. 44)

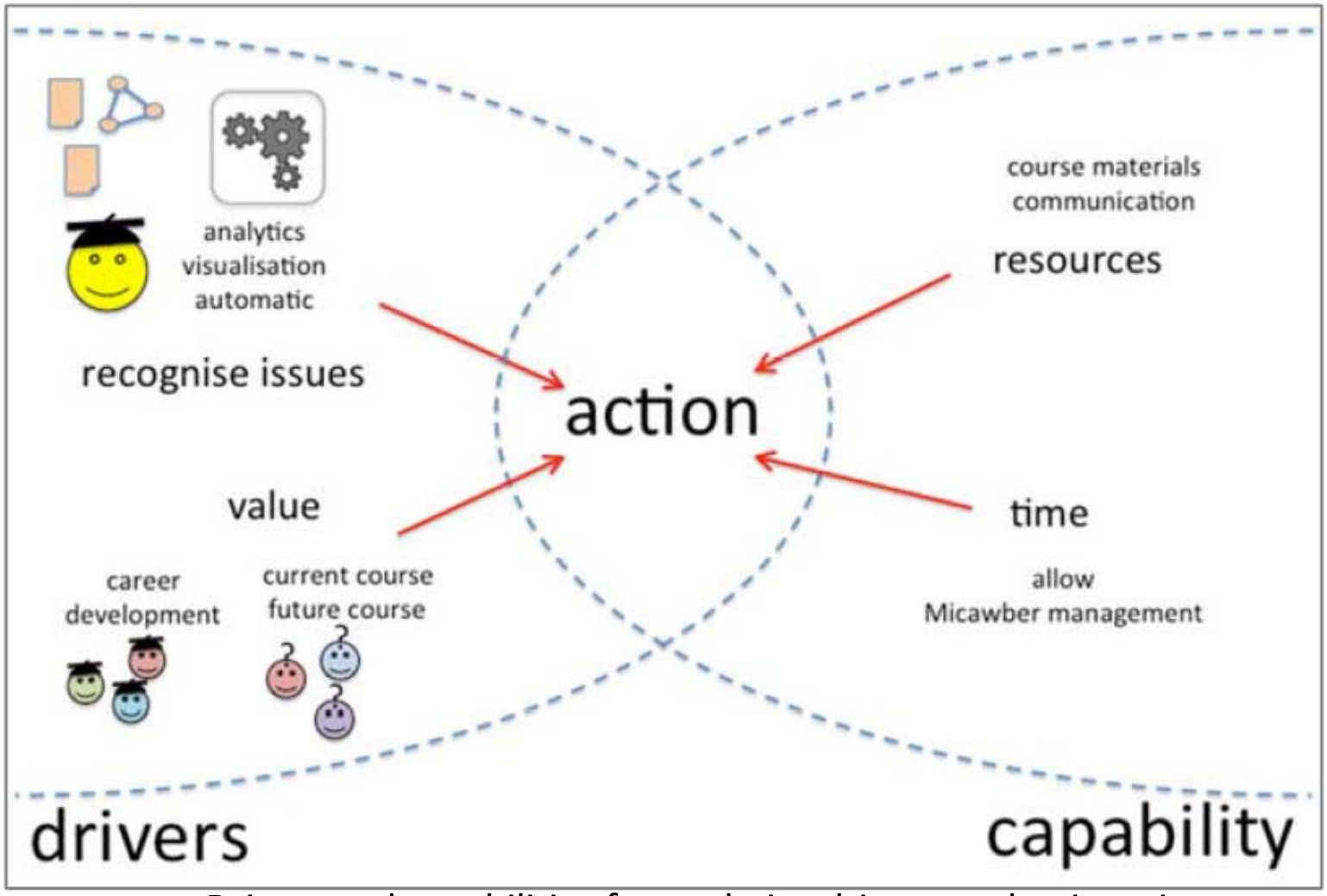
Learning Analytics for Lecturers



Learning resource lifecycle: actors, agents and events

Learning Analytics for the Academic: An Action Perspective, Dix, A. & Leavesley, J. (2014)

Learning Analytics for Lecturers

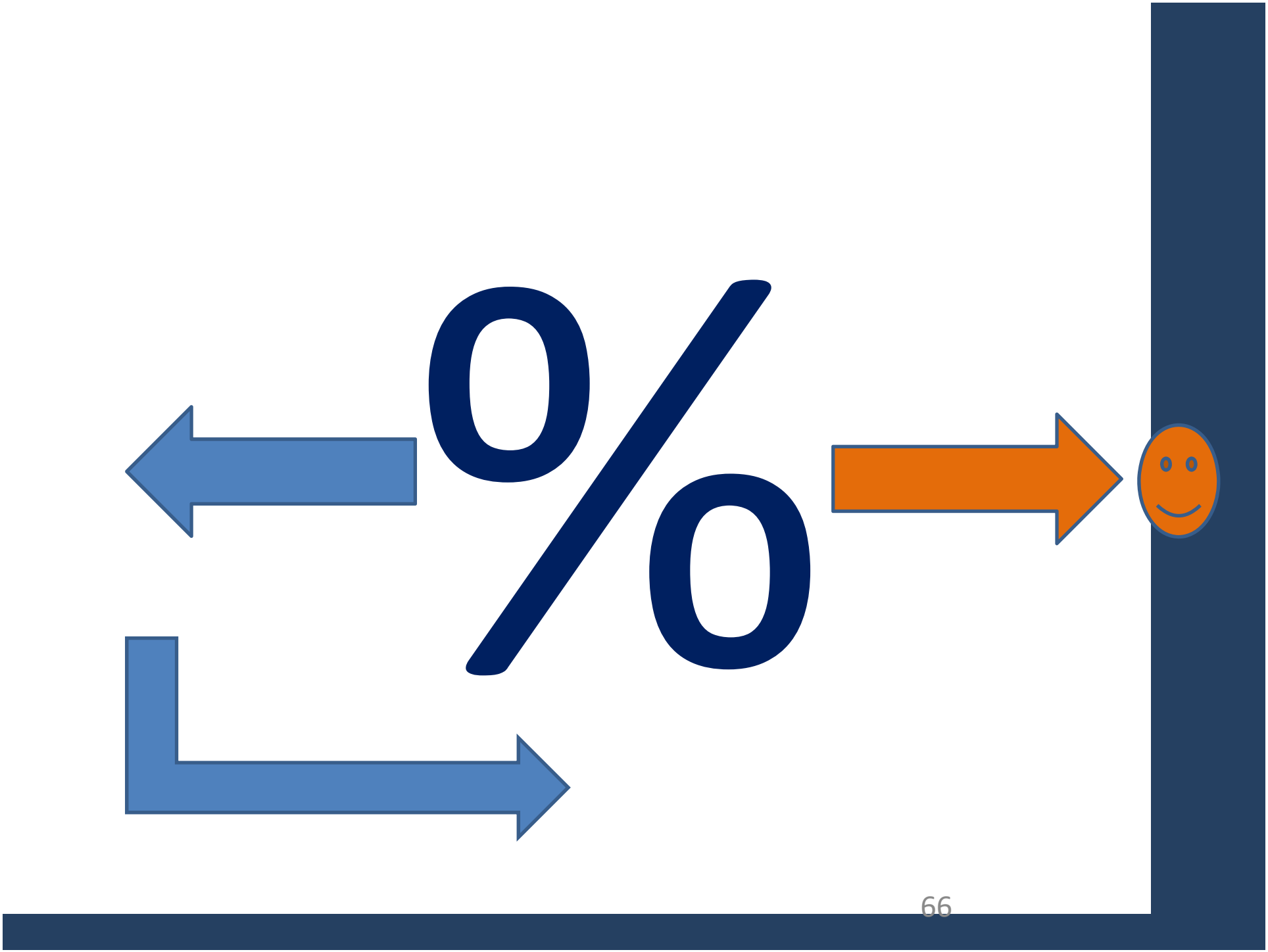


Drivers and capabilities for analytics-driven academic action

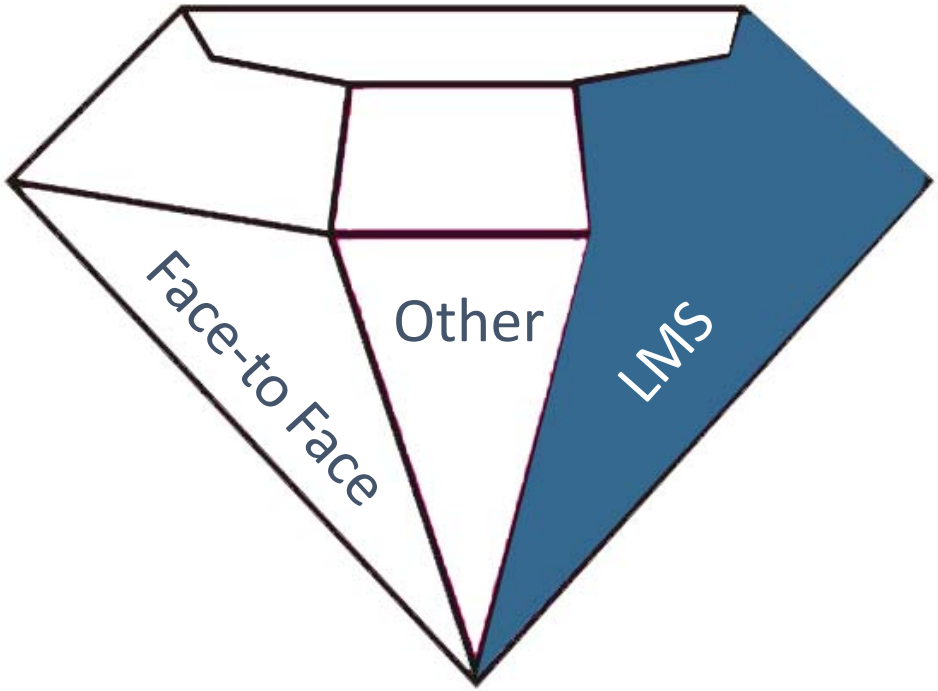
Learning Analytics for the Academic: An Action Perspective, Dix, A. & Leavesley, J. (2014)

WHAT DO WE HAVE?

Learning Management System Data



Blended model: Impact on data value

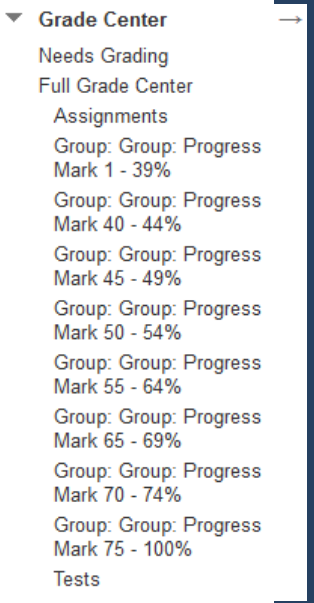


Lecturers capture grades in LMS

Comments	Total	Progress mark
Admission	87	81.00
Admission	66	60.00
Admission	39	31.00
Admission	73	81.00
Admission	60	57.00
Admission	70	72.00
Admission	73	72.00
Admission	93	93.00
Admission	61	60.00
Admission	54	62.00

GRADE DISTRIBUTION

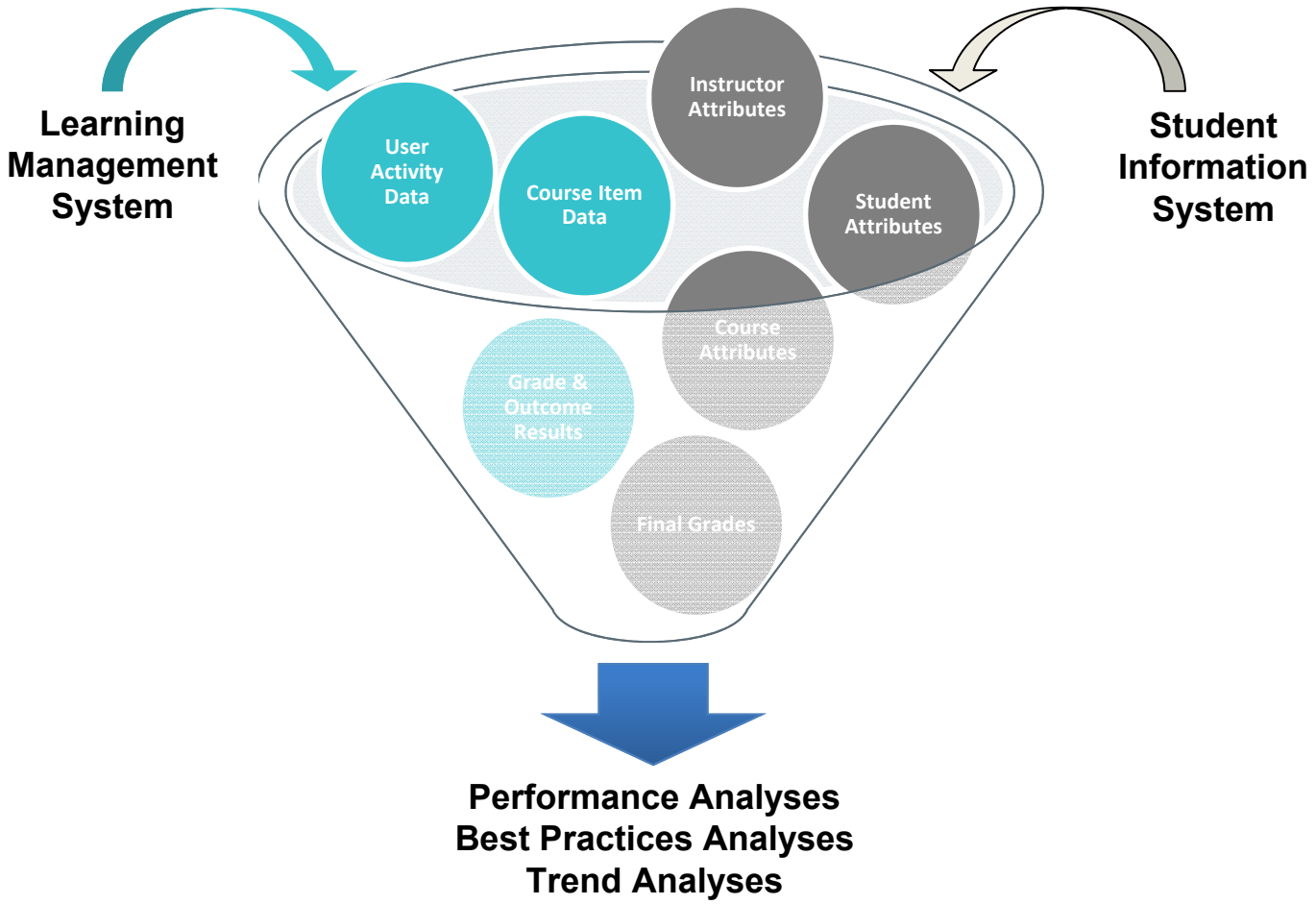
Greater than 100	0
90 - 100	68
80 - 89	298
70 - 79	349
60 - 69	316
50 - 59	233
40 - 49	141
30 - 39	81
20 - 29	34
10 - 19	12
0 - 9	17
Less than 0	0



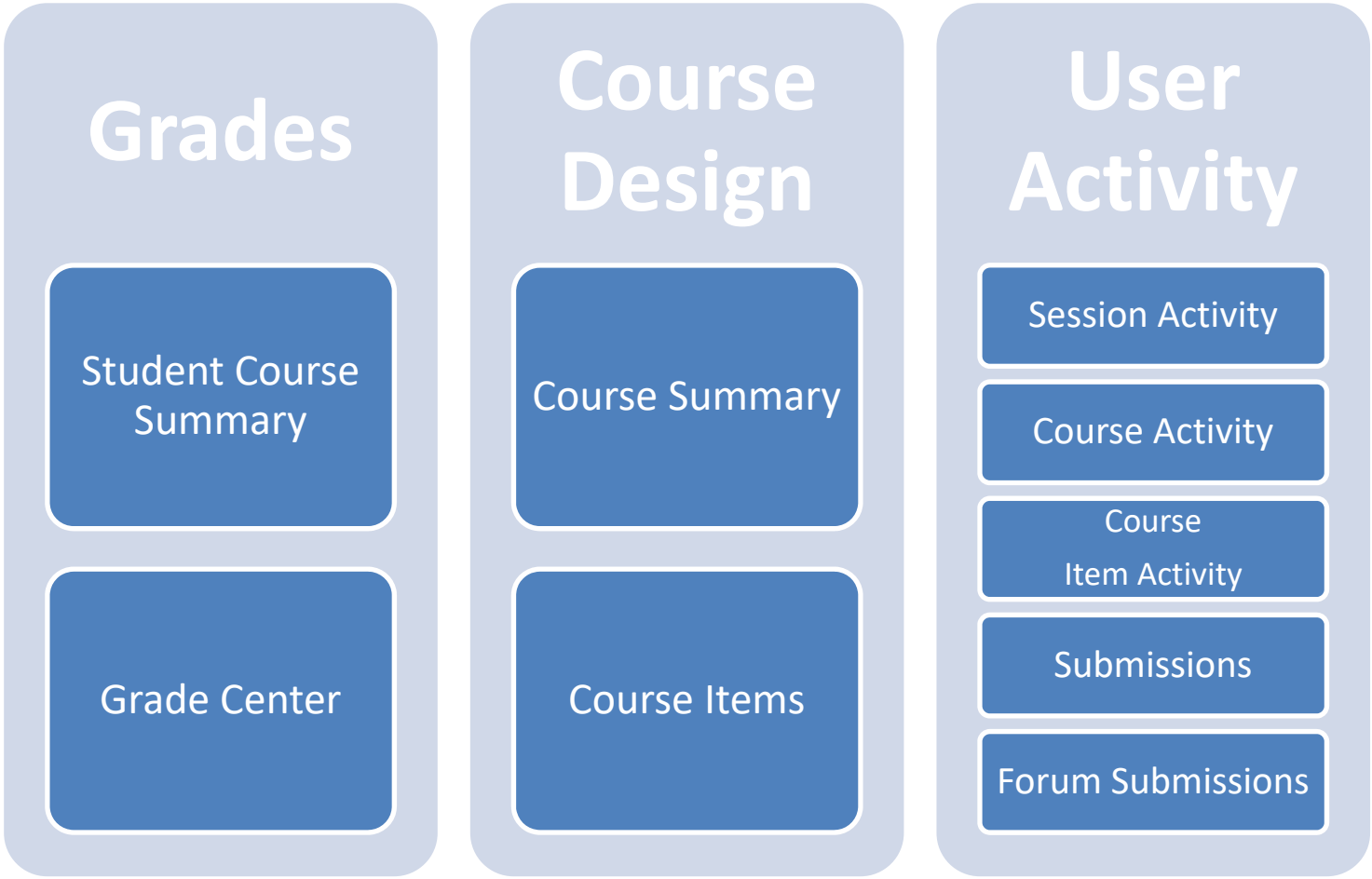
WHAT DO WE DO?

Student progress data

Analytics for Learn



Categories of Analytics for Learn



Lecturers capture grades in LMS

Learn Course At A Glance

Learn Course Information

Instructor:
Course ID:
Academic Semester: 2016 Academic Term
Status: Unavailable
Instruction Method: Full-time Contact
Students Enrolled: 1623
Faculty:
Department:

ITEM COUNT (SAME INSTRUCTION METHOD)

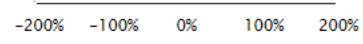
ITEM	COURSE	DEPARTMENT AVG	% DIFFERENCE
Assessment	182	47.0	
Content	223	252.0	
Tool	1,060	160.0	

% OF ITEMS ACCESSED (SAME INSTRUCTION METHOD)

ITEM	COURSE	DEPARTMENT AVG	% DIFFERENCE
Assessment	15.4%	22.2%	
Content	30.6%	30.0%	
Tool	0.4%	1.4%	

ACTIVITY (SAME INSTRUCTION METHOD)

ITEM	COURSE AVG	DEPARTMENT AVG	% DIFFERENCE
Accesses	82	54.9	
Minutes	807	685.3	
Interactions	600	360.6	
Submissions	27	8.1	



Lecturers capture grades in LMS

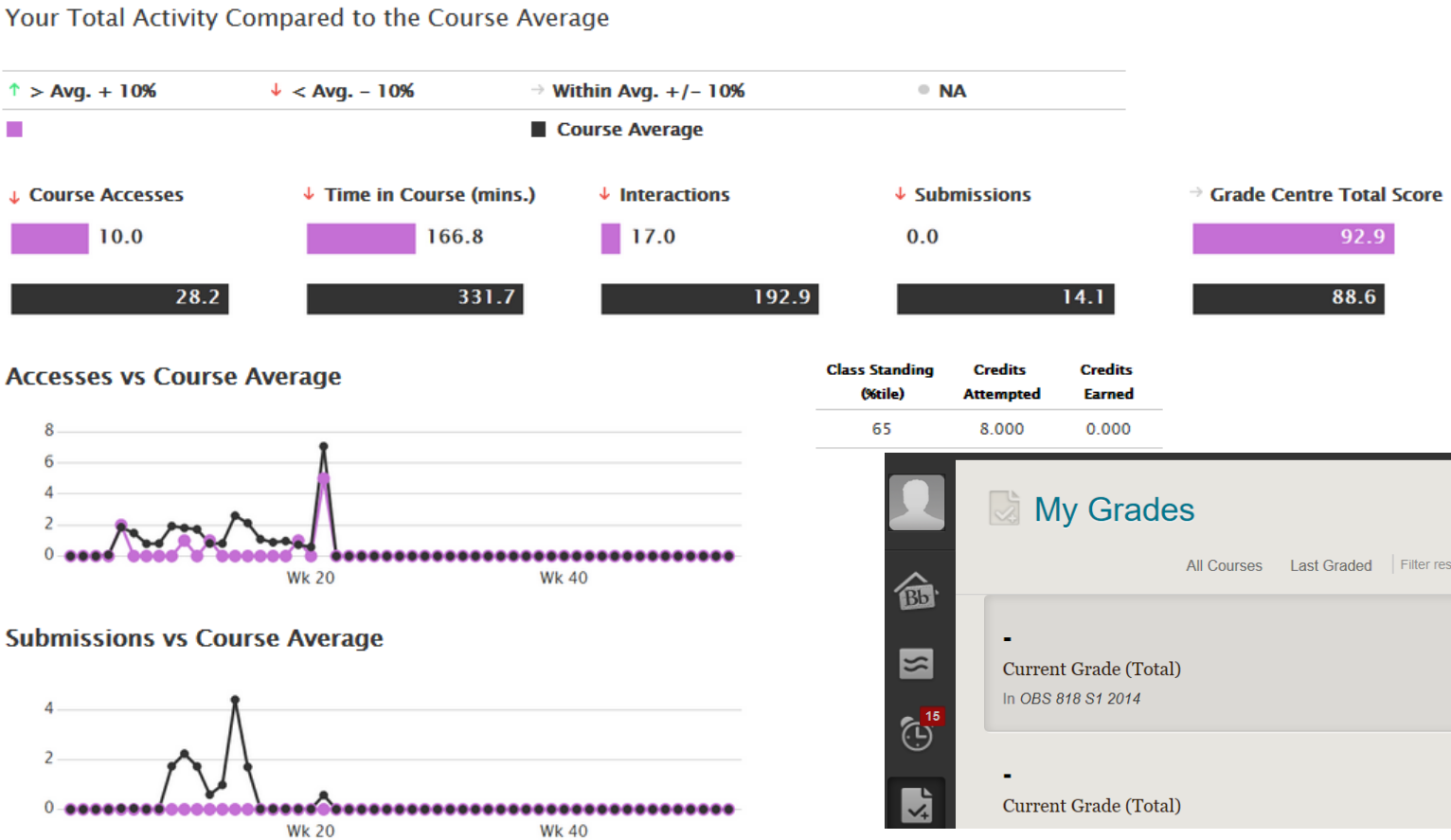
Student Activity Summary (1623 Students)

STUDENT NAME	Academic Plan	Gender	Race	Age	DATE OF LAST ACCESS	DATE OF LAST SUBMISSION	COURSE ACCESSES STUDENT	COURSE ACCESSES AVG	MINUTES STUDENT	MINUTES AVG	INTE STUDENT
[redacted]	No SIS Match	F	African	43	08/07/2016	18/05/2016	49 ↓	82.3	251 ↓	806.9	28
[redacted]	MEd	F	White	39		11/02/2016	0 ↓	82.3	0 ↓	806.9	
[redacted]	BCom Hons	F	African	37	21/06/2016	04/05/2016	111 ↑	82.3	1472 ↑	806.9	70
[redacted]	No SIS Match	F	African	34	13/06/2016	14/04/2016	26 ↓	82.3	322 ↓	806.9	22
[redacted]	Baccalaureus Educationis	F	African	34	27/06/2016	18/05/2016	178 ↑	82.3	2170 ↑	806.9	187
[redacted]	Baccalaureus Commercii	F	Coloured	32	21/07/2016	19/05/2016	172 ↑	82.3	2359 ↑	806.9	167
[redacted]	BCom Hons	F	African	32	28/06/2016	24/05/2016	76 →	82.3	2210 ↑	806.9	100
[redacted]	Baccalaureus Commercii	M	African	31	25/06/2016		15 ↓	82.3	65 ↓	806.9	15
[redacted]	Baccalaureus Commercii	M	African	30	25/06/2016	18/05/2016	44 ↓	82.3	392 ↓	806.9	30
[redacted]	Baccalaureus Educationis	F	African	30	18/06/2016	23/05/2016	58 ↓	82.3	1407 ↑	806.9	77
[redacted]	Baccalaureus Commercii	M	African	29	18/07/2016	03/05/2016	85 →	82.3	1696 ↑	806.9	

Lecturers capture grades in LMS

	COURSE ACCESSES		MINUTES		INTERACTIONS		SUBMISSIONS		GRADE CENTRE SCORE	
DATE OF LAST SUBMISSION	STUDENT	AVG	STUDENT	AVG	STUDENT	AVG	STUDENT	AVG	STUDENT	AVG
18/05/2016	49 ↓	82.3	251 ↓	806.9	288 ↓	599.9	6 ↓	26.6	35.0% ↓	65.5%
11/02/2016	0 ↓	82.3	0 ↓	806.9	0 ↓	599.9	1 ↓	26.6	↓	65.5%
04/05/2016	111 ↑	82.3	1472 ↑	806.9	707 ↑	599.9	22 ↓	26.6	77.0% ↑	65.5%
14/04/2016	26 ↓	82.3	322 ↓	806.9	221 ↓	599.9	4 ↓	26.6	9.0% ↓	65.5%
18/05/2016	178 ↑	82.3	2170 ↑	806.9	1872 ↑	599.9	50 ↑	26.6	93.0% ↑	65.5%
19/05/2016	172 ↑	82.3	2359 ↑	806.9	1678 ↑	599.9	67 ↑	26.6	70.0% →	65.5%
24/05/2016	76 →	82.3	2210 ↑	806.9	1007 ↑	599.9	46 ↑	26.6	42.0% ↓	65.5%
	15 ↓	82.3	65 ↓	806.9	152 ↓	599.9	0 ↓	26.6	6.0% ↓	65.5%
18/05/2016	44 ↓	82.3	392 ↓	806.9	309 ↓	599.9	13 ↓	26.6	61.0% →	65.5%
23/05/2016	58 ↓	82.3	1407 ↑	806.9	775 ↑	599.9	35 ↑	26.6	87.0% ↑	65.5%
03/05/2016	85 →	82.3	1696 ↑	806.9	1086 ↑	599.9	27 →	26.6	↓	65.5%

Student report in LMS



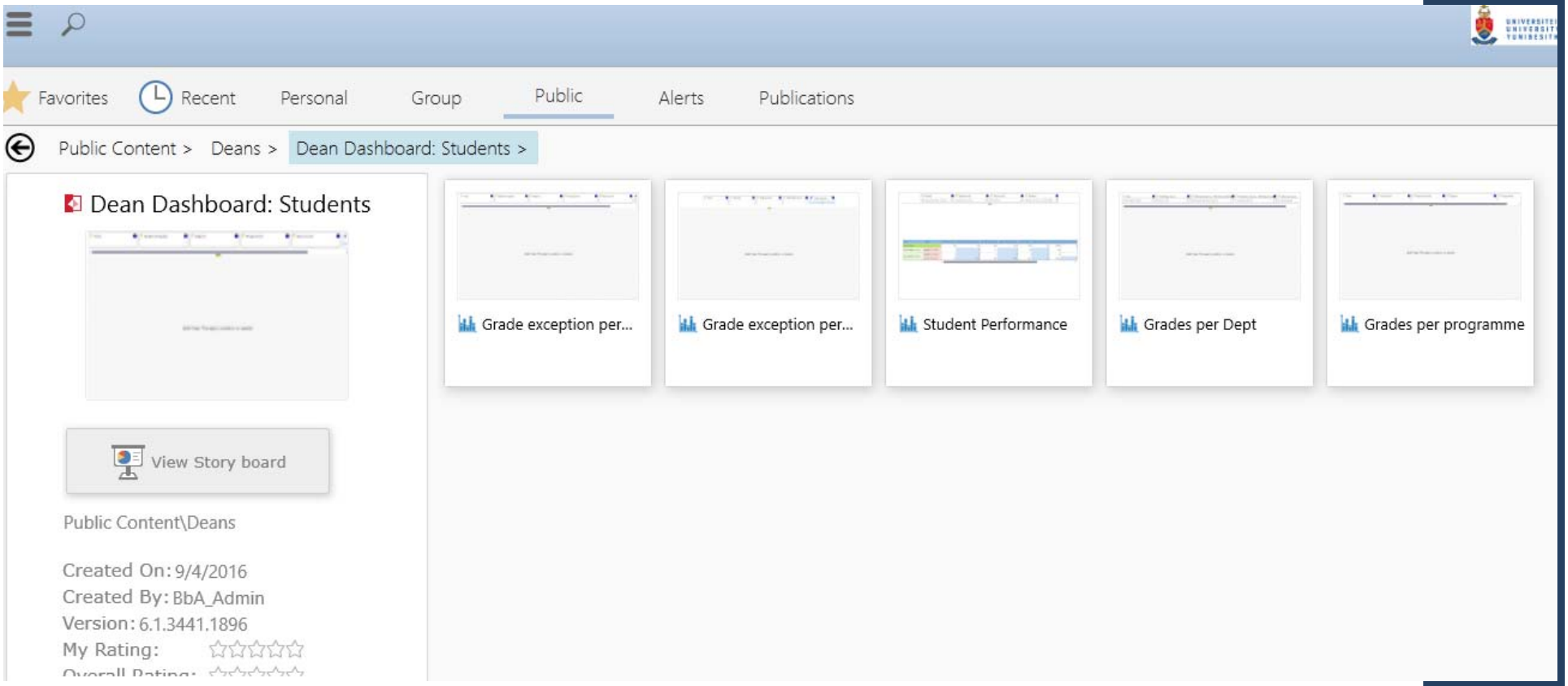
MONITOR PROGRESS

Dashboard: Student grades

Real-time access to grades

- Access Analytics for learn dashboards
  - Student progress
  - Module design
  - Overview of LMS use per faculty and department

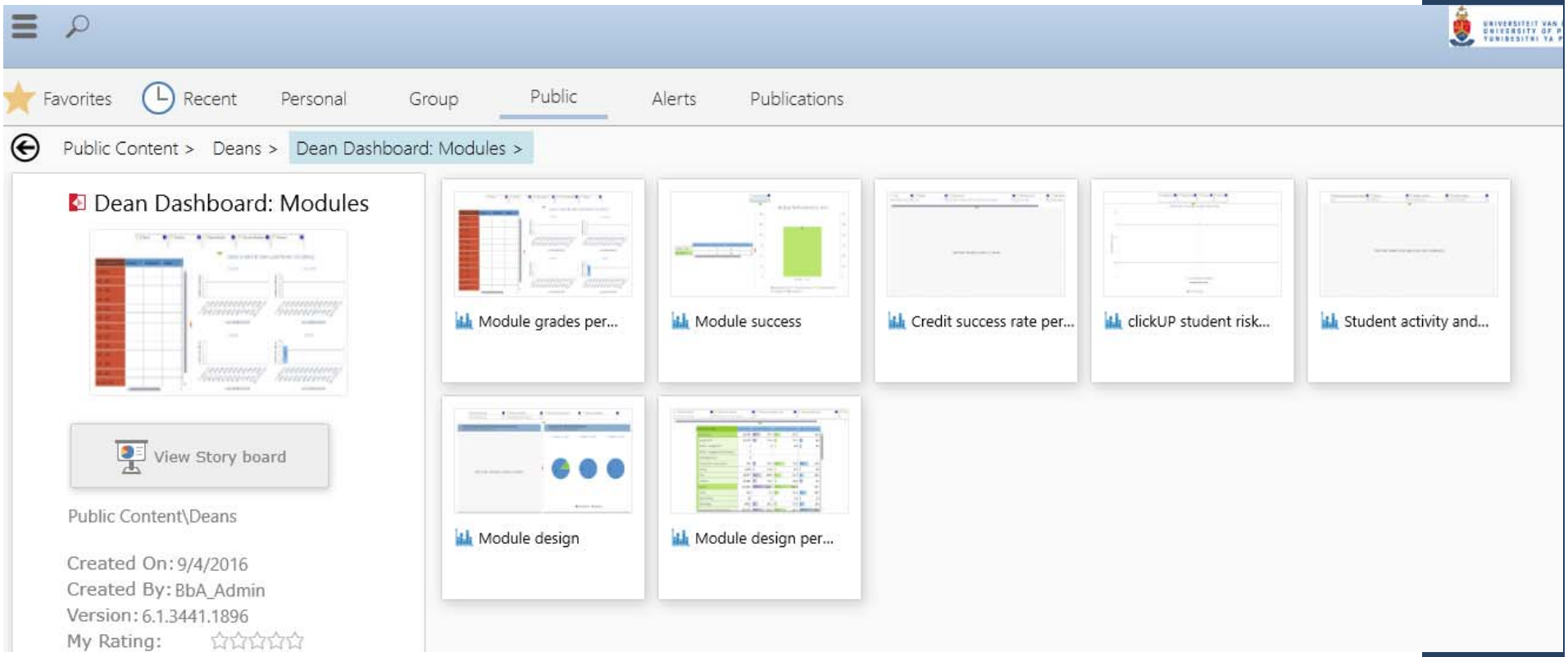
Dashboard: Student progress



MONITOR PROGRESS

Dashboard: Module success

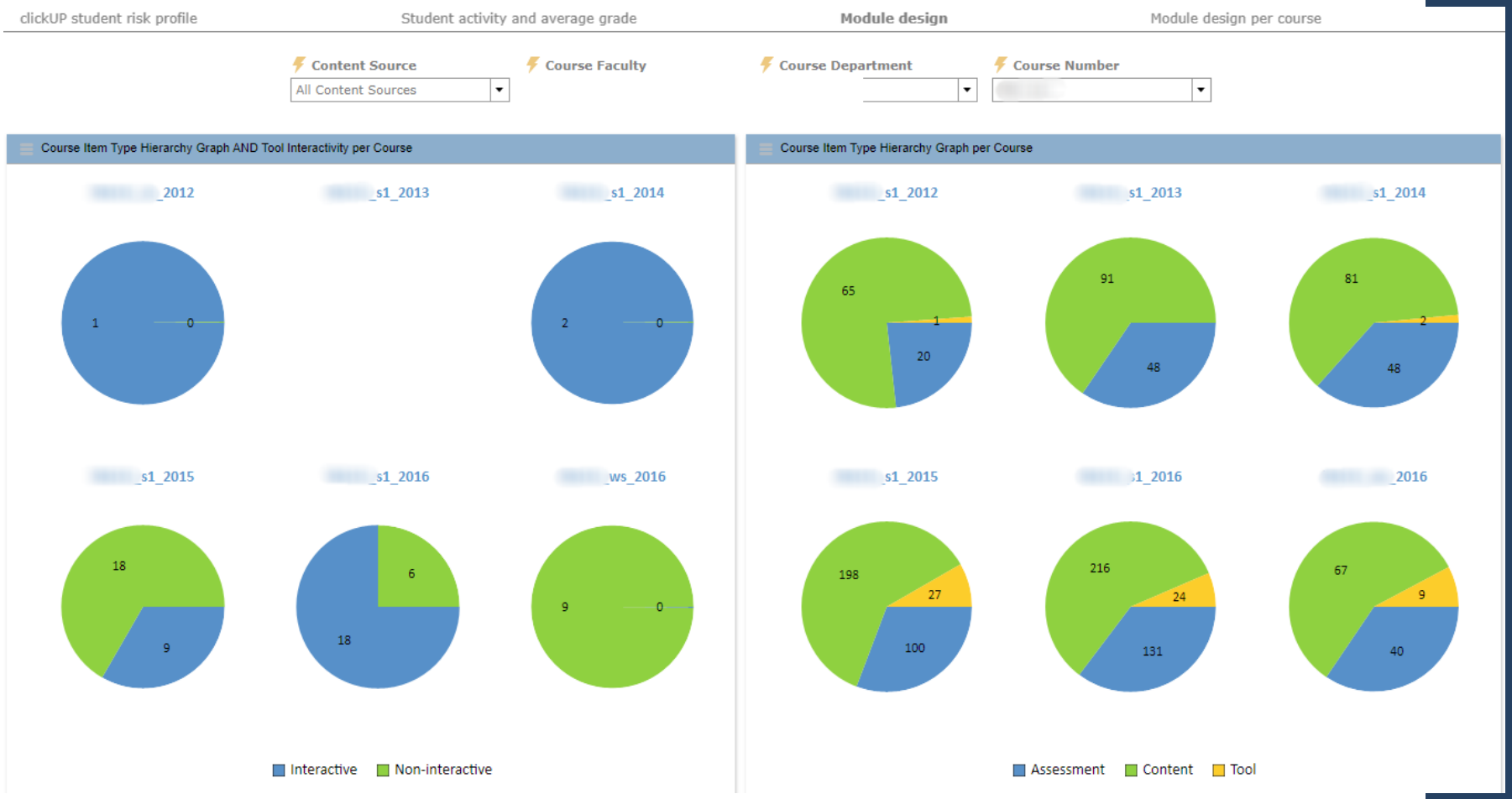
Dashboard: Module success



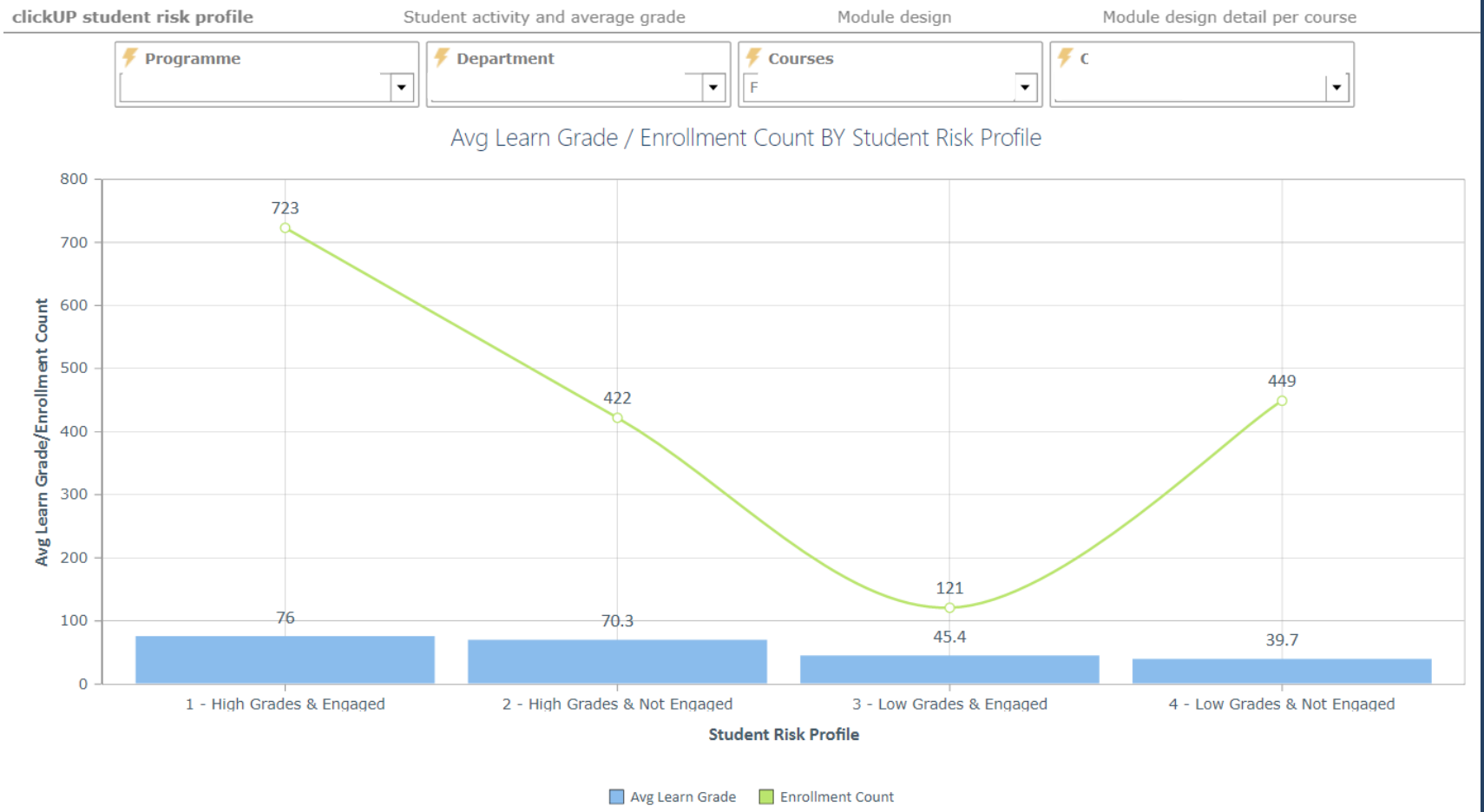
MONITOR PROGRESS

Dashboard: Course design

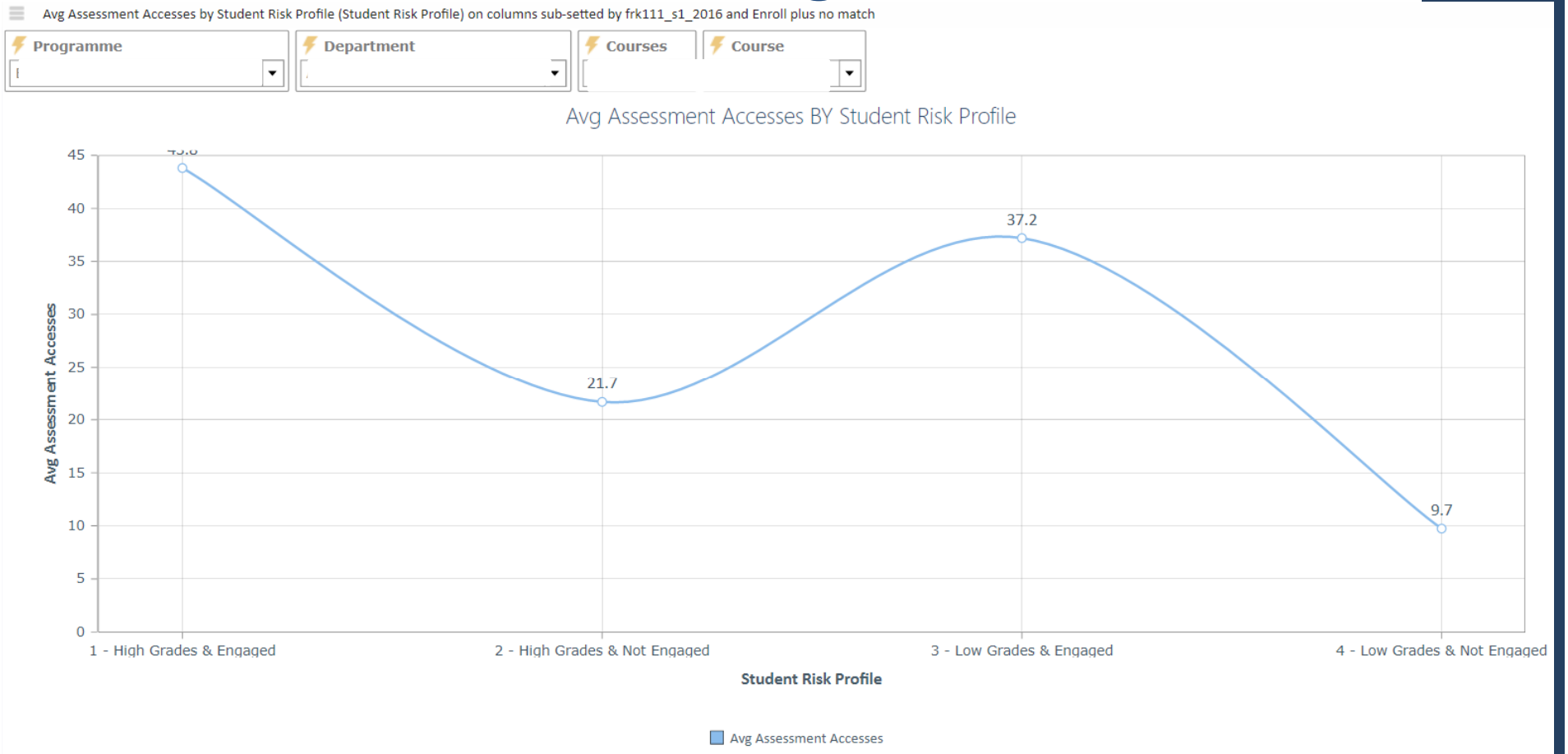
Course design



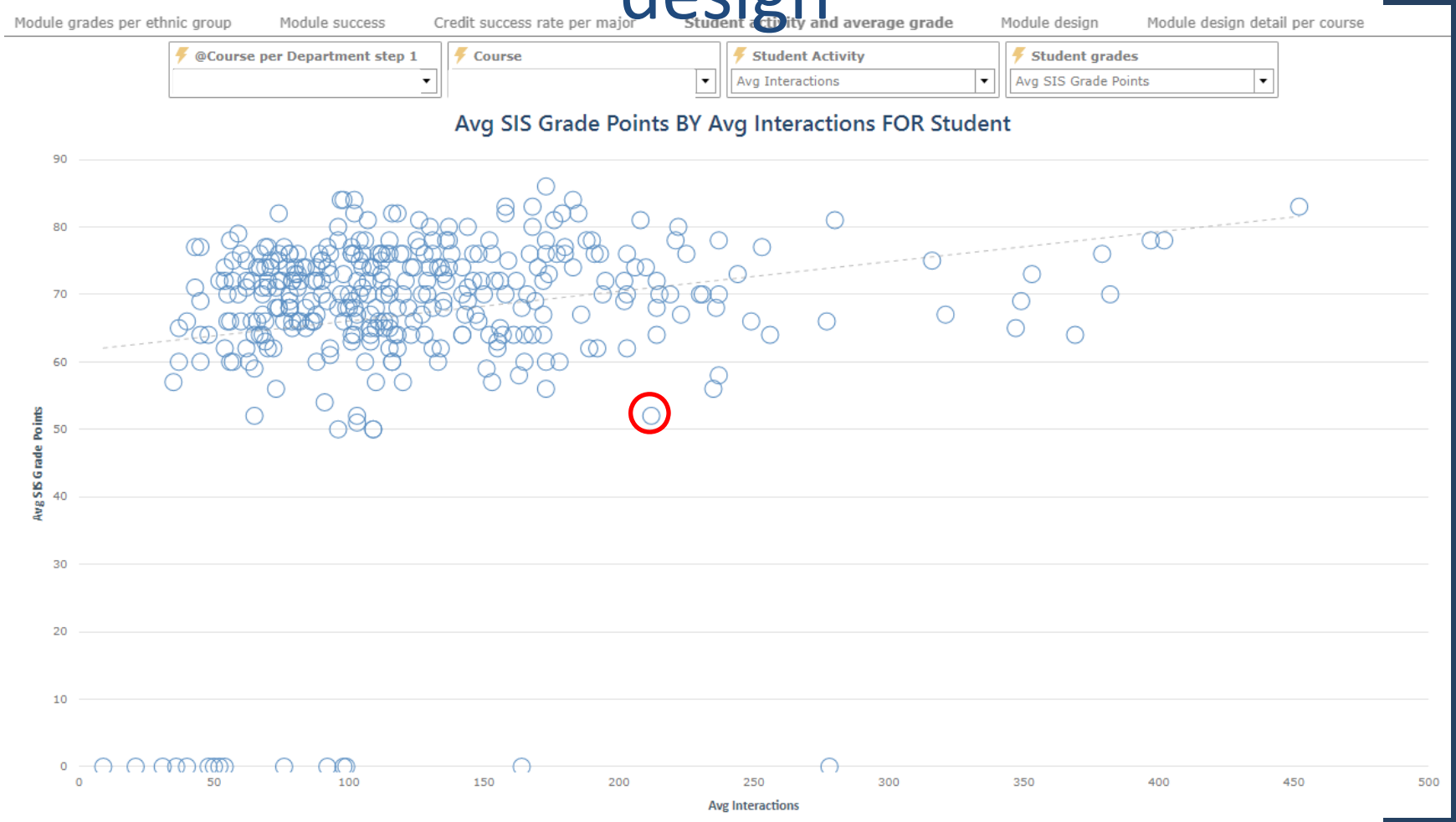
Grades, student engagement and course design



Grades, student engagement and course design



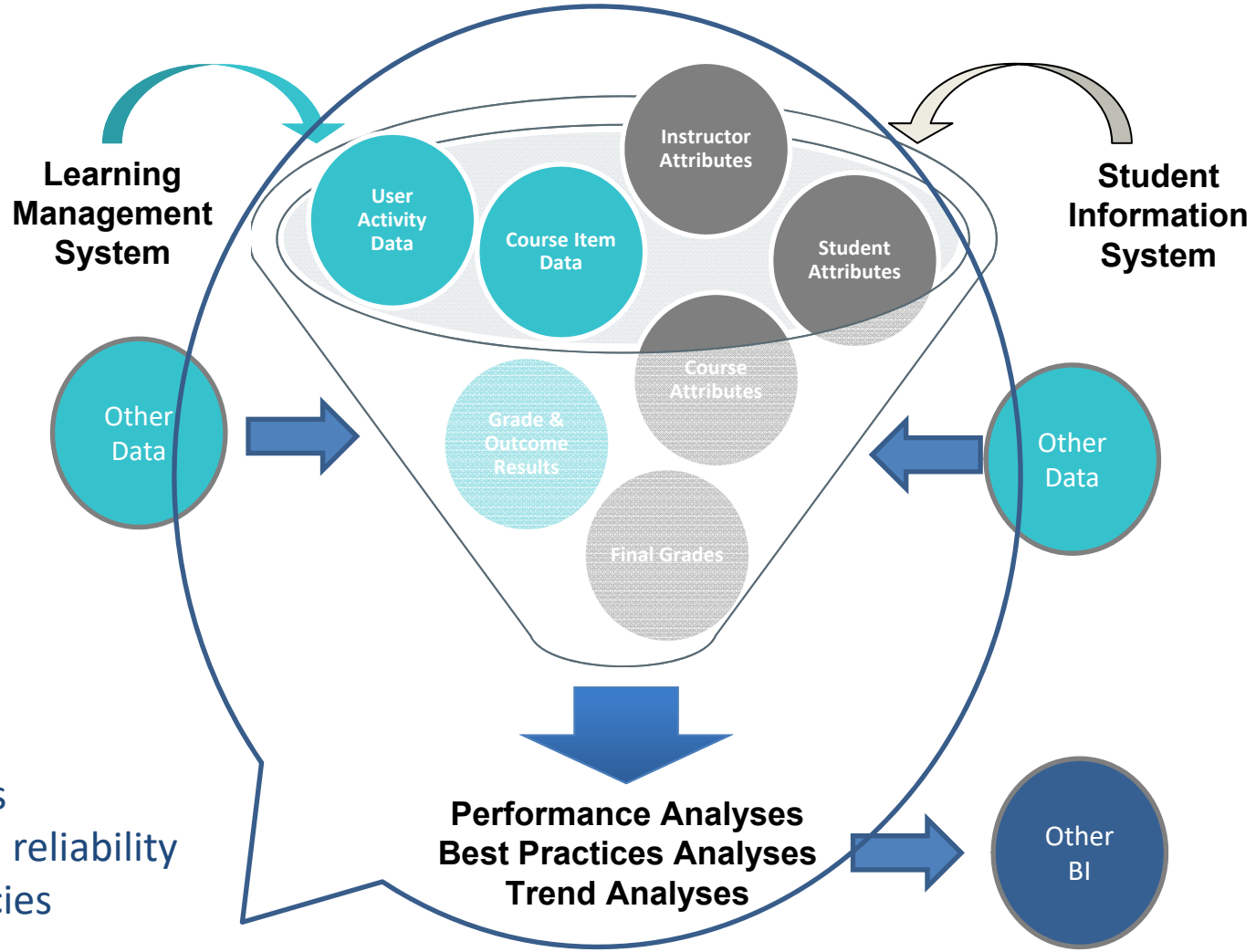
Grades, student engagement and course design



WHAT DO WE NEED?

Data Integration

Analytics for Learn



- Skills
- Data reliability
- Policies

Analytics for Learn

				Avg SIS Grade Points	Avg Learn Grade
[redacted]	[redacted]@tuks.co.za	PUM 120	1 - High Grades & Engaged		30.0
		PAD 122	1 - High Grades & Engaged		64.0
		PUT 120	1 - High Grades & Engaged		66.0
		PUF 110	1 - High Grades & Engaged	66.0	58.0
		AIM 111	2 - High Grades & Not Engaged	78.0	90.6
[redacted]	[redacted]@GMAIL.COM	PUM 120	1 - High Grades & Engaged		30.0
		PAD 122	3 - Low Grades & Engaged		52.0
		PUT 120	3 - Low Grades & Engaged		44.0
		PUF 110	1 - High Grades & Engaged	61.0	60.0
[redacted]	[redacted]@tuks.co.za	PUM 120	1 - High Grades & Engaged		21.7
		PAD 122	2 - High Grades & Not Engaged		72.0
		PUT 120	1 - High Grades & Engaged		56.0
		PUF 110	2 - High Grades & Not Engaged	61.0	62.0
		PUM 120	2 - High Grades & Not Engaged		21.7
		PAD 122	3 - Low Grades & Engaged		46.0

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Learning Analytics for institutional management

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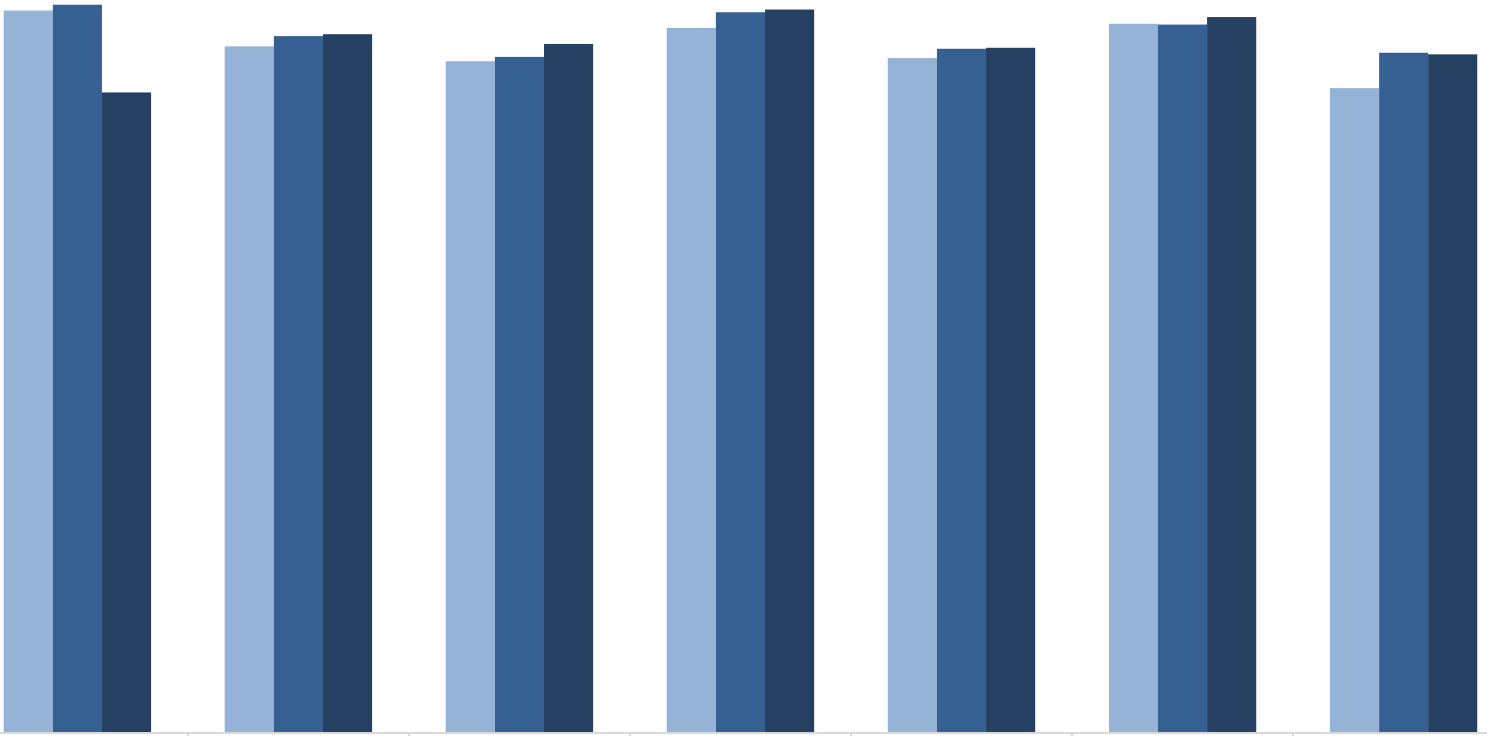
Analytics for institutional management

- Examples of indicators prepared by Departments for Institutional Planning:
  - Number of entering students per faculty and their demographic data
  - Examination statistics
  - Success rates
  - Graduation rates
  - Retention rates

UG Degree Credit Success Rate for contact mode students

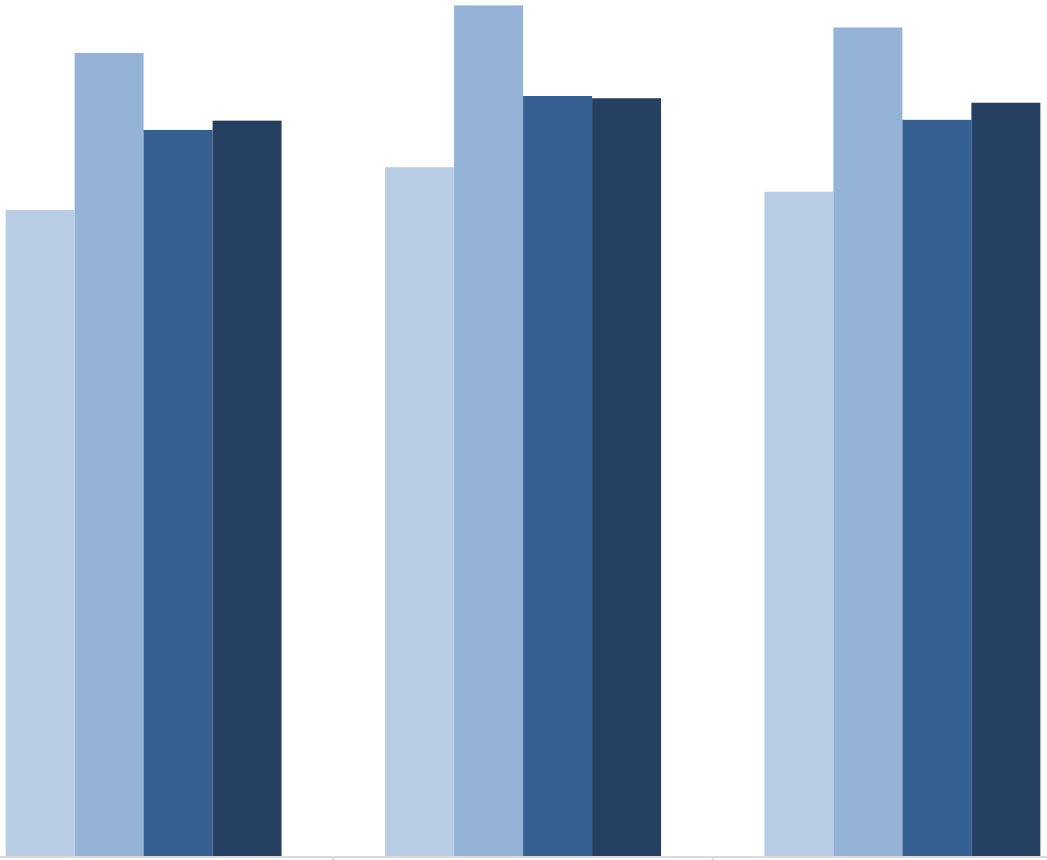


	University of Cape Town	University of Johannesburg	University of KwaZulu-Natal	University of Limpopo	University of Pretoria	University of Stellenbosch	University of the Free State
2013	88%	83%	82%	86%	82%	86%	78%
2014	88%	85%	82%	87%	83%	86%	83%
2015	78%	85%	84%	88%	83%	87%	82%

LA for institutional management

- How can institutional management evaluate their faculties performance?

Undergraduate degree credit success rate by CESM



	2013	2014	2015
Business Management	66,7%	71,1%	68,6%
Education	82,9%	87,8%	85,5%
Humanities	74,9%	78,5%	76,0%
Science Engineering Technology	75,9%	78,2%	77,8%

Graduation rate of faculties - first time entering, 3 year degree (2010 cohort)

FACULTIES	Baseline	n (2012 Grad)	n+1 (2013 Grad)	n+2 (2014 Grad)	Total Grad	Dropout	Enrolled (still busy)
	1035	35%	14%	4%	53%	43%	5%
	1007	14%	19%	8%	42%	49%	9%
	1884	38%	24%	9%	71%	20%	9%
	164	52%	13%	4%	69%	30%	1%
	622	24%	22%	10%	56%	33%	11%

LA for institutional management

- Who is it that we should admit?
- And once we admit students to our campus, are we treating those students equitably?

Who should be admitted?

	Final Mark	Mathematics	English	Sciences		Percentile
	70	91	85	91	Percentile of Final Mark	90
	65	87	82	87		80
	61	85	79	84		70
	58	82	77	81		60
	56	79	75	78		50
	54	76	72	75		40
	50	73	70	72		30
	47	69	67	68		20
	41	63	63	60		10

LA for institutional management

- What do the programs which we fund actually do?
- We run a lot of different programs on our campuses that are aimed at improving the student experience.
- We have many different student support programs like:
  - Living learning communities
  - Mentoring
  - Tutoring
  - Orientation
- Understand the impact that each program has on the students who participate - all different kinds of students

Cross-tabulation of academic risk cluster and participation in FSA session/s

Academic cluster		Number of FSA Sessions			Total
		Zero session	One session	Two > sessions	
At risk	Count	28	27	12	67
	% within FSA sessions	**46.7%**	**32.1%**	**21.4%**	33.5%
Borderline	Count	24	29	22	75
	% within FSA sessions	**40.0%**	**34.5%**	**39.3%**	37.5%
Not at risk	Count	8	28	22	58
	% within FSA sessions	**13.3%**	**33.3%**	**39.3%**	29.0%
TOTAL	Count	60	84	56	200
	% within FSA sessions	100%	100%	100%	100%

Handout: Institution as Stakeholder

Instructions: In this example the stakeholder is the institution. Incorporate the information used at the student and lecturer level (previous activities) to inform learning analytics at the institutional management level. Think about the projects that provides the institutional decision makers with data that they need in order to achieve the strategic goals. Think about how such a project aligns with the LA dimensions. Write your comments in the boxes supplied next to the five dimensions.

Activity

- Incorporate the information used at the student and lecturer level (previous activities) to inform learning analytics at the institutional management level.
- Provide actionable information to shift the needle on the strategic goals created in session 1.
- Use the G&D Framework as guide, you could also develop a SA version as adaptation.

Additional questions

- What are the variables that drive LA outcomes across the three levels? (transformation, student success rates and graduation out-put – in minimum time);
- How do the dimensions of the G&D framework impact LA at the various levels? (Stakeholders, Data, Ethics, Training, Analysis, etc.);
- How should the sector position itself strategically to facilitate institutions to practically implement LA at student, lecturer and management levels and do so in a coordinated fashion?

Activity (20 min)
University of Pretoria

Additional questions

- What question(s) are you trying to answer? What problems are you trying to solve?
- What variables are suggested in the literature? Institutional knowledge? Other institutions?
- How do you measure the impact of the institutional programs?
- What process and procedures will need to change?

Activity (20 min)
University of Pretoria

Session 5 handout

1. Are you aware of any Learning Analytical driven projects where the Institution is the main stakeholder?

☐ No

☐ Yes

2. Does your institution measure the impact of student support programs on a regular basis (e.g. annually)?

☐ No

☐ Yes

Please explain briefly:

_____

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Closing the loop

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Activity

University of Pretoria

No to secret sauce analytics

Do you have “magic number” mentality

Are you using a black box of formulas they can neither be shared nor explained?

Have you recognised and acknowledge you are turning governance over partially to a formula (but this formulas is not shielded from view)

Are these formulas part of a library of open formulae that others can both test, review and comment on?

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Closure

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