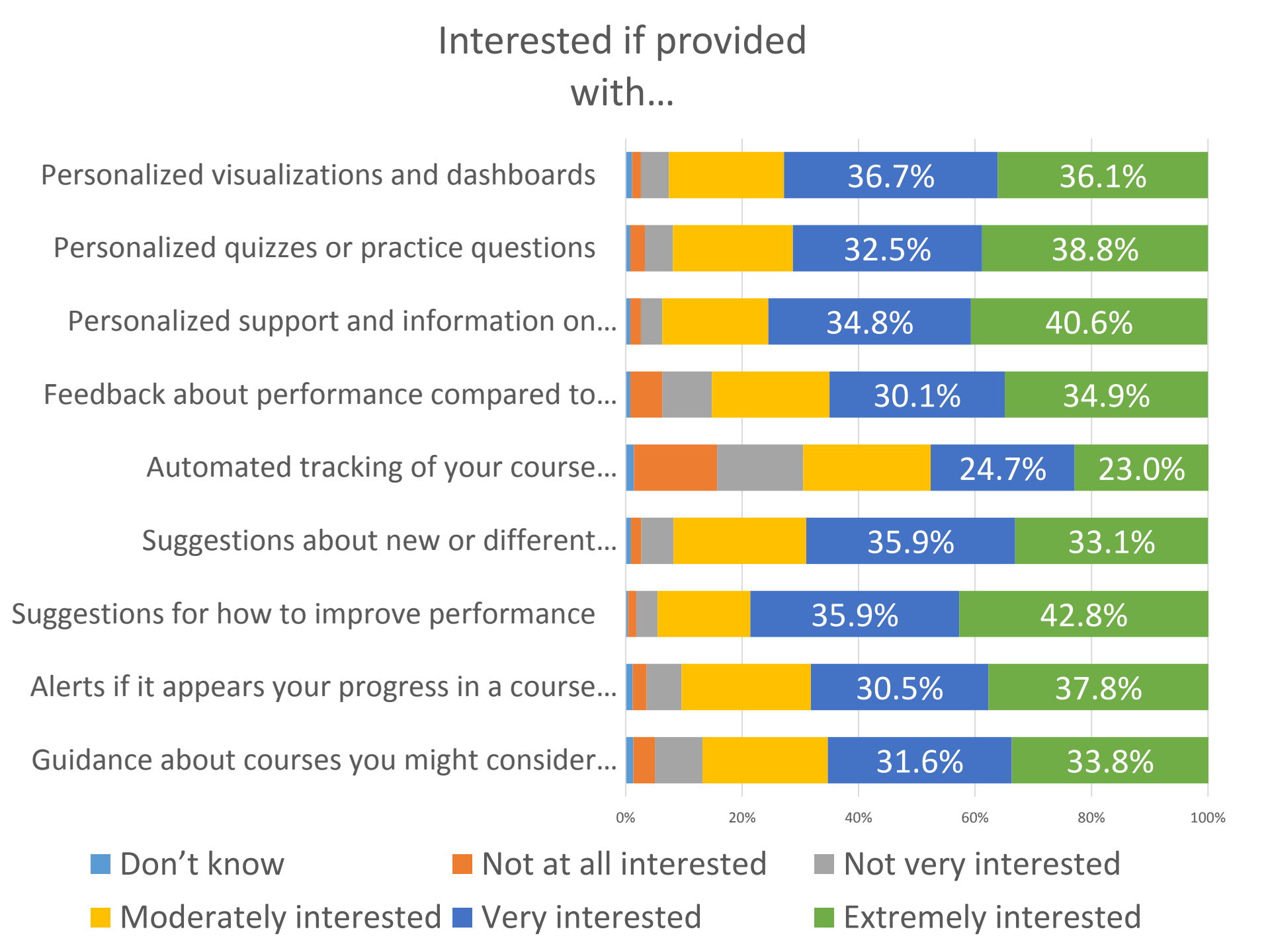
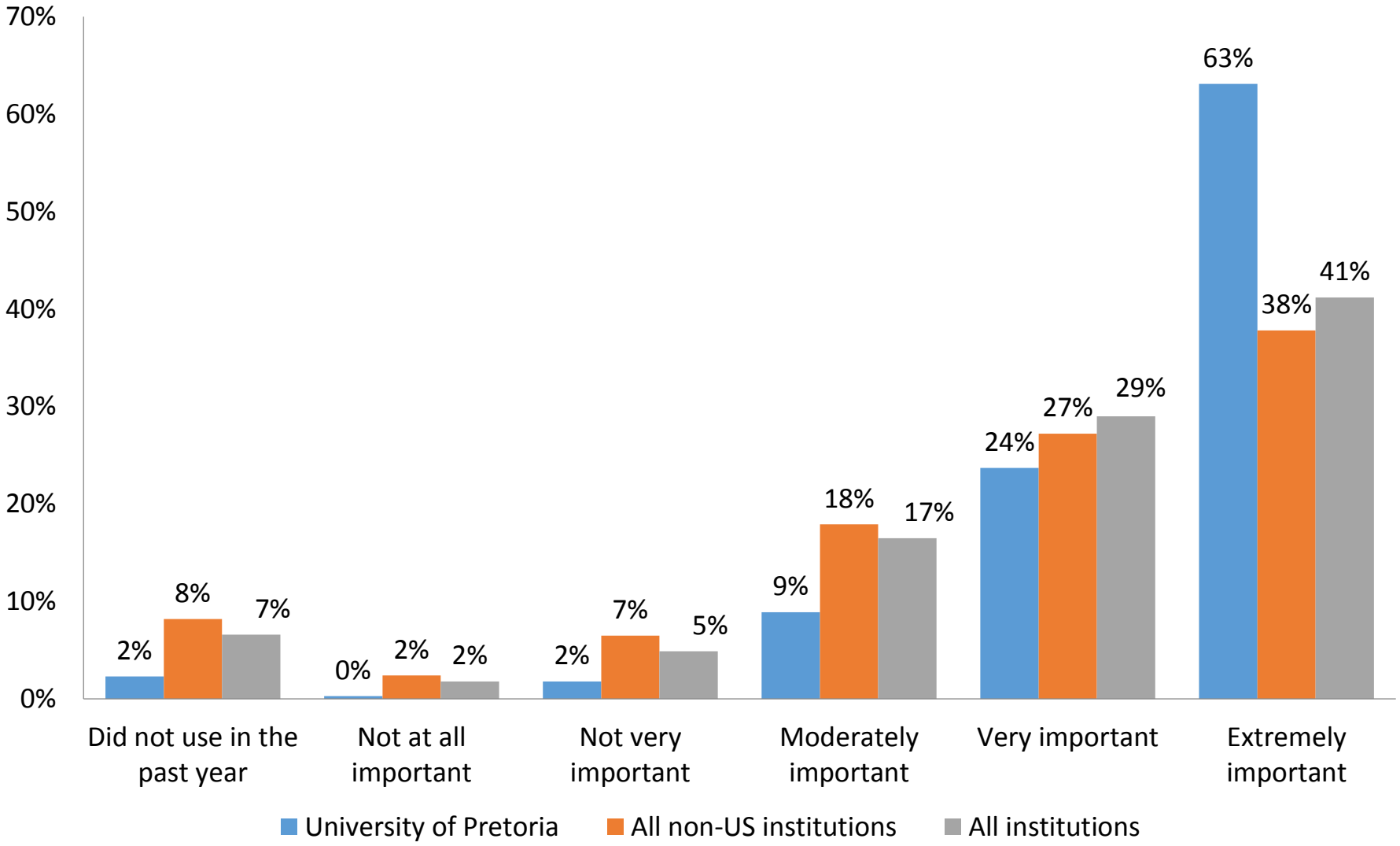
UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

Can data in a Learning Management System support student success?

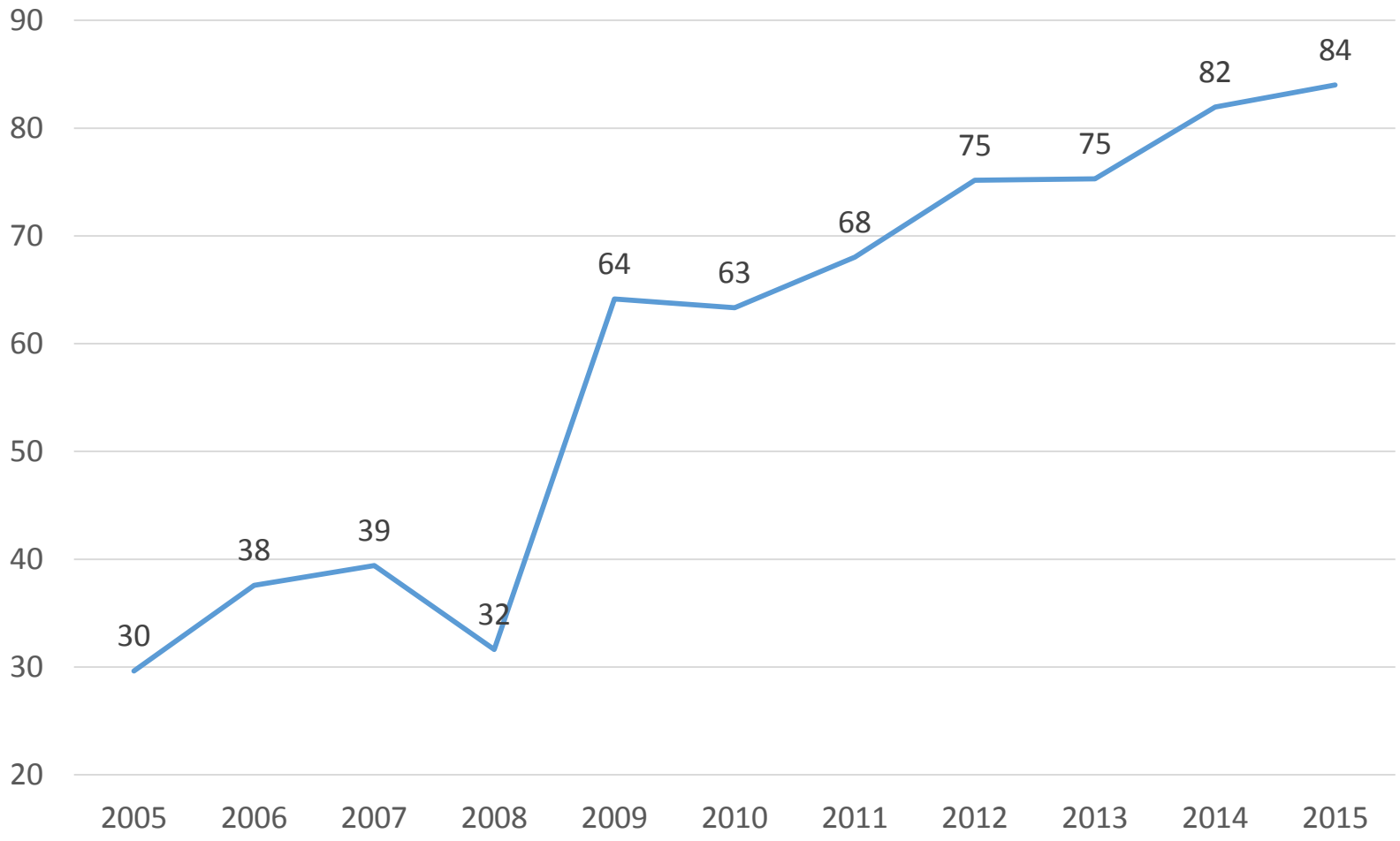
29 June 2016


Interested if provided with…
Personalized visualizations and dashboards
36.7%
36.1%
Personalized quizzes or practice questions
32.5%
38.8%
Personalized support and information on…
34.8%
40.6%
Feedback about performance compared to…
30.1%
34.9%
Automated tracking of your course…
24.7%
23.0%
Suggestions about new or different…
35.9%
33.1%
Suggestions for how to improve performance
35.9%
42.8%
Alerts if it appears your progress in a course…
30.5%
37.8%
Guidance about courses you might consider…
31.6%
33.8%
0%
20%
40%
60%
80%
100%
Don't know
Not at all interested
Not very interested
Moderately interested
Very interested
Extremely interested

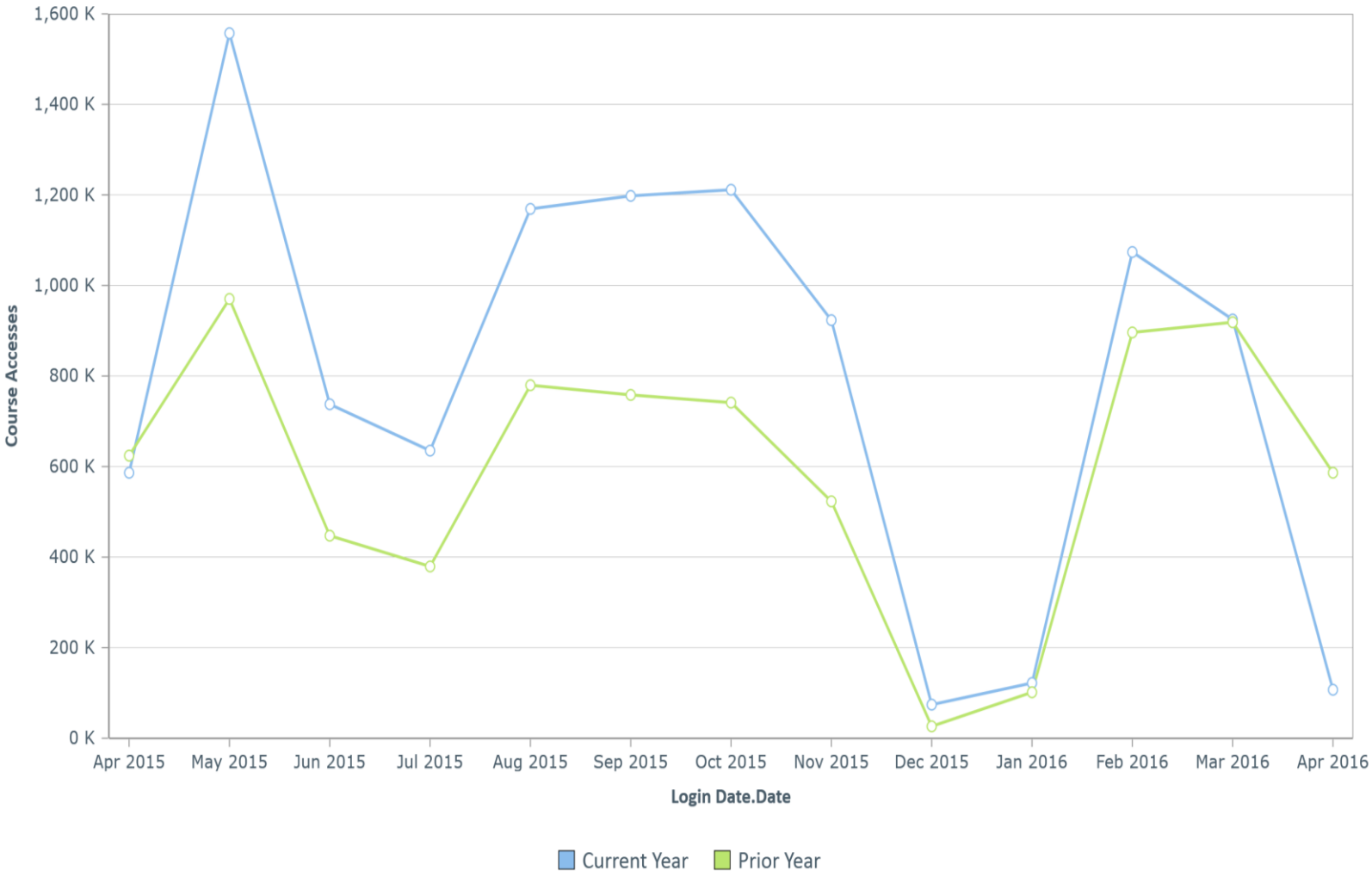
Role of LMS to achieve academic success?



Percentage of UG modules use of LMS



Use of LMS


1,600 K
1,400 K
1,200 K
1,000 K
800 K
600 K
400 K
200 K
0 K
Course Accesses
Apr 2015
May 2015
Jun 2015
Jul 2015
Aug 2015
Sep 2015
Oct 2015
Nov 2015
Dec 2015
Jan 2016
Feb 2016
Mar 2016
Apr 2016
Login Date.Date
Current Year
Prior Year

UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

Rationale

for integrating technology to support student engagement

Rationale for integration of LMS

Past:

- International and National trends

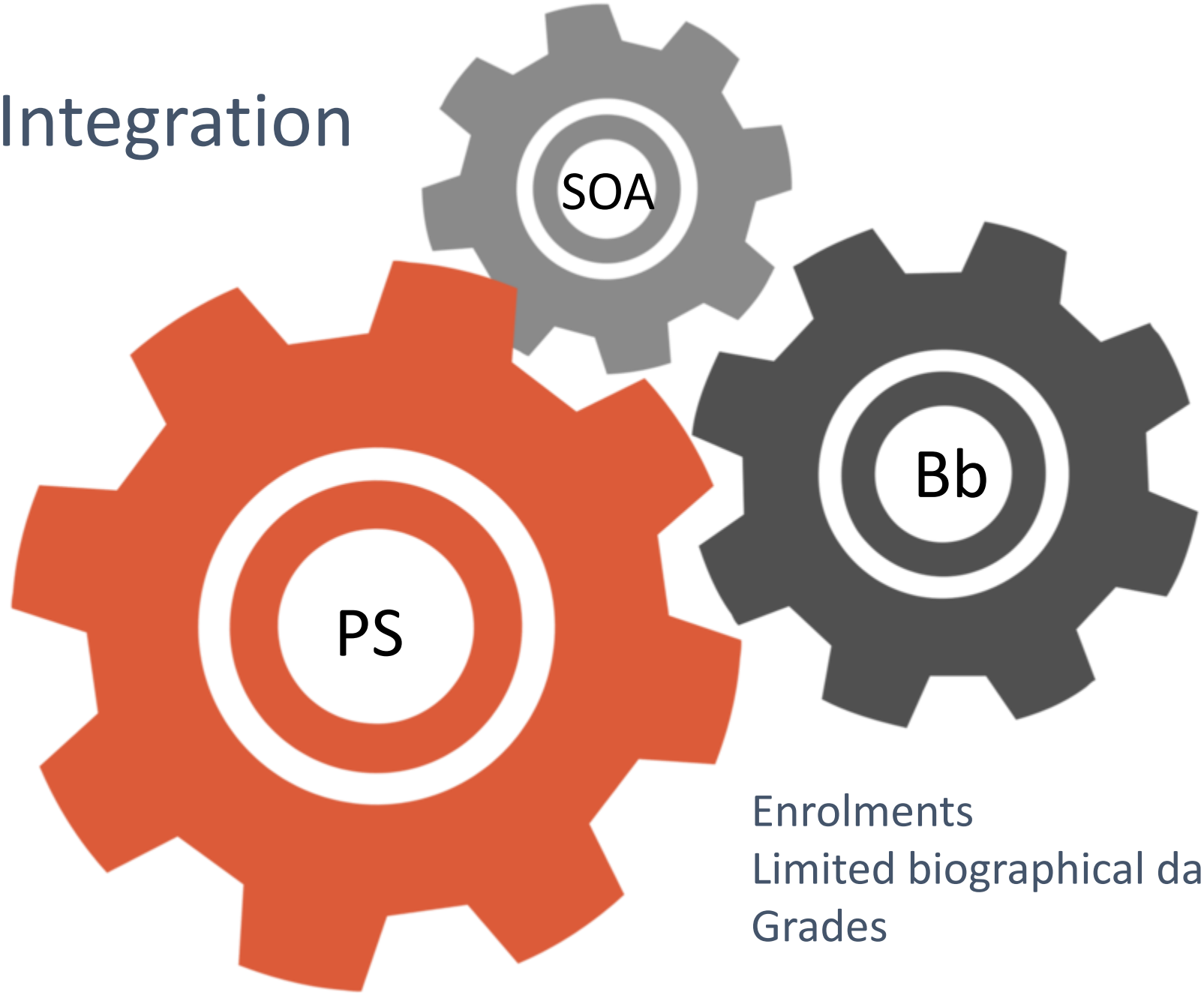
Present:

- Growth of student numbers
- Quality of education
- Academic support
- Student success

UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

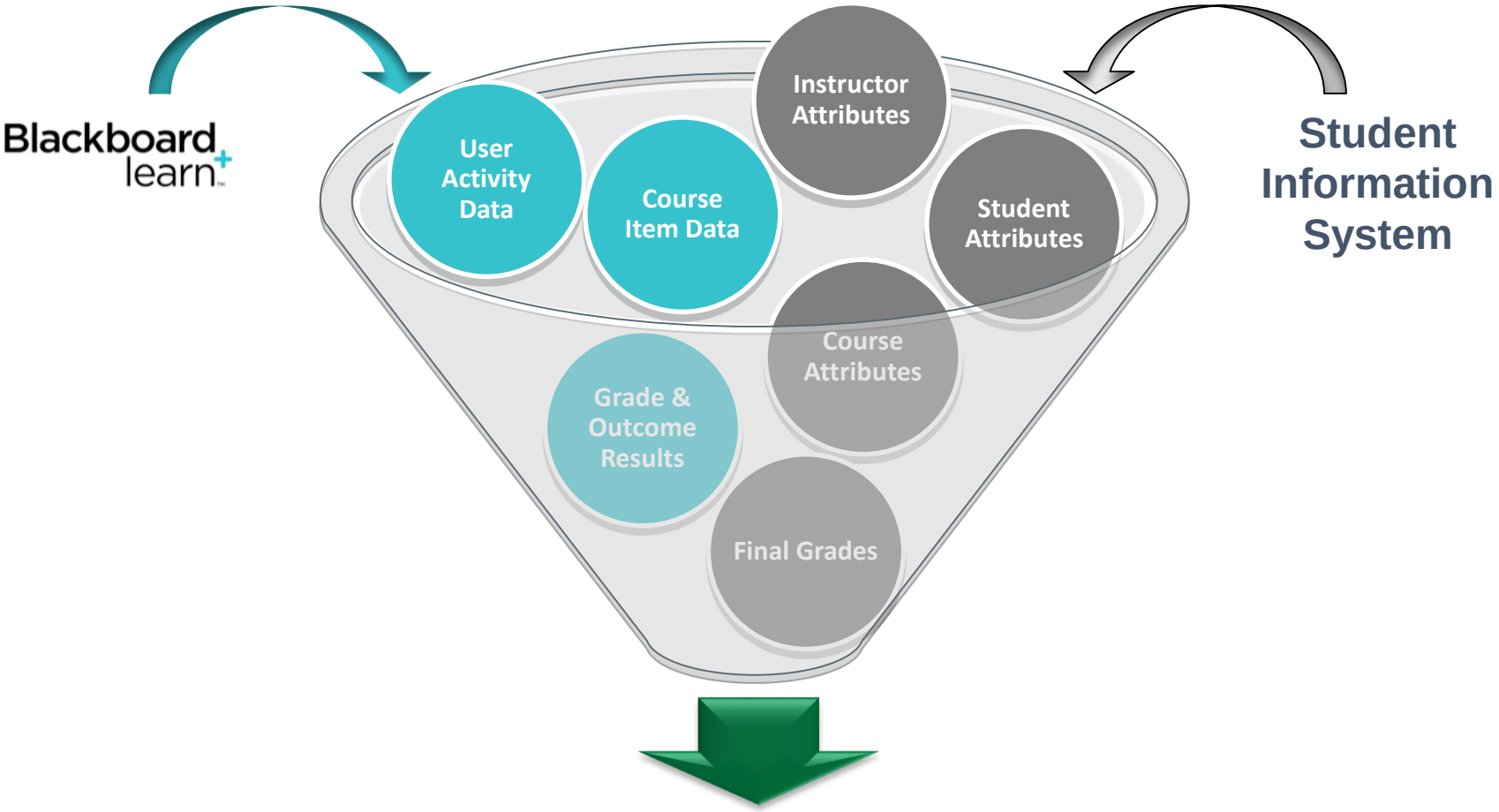
Technical Integration

Integration

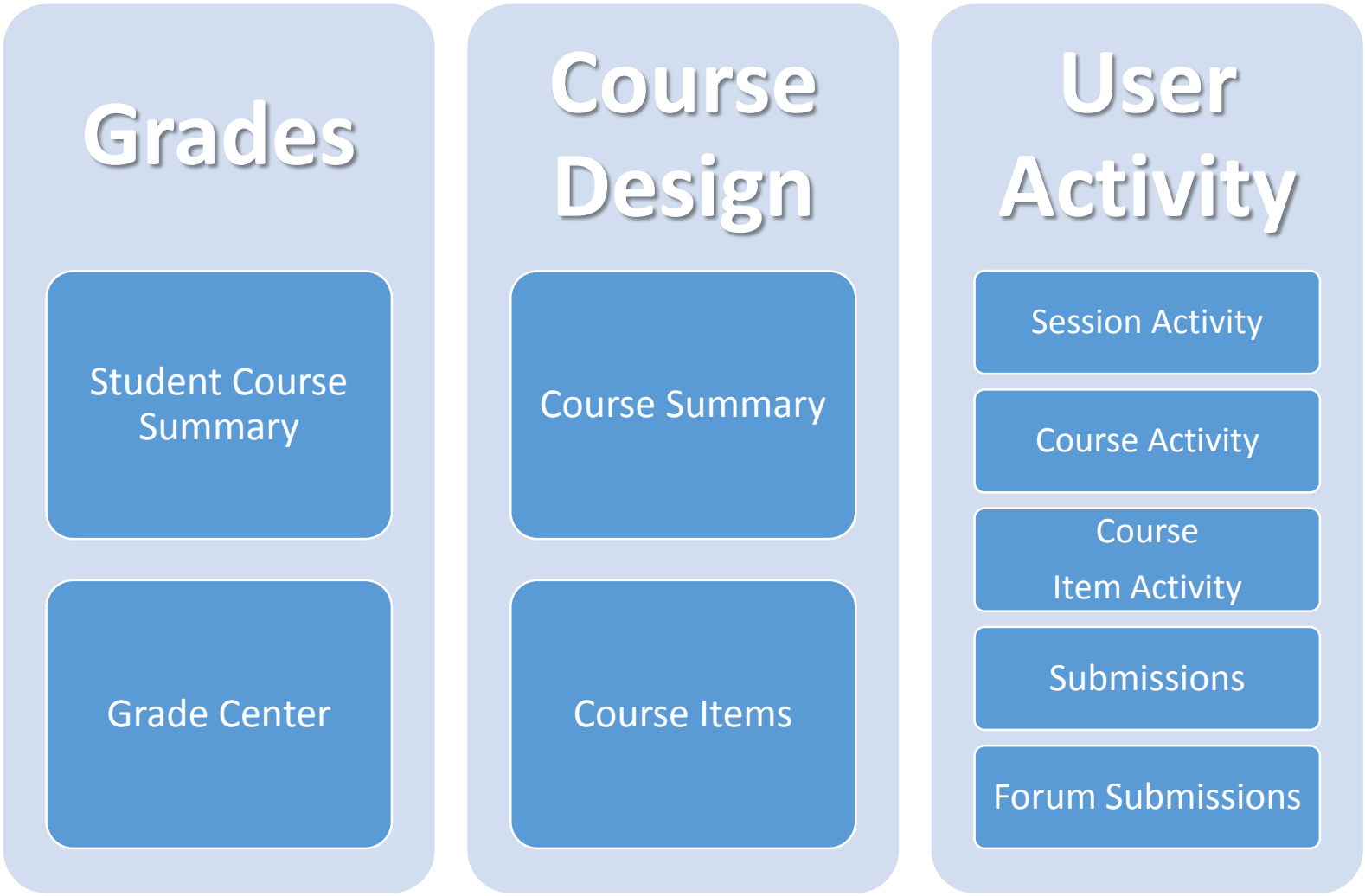


Enrolments
Limited biographical data
Grades

Integration



Categories of LMS Data For Analysis



UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

Case studies

Faculty questions

Are our students engaging actively online?

Are students at risk in this module also at risk in others?

Who are the students at risk based on LMS data?

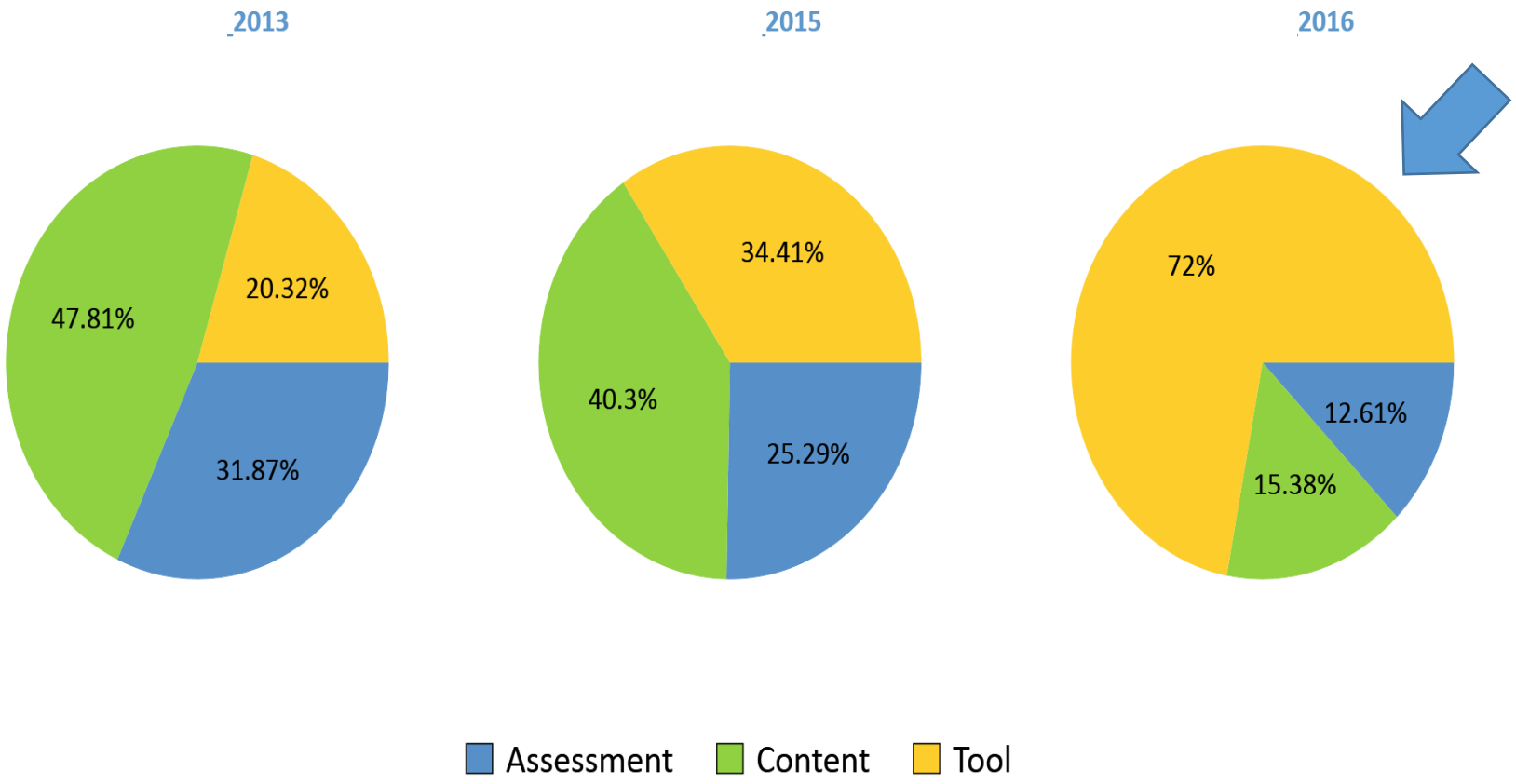
Do my course design impact student engagement?

Are we disadvantage any group of students?

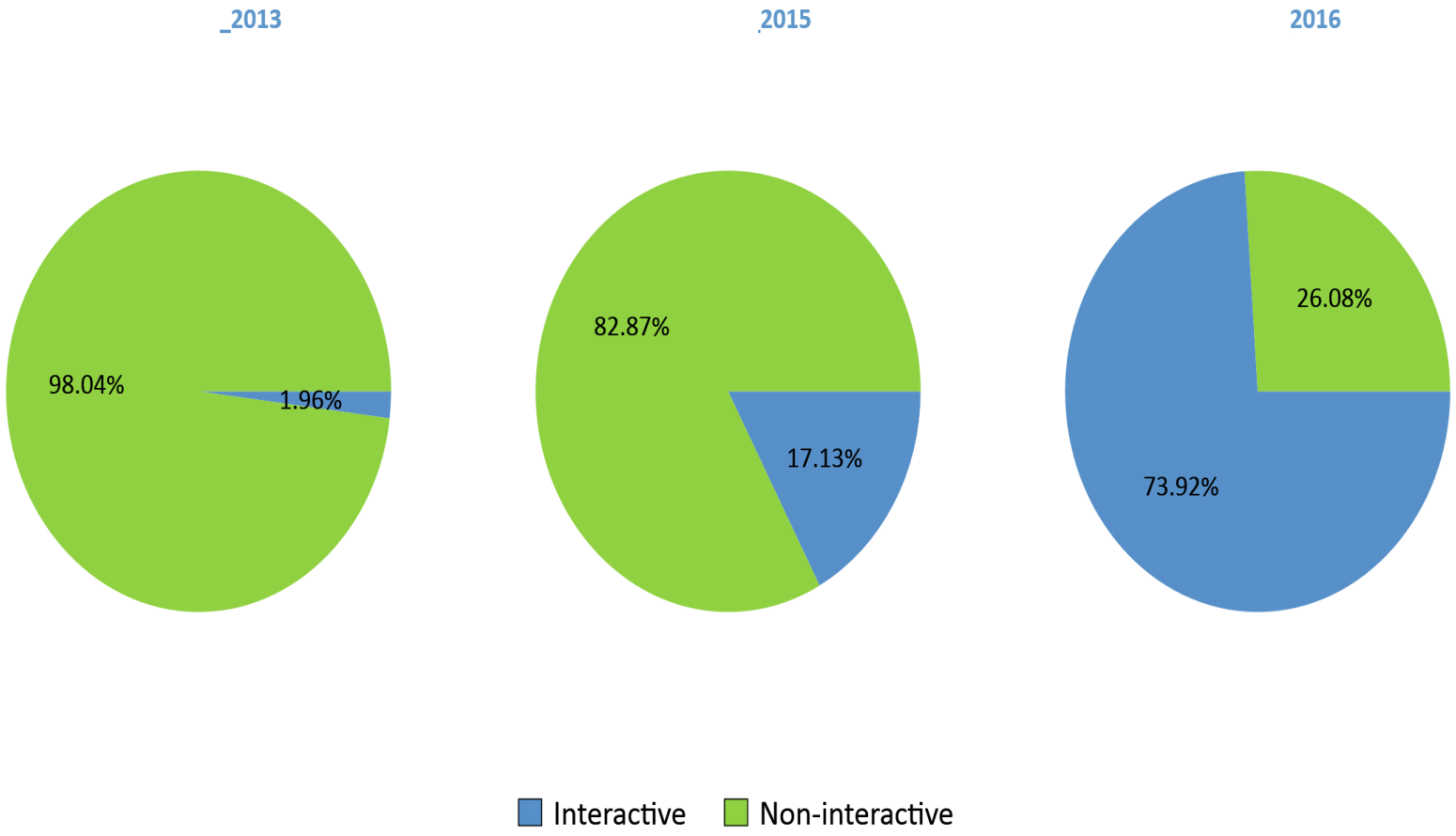
How can we further engage the students in the “middle”?

How can we further engage the at-risk students?

Course design impact on engagement



Course design impact on engagement



Course design impact on engagement

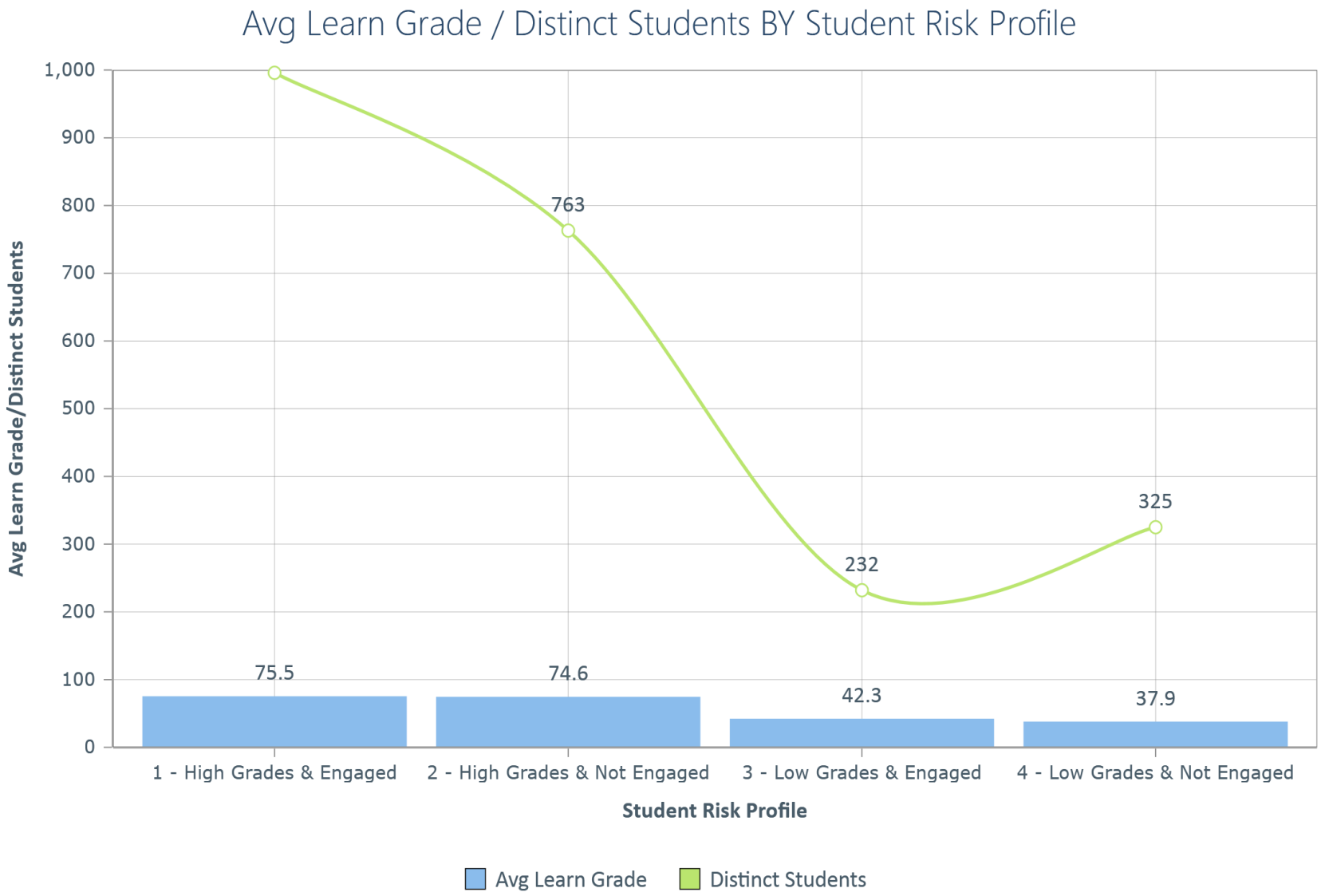
	Avg Item Accesses		Avg Submissions	
	2013	_2016	_2013	2016
Assessment	9.5	31.1	10.4	27.5
Content	69.7	271.3		
Tool		19.3		1.7

	Item Count	Avg Item Minutes	Avg Item Interactions	Avg Item Accesses
Assessment	182	208.5	149.0	31.1
Standalone Grade Center Column	32			
Survey	2			
Test	146	208.5	149.0	31.1
TurnItIn	2			

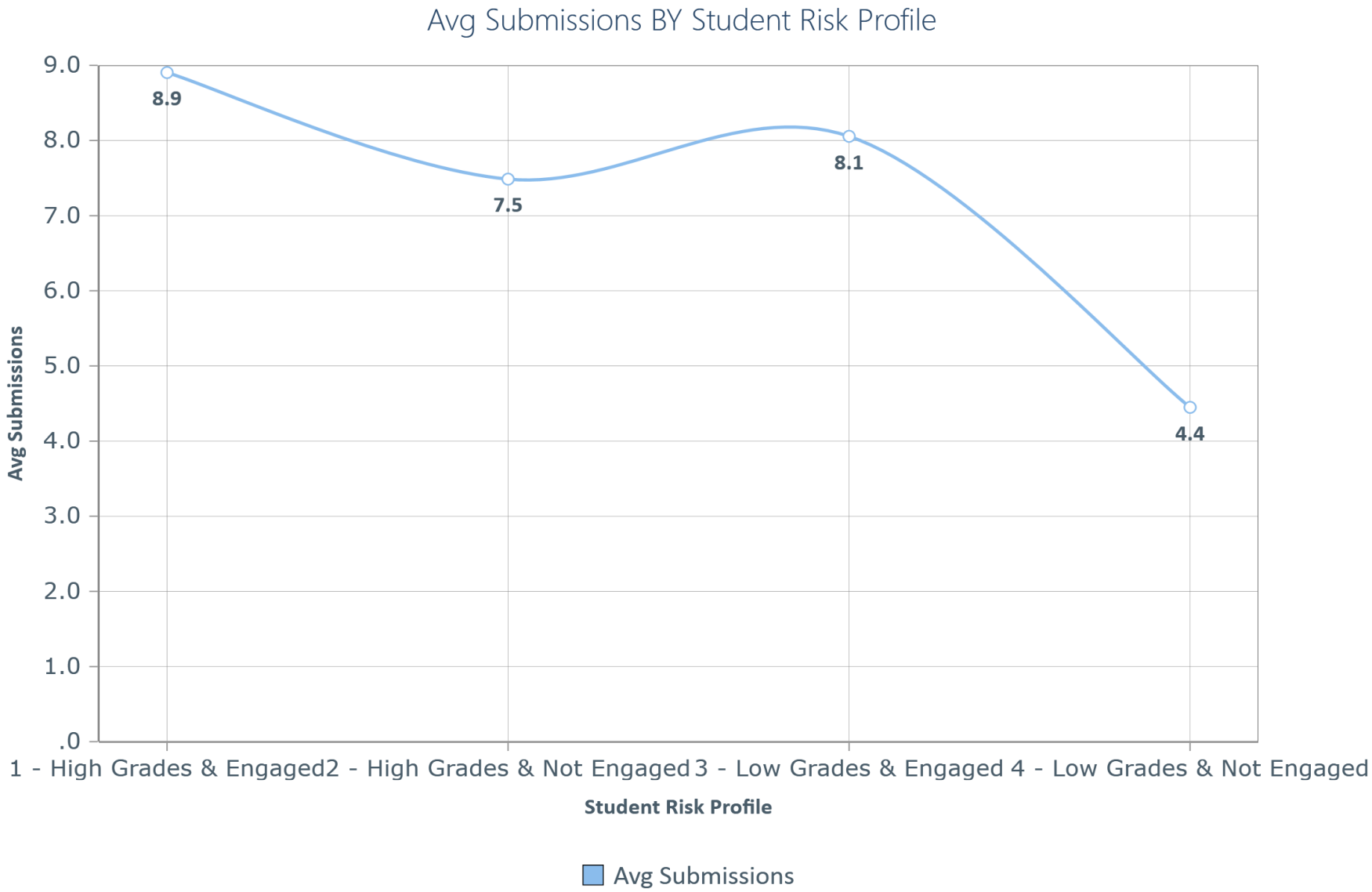
Course design impact on engagement

	Item Count	Avg Item Minutes	Avg Item Interactions	Avg Item Accesses
Tool	1,039	10.3	32.1	19.3
Announcement	159			
Blog	9			
Calendar Events	103			
Chat	9			
Contacts	9			
Discussion Forum	13	1.3	4.3	2.9
Discussion Thread	4			
Groups	4	4.0	24.7	15.0
Journal	8			
Virtual Classroom	9			
Wiki	712	7.3	7.4	4.1

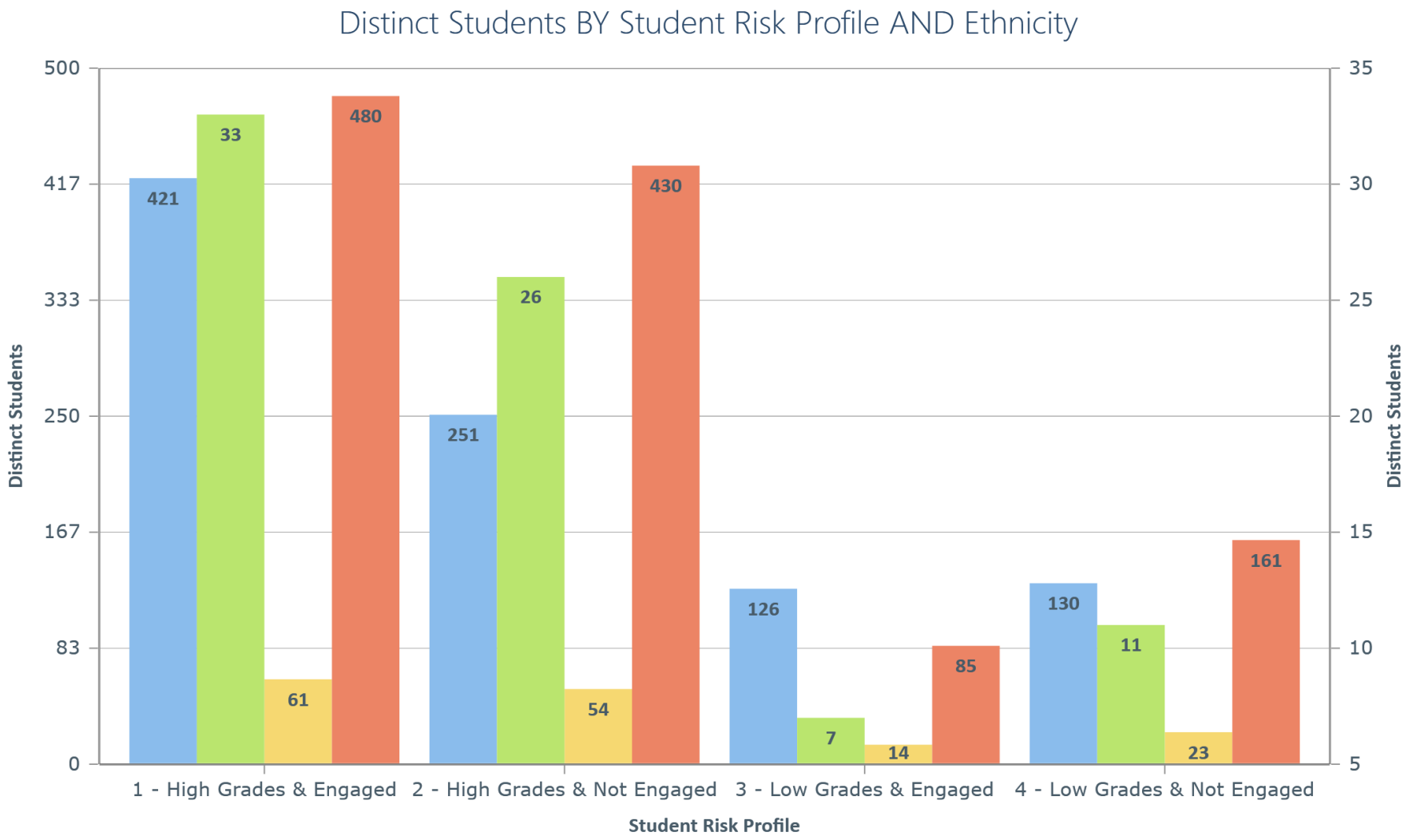
Are our students engaging actively online?



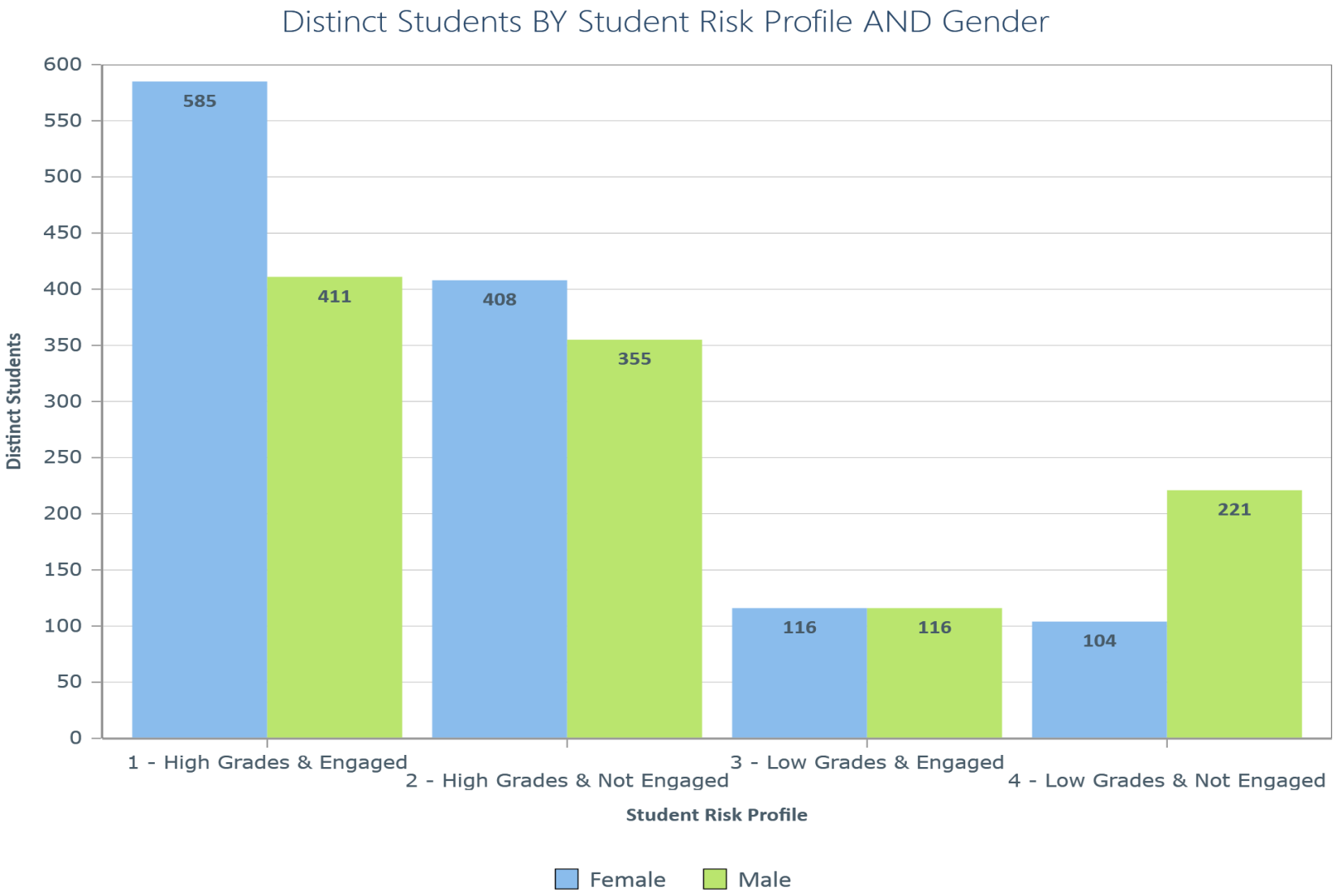
Who are the students at risk?



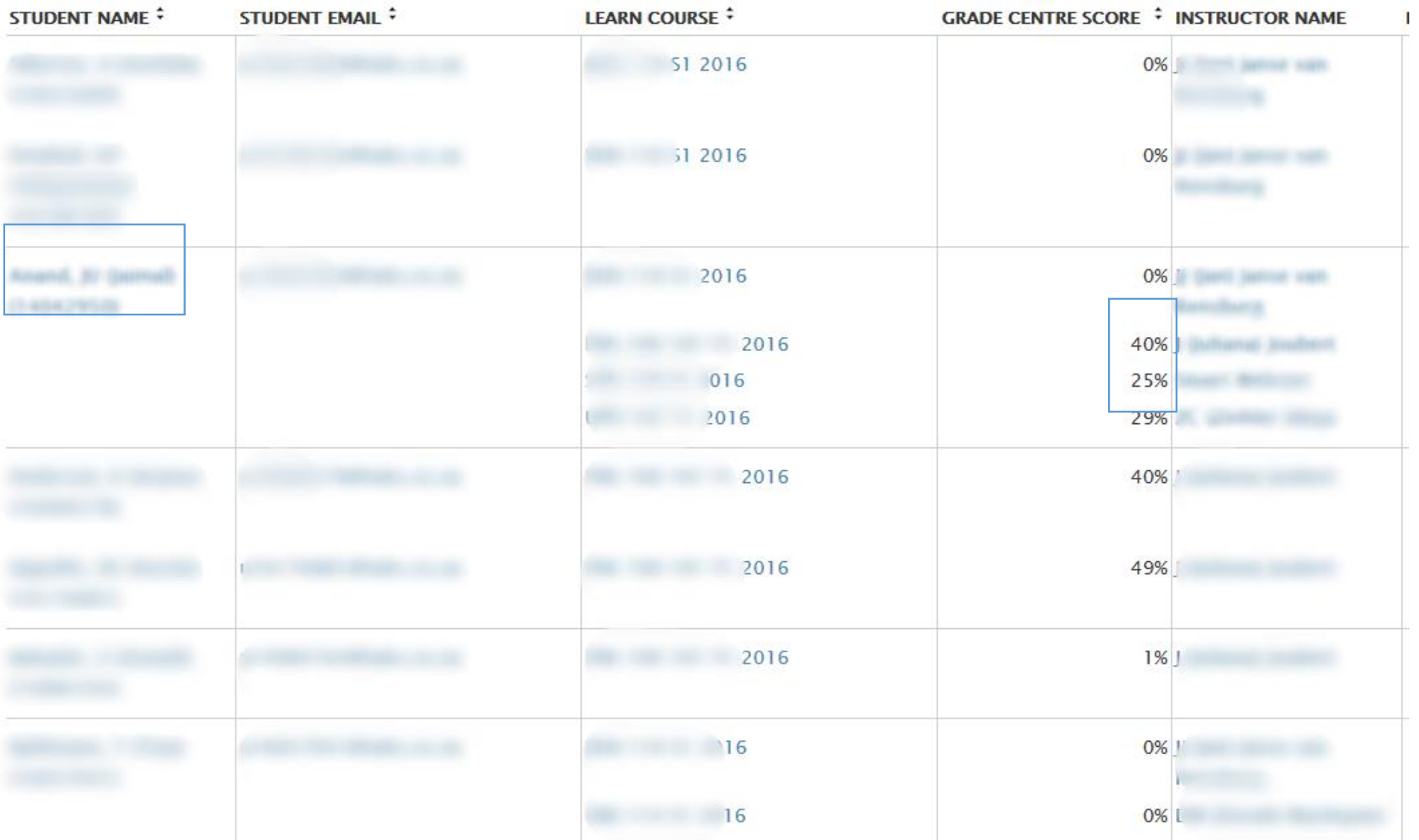
Who are the students at risk?



Who are the students at risk?

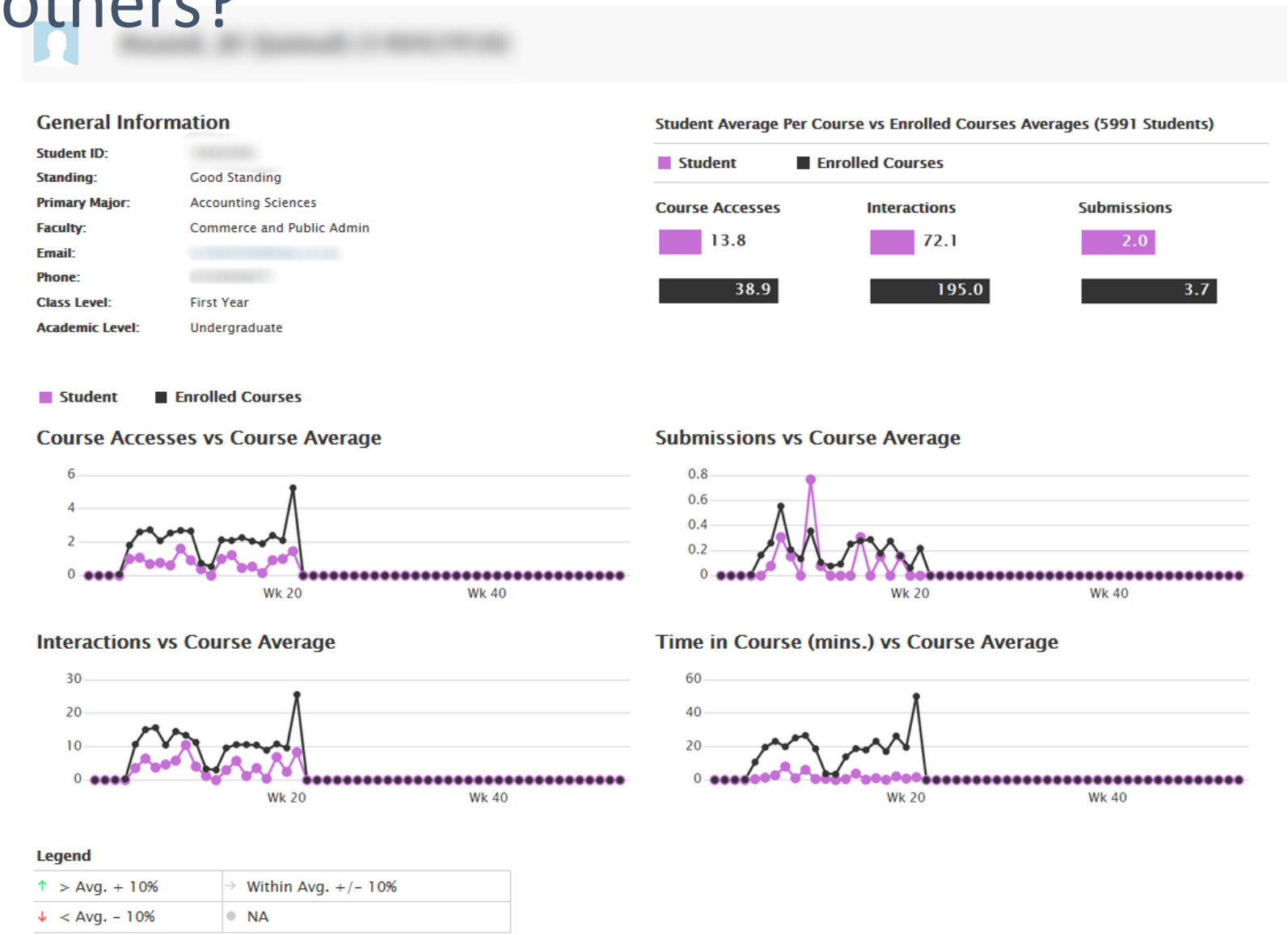


Students at risk in this module also at risk in others?



STUDENT NAME	STUDENT EMAIL	LEARN COURSE	GRADE CENTRE SCORE	INSTRUCTOR NAME
[illegible]	[illegible]	[illegible] S1 2016	0%	[illegible]
[illegible]	[illegible]	[illegible] S1 2016	0%	[illegible]
[illegible]	[illegible]	[illegible] 2016	0%	[illegible]
		[illegible] 2016	40%	[illegible]
		[illegible] 016	25%	[illegible]
		[illegible] 2016	29%	[illegible]
[illegible]	[illegible]	[illegible] 2016	40%	[illegible]
[illegible]	[illegible]	[illegible] 2016	49%	[illegible]
[illegible]	[illegible]	[illegible] 2016	1%	[illegible]
[illegible]	[illegible]	[illegible] 16	0%	[illegible]
		[illegible] 16	0%	[illegible]

Students at risk in this module also at risk in others?



Students at risk in this module also at risk in others?

COURSE ACCESSES		MINUTES		INTERACTIONS		SUBMISSIONS		GRADE CENTRE SCORE		SIS GRADE	
STUDENT	AVG	STUDENT	AVG	STUDENT	AVG	STUDENT	AVG	STUDENT	AVG	STUDENT	AVG
0	0.0	0	0.0	0	0.0	0	0.0				
0	0.0	0	0.0	0	0.0	0	0.0				
25 ↓	44.5	29 ↓	253.9	98 ↓	167.1	6 ↓	7.5	53.0% ↓	64.5%		
36 ↓	81.3	97 ↓	831.8	159 ↓	440.6	0	0.0	0.0% ↓	39.2%		
34 ↓	64.8	119 ↓	648.1	234 ↓	378.2	16 ↓	21.8	69.8% ↓	80.3%		
16 ↓	42.0	22 ↓	357.3	117 ↓	195.7	0	0.0				
5 ↓	20.9	6 ↓	130.7	41 ↓	188.0	1 ↓	6.6	28.6% ↓	80.6%		
4 ↓	34.4	3 ↓	279.6	15 ↓	151.5	0 ↓	2.9				
0	0.0	0	0.0	0	0.0	0	0.0				
34 ↓	82.0	62 ↓	704.4	174 ↓	378.0	1 →	0.9	25.3% ↓	66.2%		
0	0.0	0	0.0	0	0.0	0	0.0				
6 ↓	21.8	1 ↓	199.7	7 ↓	53.7	0	0.0				
20 ↓	70.3	70 ↓	739.5	92 ↓	473.1	2 ↓	5.9	40.1% ↓	56.1%		
45 ↓	68.5	612 ↓	755.3	238 ↓	300.1	23 ↑	20.1			30.00 ↓	54.82
49 ↓	71.7	242 ↓	815.9	190 ↓	295.5	7 ↓	10.2	66.8% →	70.0%	58.00 →	63.90
31 ↓	56.3	170 ↓	336.2	123 ↓	162.2	0 ↓	4.6	60.4% ↓	69.4%	18.00 ↓	49.00
55 ↑	43.6	392 →	375.1	259 ↑	157.9	5 ↓	8.5	100.0% →	95.5%	40.00 ↓	53.34
51 →	56.5	465 ↑	187.1	140 →	137.4	0	0.0	12.2% ↓	55.2%	22.00 ↓	54.22

Students at risk in this module also at risk in others?

Grade Details

[redacted]016 (E100)

ITEM	GRADE PERCENT	POINTS AWARDED	POINTS POSSIBLE	SUBMISSIONS	USED IN CALCULATIONS?
Total	25	38	150	–	Yes
Code of Conduct	100	10	10	1	Yes
Pre-class Aplia 3 (Chapter 3)	37	13	35	–	Yes
Pre-class Aplia 4 (Chapter 4)	13	5	38	–	Yes
Post-class Aplia 6 (Chapter 6)	26	8	31	–	Yes
Post-class Aplia 7 (Chapter 7)	6	2	36	–	Yes

Course reports: Submission report

nary (1825 Students)

	ENROLL STATUS	SUBMISSIONS				
		STUDENT	AVG	DATE OF LAST SUBMISSION	DAYS SINCE LAST SUBMISSION	LAST SUBMISSION TYPE
95)	Enrolled	0 ↓	13.5			
1353)	Enrolled	5 ↓	13.5	08/04/2016	75	Test
15019773)	Enrolled	91 ↑	13.5	07/04/2016	76	Test
937)	Enrolled	4 ↓	13.5	08/04/2016	75	Test
72)	Enrolled	0 ↓	13.5			
82322)	Enrolled	22 ↑	13.5	07/04/2016	76	Test
4868)	Enrolled	7 ↓	13.5	17/03/2016	97	Test
9450)	Enrolled	10 ↓	13.5	06/04/2016	77	Test
5493)	Enrolled	2 ↓	13.5	08/04/2016	75	Test
59)	Enrolled	9 ↓	13.5	04/04/2016	79	Test
923)	Enrolled	8 ↓	13.5	07/04/2016	76	Test
8514)	Enrolled	0 ↓	13.5			
19790)	Enrolled	11 ↓	13.5	04/04/2016	79	Test
544)	Enrolled	5 ↓	13.5	01/04/2016	82	Test
821)	Enrolled	6 ↓	13.5	08/04/2016	75	Test
(14228123)	No SIS Match	1 ↓	13.5	04/02/2016	139	Test

Student report

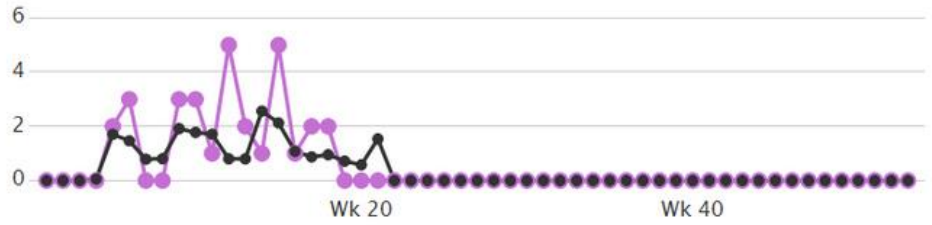
Your Total Activity Compared to the Course Average

↑ > Avg. + 10% ↓ < Avg. − 10% → Within Avg. +/− 10% NA

Course Average

↑ Course Accesses	↓ Time in Course (mins.)	↑ Interactions	↑ Submissions	↓ Grade Centre Total Score
30.0	135.9	307.0	34.0	57.5
22.2	262.8	166.6	13.5	80.7

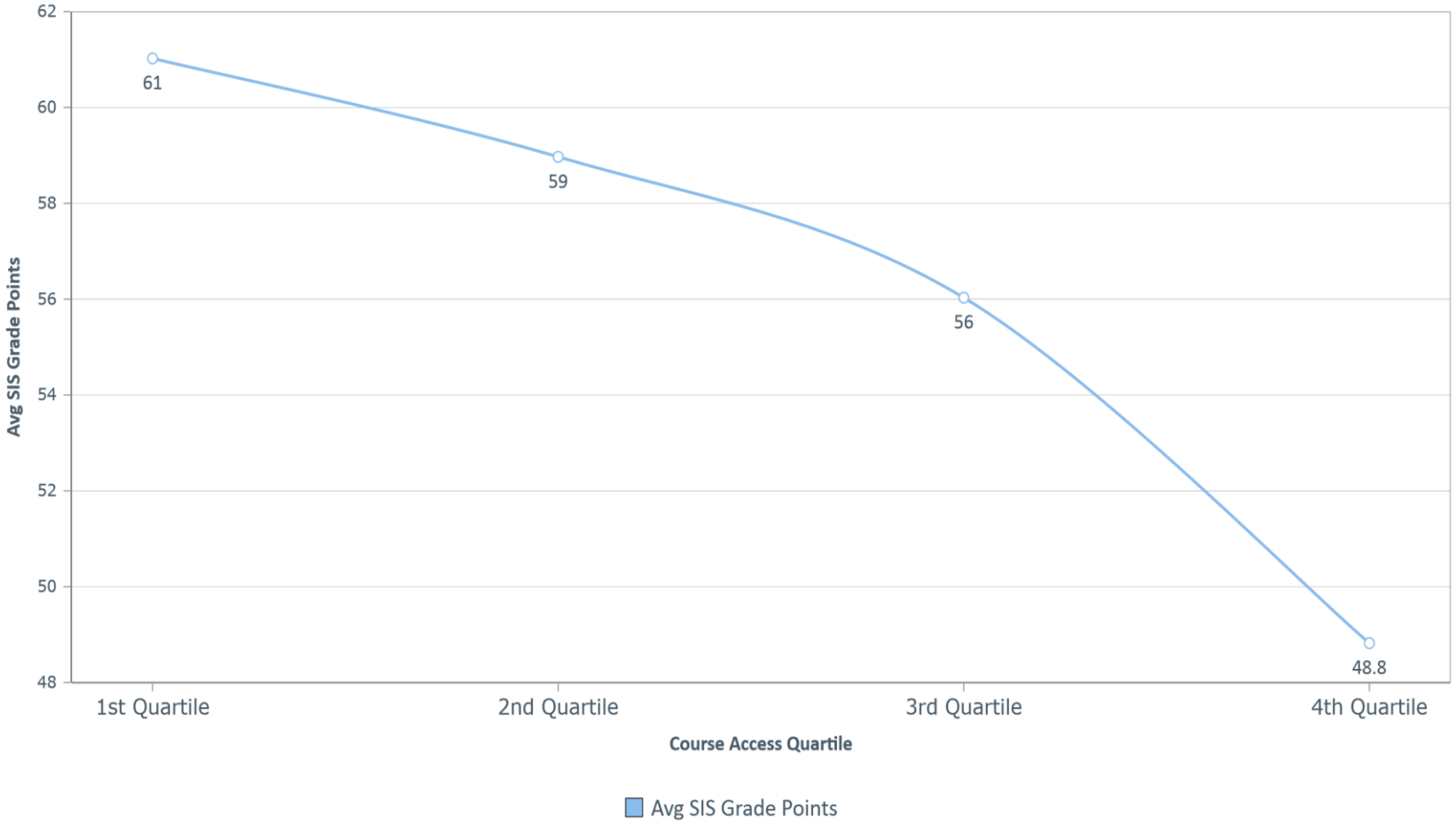
Accesses vs Course Average



Class Standing (%tile)	Credits Attempted	Credits Earned
8 %	8.000	0.000

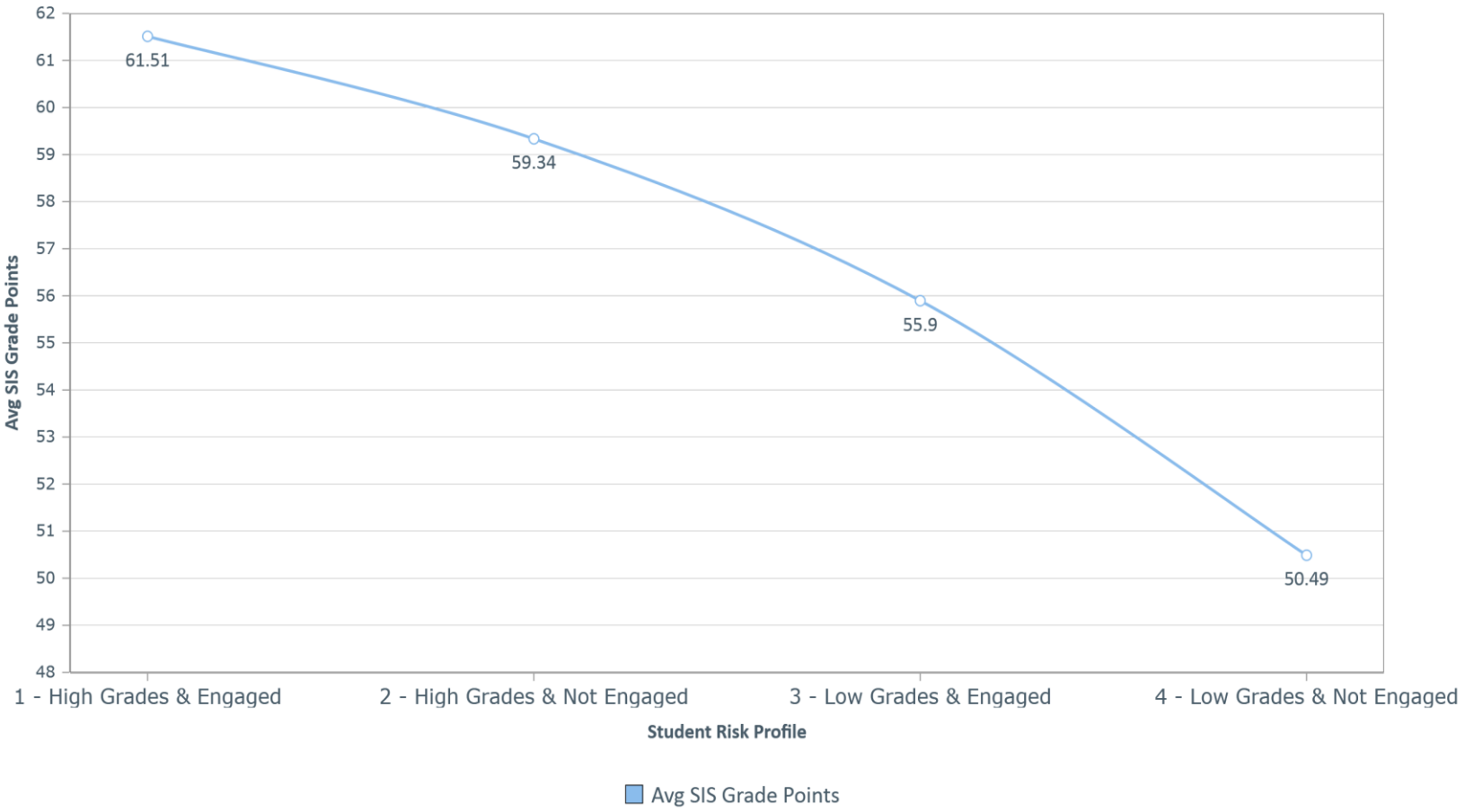
Can data in a Learning Management System support student success?

Average final grade compared to course access per access quartile



Can data in a Learning Management System support student success?

Average final grade compared to student risk profile



Conclusion

- LMS data in isolation
- Impact of professional development / support
- Integration with other data sets
- Skills set needed
- Policies
- Context: Correlation does not equal causation
- Provide insights that might not be obvious
- LMS data can inform lecturers, students & advisors
- Guide actions such as learning design

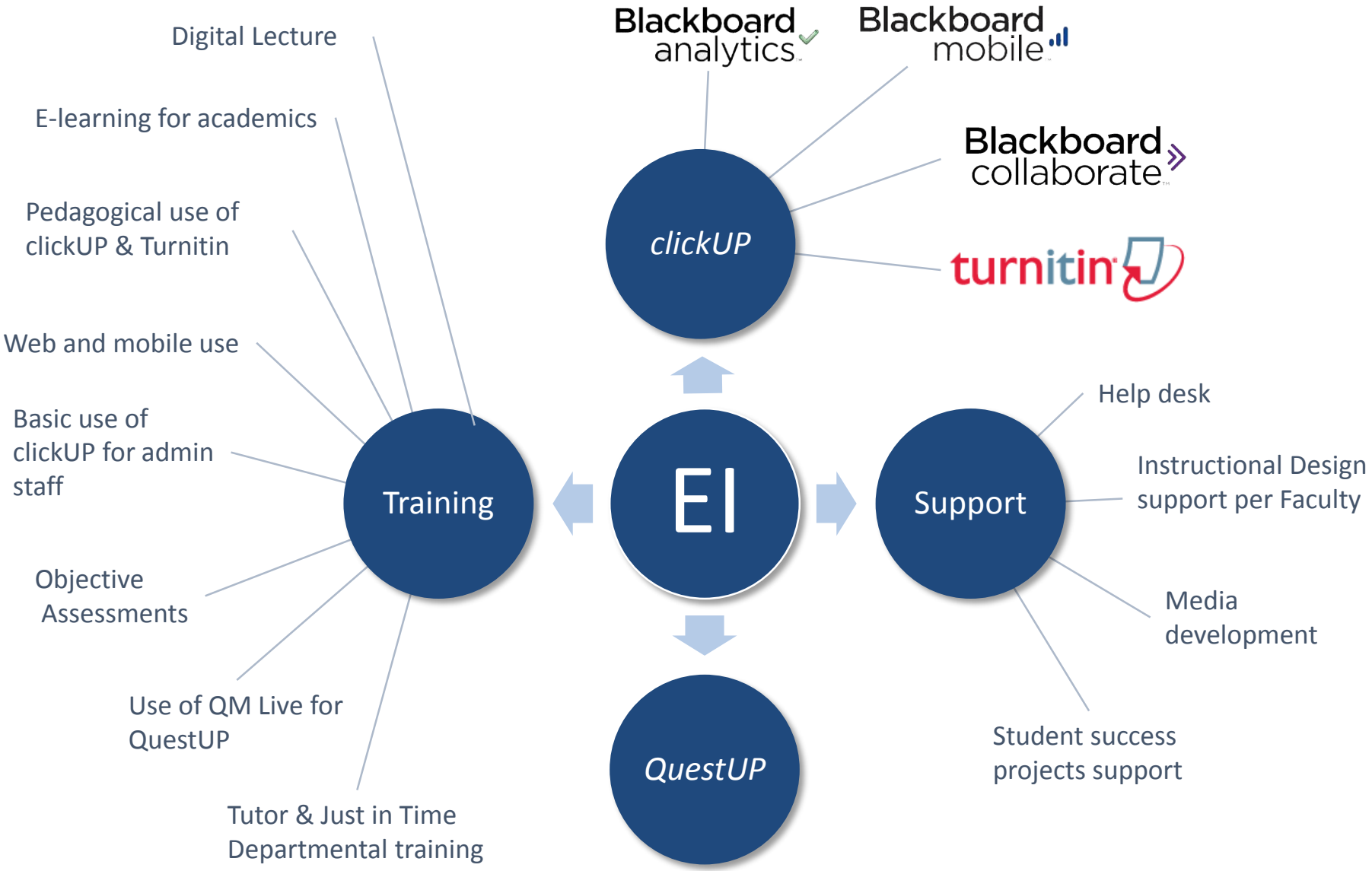
Dolf Jordaan
dolf@up.ac.za

Flipboard

Educational Technology and ICT trends

UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA
Denkleiers • Leading Minds • Dikgopolo tša Dihlalefi

Online with EI



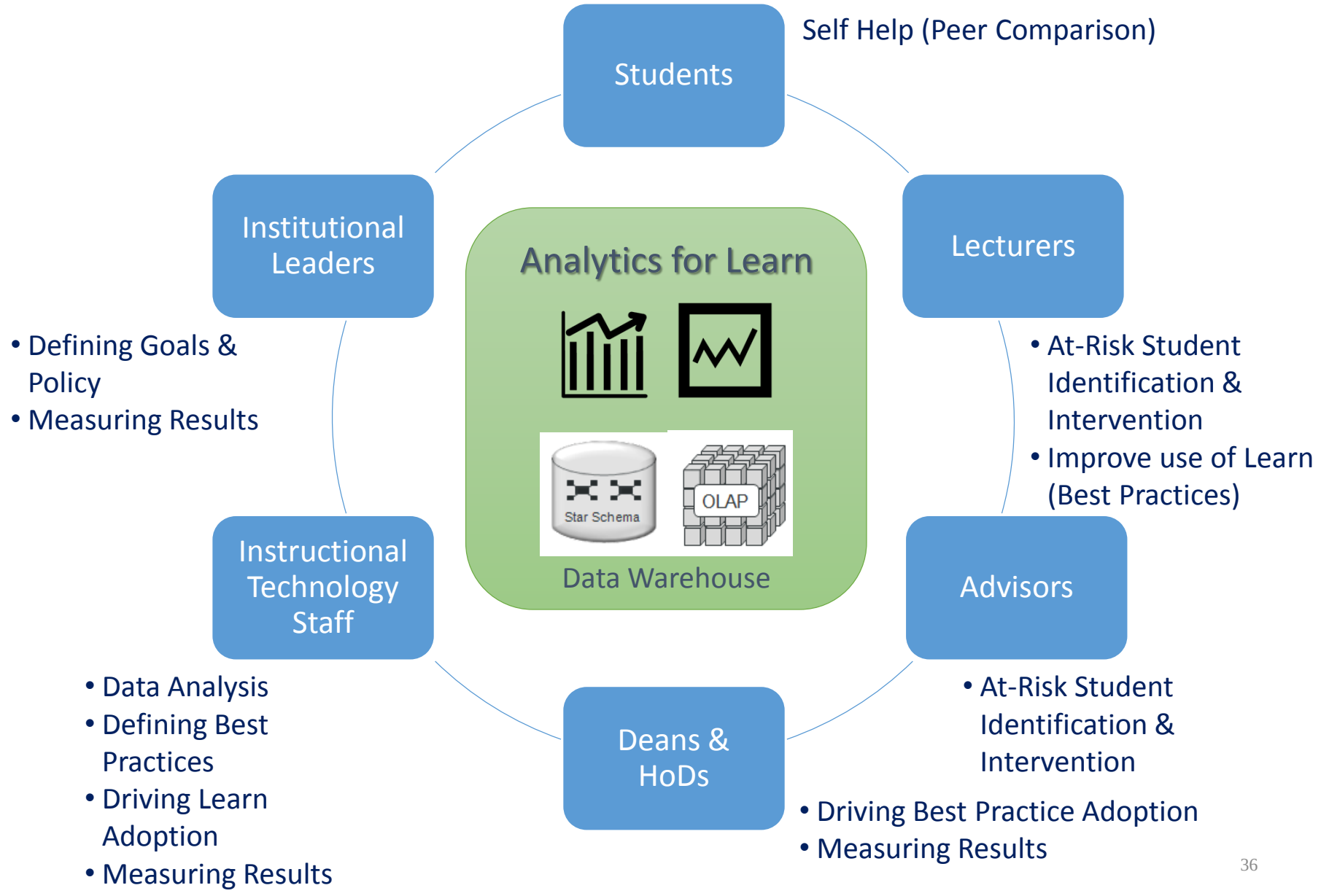
LMS data

- **Grade Center**
  - Needs Grading
  - Full Grade Center
    - Assignments
      - Group: Group: Progress Mark 1 - 39%
      - Group: Group: Progress Mark 40 - 44%
      - Group: Group: Progress Mark 45 - 49%
      - Group: Group: Progress Mark 50 - 54%
      - Group: Group: Progress Mark 55 - 64%
      - Group: Group: Progress Mark 65 - 69%
      - Group: Group: Progress Mark 70 - 74%
      - Group: Group: Progress Mark 75 - 100%

Name	First Name	Progress mark	Total	ICT 1	ICT 3
		36.00	299.33	1.00	0.00
		54.00	310	1.00	19.00
		81.00	522	1.00	23.00
		60.00	382	1.00	0.00
		31.00	225	1.00	23.00
		81.00	426	1.00	22.00
		57.00	252	0.00	0.00
		72.00	459.33	1.00	0.00
		72.00	476	1.00	23.00
		93.00	637	1.00	23.00

Rows: 0

Analytics

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

LMS Analytics