

THE DUTCH AND GRONINGEN EXPERIENCES WITH STUDENT MONITORING



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Overview

Two parts:

- 1. Groningen and NL context (JvR)
- 2. UG student monitoring (JvdK)





Part 1: Groningen and NL context

- 1. University of Groningen
- 2. Dutch organisation Institutional Research
- 3. National student database: 1cijferHO





Groningen





405 years of tradition and innovation

- > Recognition of differences in talent and ambition
- > Stimulation of cross-border research and education
- > Student-oriented
- > Investment in the highest quality
- > Contributing to society by collaborations with public and private organizations

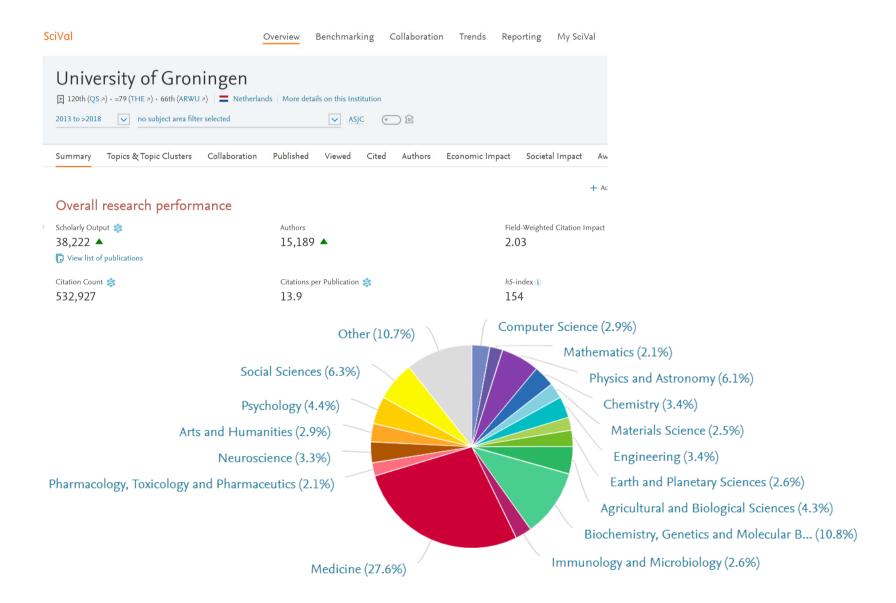




- > Founded in 1614
- > 3.1500 students, 7.019 international, 120 nationalities
- > 5.895 fte total personnel, 3.365 fte academic
- > 11 Faculties
- > 48 Bachelor's degree programmes
- >>100 Master's and specializations
- > 24 Double degree programmes
- > 6 Erasmus Mundus programmes
- > Total budget 667 M€









Dutch Higher Education (2017/18)

- > 14 Universities
 - · 290.000 students
 - . 54.500 staff members
- > 37 universities of applied science
 - · 453.000 enrollments
 - . 48.000 staff members





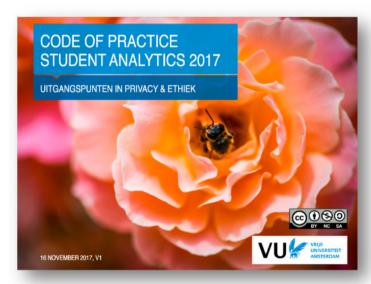
Dutch Association for Institutional Research

- > Association of Dutch HE professionals
- > IR: 'Business Intelligence for HE'
- > Supports informed policy making
- > # Academic research (nor sloppy science)
- > Bridges IT Policy domains
- Covers all policy domains: Education, Research, HR, Finance



Slide from VU presentation at DAIR seminar

In February 2018 the VU published a **Code of Practice Privacy & Ethics** for Student Analytics



Cover photo: Diana Măceşanu on Unsplash

This Code of Practice intends to inform:

- I. Students about Student Analytics and its intentions, and in what way their personal data is processed and for what purposes it is analysed.
- II. Employees and researchers how Student Analytics is allowed to be analysed and used within the VU and what safeguards must be in place.

Code of Practice

What does the VU stand for in the development and application of Student Analytics



National database: 1cijferHO

- > '1-number HE': 1 national student database
- > Originates from VSNU initiative in 1990's (KUO, built by IR colleagues, facultative)
- > Prime goal: support internal external (national)Quality Assurance
- > Universities + 'Fach Hochschule'
- Detailed information (age, gender, nationality, educational history, enrollments, diplomas)
- > Allows to track, benchmark and analyze educational careers of students.



_2018.csv



46 Aantal (telveld)

Variabele nummer	Naam veld	Bron	Type veld			
1	Inschrijvingsjaar	1cHO	tekst			
2	Opleidingsvorm	1cHO	tekst			
3	Maand vanaf	1cHO	tekst			
4	Inschrijvingsvorm	1cHO	tekst			
5	Actuele instelling	1cHO	tekst			
6	Opleiding actueel equivalent	1cHO	tekst			
7	Iscedf2013rubriek (NIEUW!)	CBS	tekst			
8	Opleiding historisch equivalent	1cHO	tekst			
9	Croho-onderdeel actuele opleiding	1cHO	tekst			
10	Type hoger onderwijs binnen soort hoger onderwijs	1cHO	tekst			
11	Opleidingsfase actueel	1.440	taket			
	46 Variables	of Insc	hrijving	en_	aggr	_VSNU_
28	Hoogste vooropleiding voor het HO	1cHO	tekst			
29	Hoogste vooropleiding	1cHO	tekst			
30	Geslacht	afleiding	tekst			
31	Leeftijd per peildatum 1 oktober	1cHO	numeriek			
32	Nationaliteit 1	1cHO	tekst			
33	Eerstejaars aan deze instelling (Gebaseerd op 1cHO variabele Gecorrigeerd eerste jaar aan deze instelling)	afleiding	tekst			
34	Soort inschrijving act. inst - type ho binnen soort ho	afleiding	tekst			
	Indicatie eerstejaars continu hoger onderwijs	afleiding		-		
	Indicatie eerstejaars continu soort ho	afleiding		-		
	Indicatie eerstejaars continu actuele instelling	afleiding				
45	Indicatie eerstejaars continu type ho binnen ho	afleiding	tekst			

afleiding numeriek



Part 2: UG student monitoring

- 1.UG databases
- 2. Business Intelligence portal
- 3. Pilot: monitoring on course level





UG databases: internal data

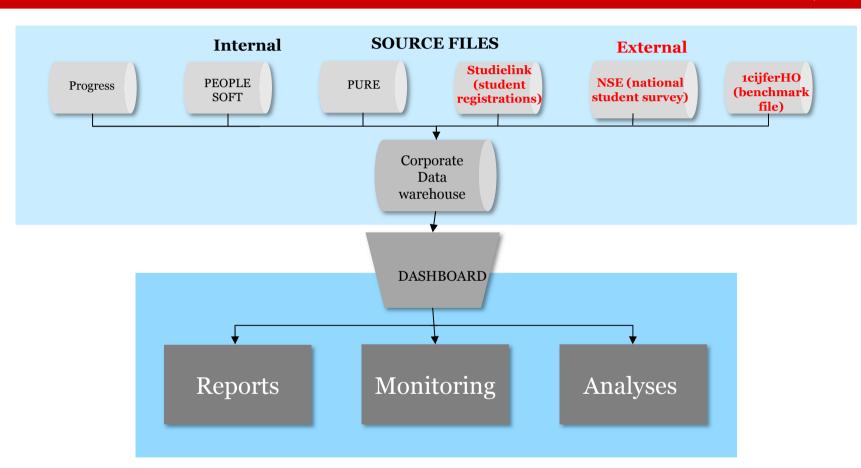
- > Financial
- > Human Resources
- > ...
- > Education and student data
 - Where? Student administration, Educational administrative system, Online learning environment
 - levels: course, degree programme, faculty, university
 - What? Degree programme applications and registrations, course registrations, diplomas, grades, course material
 - Who? Students, teachers, central and faculty support staff, quality assurance, management



UG Business Intelligence Portal (BI Portal)

- > Data warehouse for collecting and visualizing data by combining internal AND external source
- Access via authorization rights: reading and editing
- > Goals
 - Supporting management and staff
 - Offering reliable data / harmonizing use of data (same definitions!)
 - Providing options for tailored analyses by faculties







Business Intelligence Portaal RUG (1a, Geef mij toegang)



Welkom op de BI-portaal, het centrale dashboard overzicht van de Rijksuniversiteit Groningen. Mocht u rechten willen aanvragen tot een dashboard, kunt u dit doen via het "Aan- en afmeldformulier GAI" of door contact op te nemen met de BI-desk

Financiële verantwoording



Analyse Financiele Rapportages
Aanbesteding Crediteuren Crediteuren Maandrapportage Corporate Maandrapportage Faculteit en Dienst Vaste Activa

Onderwijs (Centraal)



Aanmeldingen Analyse Onderwijs **Onderwijs Informatie** Kwaliteitszorg Onderwijs

Onderwijs (Facultair)



Campus Fryslan Economie en Bedrijfskunde Gedrags- en Maatschappijwetenschappen Godsgeleerdheid en Godsdienstwetenschappen Honours College Medische Wetenschappen Rechtsgeleerdheid Ruimtelijke Wetenschappen **University College** Wijsbegeerte

Science and Engineering

Bekostiging



Accountant onderzoek Bekostiging Signaallijsten

Personeel



Personeel in Cijfers Urenverantwoording Medewerker

Management



Management Informatie Urenverantwoording Afdelingsmanager

Projectleiding



Financieel Project overzicht Project overzicht Facilitair Bedrijf Urenverantwoording Projectleider Urenverantwoording Projectcontroller

Facilitair



Vastgoed overzicht Vastgoed (Financieel) Vastgoed Extra



BI Portal: Education

- > Created in May 2015
- > Extended with ICT projects
- > User group of central and faculty staff members
- > Information on different levels
- > Includes data about
 - -Applications and enrollments
 - -Strategic goals
 - -Educational charts
 - -Effects of interventions and policy changes



Applications and enrollments



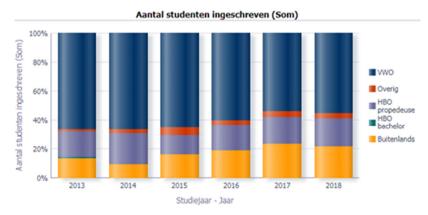
Nieuwe instroom per opleiding profielschets - vooropleiding

- Nieuwe propedeuse studenten van de faculteit Faculteit Rechtsgeleerdheid
- Het aantal nieuwe unieke studenten onderverdeeld naar vooropleiding.
- De vooropleiding is ingedeeld in categorieën.
- De volgende maanden zijn geselecteerd: 9,10.
- Cursisten en exchangestudenten (niet reguliere studenten) zijn niet opgenomen.
- De faculteit en opleiding kan opgenomen worden in het rapport.

Rapportdatum: 04-03-2019

Faculteit Zonder faculteit V Opleiding Zonder opleiding V

		2013		2014		2015		2016		2017		2018
Categorie vooropleiding	N	%	N	%	N	%	N	%	N	%	N	%
VWO	366	66.3%	482	66.3%	452	64.8%	393	60.1%	399	53.6%	429	54.9%
Overig	9	1.6%	21	2.9%	39	5.6%	20	3.1%	30	4.0%	29	3.7%
HBO propedeuse	97	17.6%	155	21.3%	91	13.1%	116	17.7%	141	19.0%	153	19.6%
HBO bachelor	5	0.9%	1	0.1%			1	0.2%				
Buitenlands	75	13.6%	68	9.4%	115	16.5%	124	19.0%	174	23.4%	171	21.9%
Totaal 4 >	552	100.0%	727	100.0%	697	100.0%	654	100.0%	744	100.0%	782	100.0%



Refresh - Export



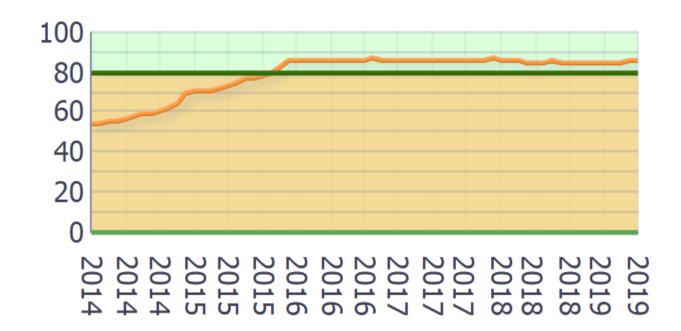
Management Information

Onderwijs Uitval 1e jaar (VSNU) Studieuitval na 1e studiejaar (VSNU) Bachelor Rendement Masterrendement 55 2014 2014 2015 2014 Uitval 1e jaar instelling (VSNU) Aantal ingeschreven studenten Aantal buitenlandse studenten 13 26K 23K 3,000 20K 2,000 1,000 2014 2015 2016 2017 Aantal eerstejaars studenten Aantal buitenlandse eerstejaar **Bachelordiplomas** <u>Masterdiplomas</u> 11000.0 5,000 4,000 1,200 9000.0 3,000 3,000 7000.0 2,000 5000.0 1,000 3000.0 2014 2014 2015 2016 2017 2016 2016 2015 2016 2014 2015



Strategic Goals: example University Teaching Qualification

BKO Certificering Docenten





National Student Survey results

Questions (NSE)	Score (2018)	Score (2017)	First year (2018)	International (2018)	Croho Nationwide (2018)	M Faculty (2018)	M RUG (2018)	M HOOP (2018)
Questions (NSE) - Description	n avg	n avg	n avg	n avg	n avg	n avg	n avg	n avg
Your study programme in general	32 3.94	22 3.95	0	0	254 4.17	671 4.09	3272 4.06	4563 4.05
The content of the programme	28 3.86	22 4.05	0	0	246 3.96	664 4.03	3200 4.00	4472 3.98
The general skills you acquire in your programme	28 4.14	22 3.95	0	0	246 3.95	664 3.96	3197 3.91	4469 3.94
The academic skills you acquire in your programme	28 3.79	22 4.14	0	0	245 4.11	663 4.10 🗸	3197 3.94	4467 4.06
How well you are prepared for a professional career	28 3.07	22 3.27	0	0	244 3.50	661 3.50 🗸	3184 3.47 🗸	4428 3.53 🗸
The teachers involved in your study programme	28 4.07	22 3.95	0	0	246 4.04	661 4.05	3190 4.01	4460 3.91
The information provided by your study programme	28 3.50	22 3.45	0	0	244 3.63	660 3.57	3191 3.65	4452 3.61
The learning facilities offered by your study programme	28 3.57	22 3.86	0	0	246 3.85	660 3.96 🗸	3164 3.96 🗸	4445 3.85
Examinations and assessment (e.g. assessment criteria and forms of examinations)	28 3.79	22 4.00	0	0	245 3.78	662 3.80	3193 3.66	4456 3.71
Programme schedules	28 4.00	21 3.81	0	0	243 3.85	661 3.93	3163 3.95	4421 3.86
Your study load	28 3.86	22 3.68	0	0	246 4.01	663 3.75	3193 3.65	4460 3.71
Academic guidance/counselling	28 3.43	22 3.68	0	0	237 3.76	636 3.70	3099 3.61	4319 3.61
The general atmosphere within your study programme	28 4.50	22 4.23	0	0	245 4.37	663 4.34	3191 4.18 🗸	4459 4.24
The opportunities made available to you to help improve your programme	28 3.36	22 3.64	0	0	240 3.77	648 3.83 🗸	3126 3.66	4377 3.80 🗸
Group/class size	28 3.93	22 4.14	0	0	242 4.20	659 4.29 🗸	3173 4.20	4435 4.16
The way your study programme challenges you in a positive way	28 3.79	22 4.00	0	0	246 3.95	662 4.09	3187 4.04	4466 4.03
The attention for internationalisation (in the curriculum, studying abroad, etc)	28 3.36	22 3.86	0	0	236 3.88	627 3.80 🗸	2968 3.66	4268 3.84 🗸
Would you recommend your study programme to friends, family or colleagues?	26 4.15	18 4.06	0	0	226 4.19	587 4.22	2826 4.15	3984 4.13

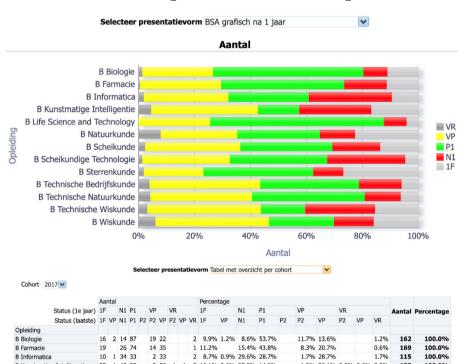


Educational Charts (including diplomas and retention rates)

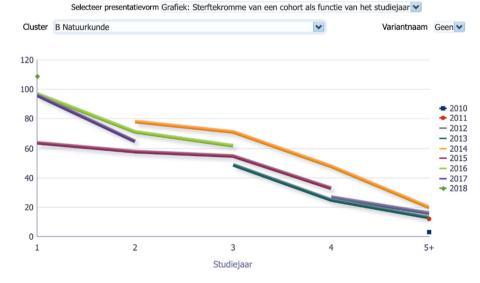




Layout options



	Aar	ntal Percentage																				
Status (1e jaar)	1F		N1	P1		VP		VR			1F	F		P1		VP		VR			Aantal	Percentage
Status (laatste)	1F	VP	N1	P1	P2	P2	VP	P2	VP	VR	1F	VP	N1	P1	P2	P2	VP	P2	VP	VR		
Opleiding																						
B Biologie	16	2	14	87		19	22			2	9.9%	1.2%	8.6%	53.7%		11.7%	13.6%			1.2%	162	100.0%
B Farmacie	19		26	74		14	35			1	11.2%		15.4%	43.8%		8.3%	20.7%			0.6%	169	100.0%
B Informatica	10	1	34	33		2	33			2	8.7%	0.9%	29.6%	28.7%		1.7%	28.7%			1.7%	115	100.0%
B Kunstmatige Intelligentie	25	1	40	23		3	56	1	1	5	16.1%	0.6%	25.8%	14.8%		1.9%	36.1%	0.6%	0.6%	3.2%	155	100.0%
B Life Science and Technology	5	1	12	90		10	27				3.4%	0.7%	8.3%	62.1%		6.9%	18.6%				145	100.0%
B Natuurkunde	15	5	11	26		6	18		1	6	17.0%	5.7%	12.5%	29.5%		6.8%	20.5%		1.1%	6.8%	88	100.0%
B Scheikunde	12		15	29		7	23			2	13.6%		17.0%	33.0%		8.0%	26.1%			2.3%	88	100.0%
B Scheikundige Technologie	3	1	23	29			26			1	3.6%	1.2%	27.7%	34.9%			31.3%			1.2%	83	100.0%
B Sterrenkunde	14	1	6	22		4	8			1	25.0%	1.8%	10.7%	39.3%		7.1%	14.3%			1.8%	56	100.0%
B Technische Bedrijfskunde	8		20	46		7	45			5	6.1%		15.3%	35.1%		5.3%	34.4%			3.8%	131	100.0%
B Technische Natuurkunde	3		6	18	1	8	9			2	6.4%		12.8%	38.3%	2.1%	17.0%	19.1%			4.3%	47	100.0%
B Technische Wiskunde	5		8	4	1	7	6		1		15.6%		25.0%	12.5%	3.1%	21.9%	18.8%		3.1%		32	100.0%
B Wiskunde	15	1	14	23		4	36		1	5	15.2%	1.0%	14.1%	23.2%		4.0%	36.4%		1.0%	5.1%	99	100.0%





Student monitoring:course level

- > Stakeholders
 - Students
 - Teachers
 - Study advisors
 - Educational Advisor (instructional designer on course level)
 - Director of Education / Degree programme coordinator
 - Boards (faculty and university)
 - Policy advisors / Quality assurance
- > Pilots
 - Early Warning Signals (EWS)
 - (Perussal see Addendum)

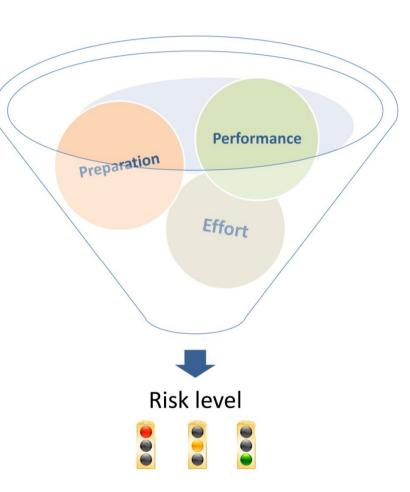


Pilot Early Warning Signals (EWS)



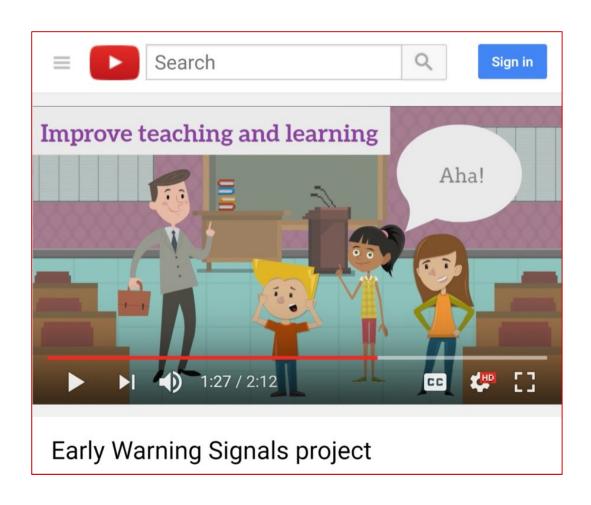








Video about EWS



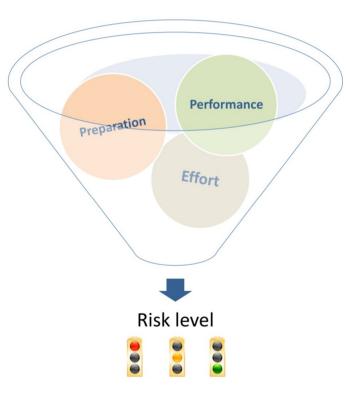


EWS: Enable to become active

- > Focused on 3 out of 7 stakeholders
 - student: find out about performance and behaviour compared with peers
 - instructor: real-time insights into online behaviour
 - study advisor: identify at-risk students earlier
- > Infrastructure
 - Online learning environment
 - Blackboard Analytics for Learn (A4L)



Early Warning Signals (EWS)

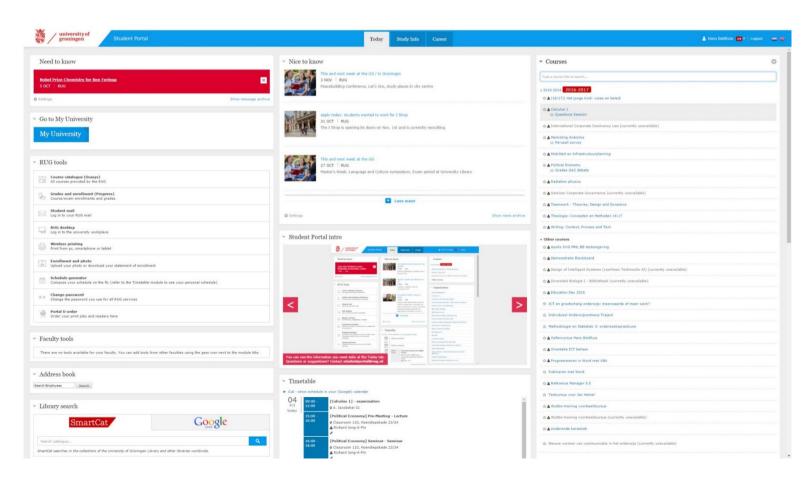


- + signals
- + interventions
 Early Warning Signals

- 1. Academic preparation
- prior education, student characteristics
- 2. Student performance
- student workload, attempts, grading
- 3. Student effort
- activity in learning environment

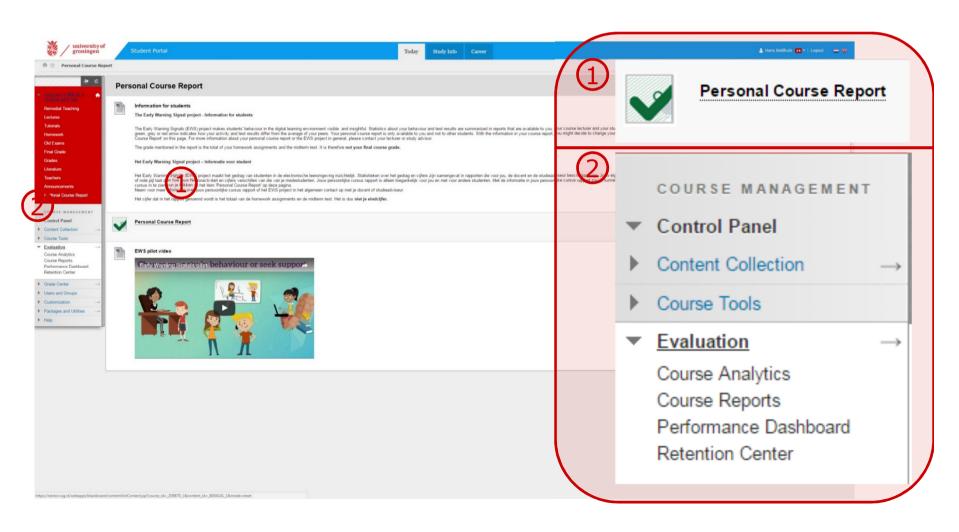


Location: student portal intranet



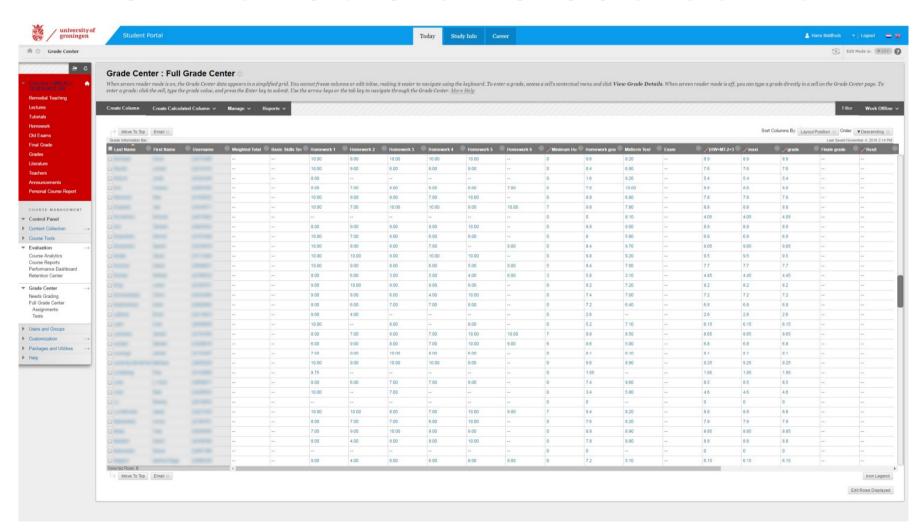


Online course environment



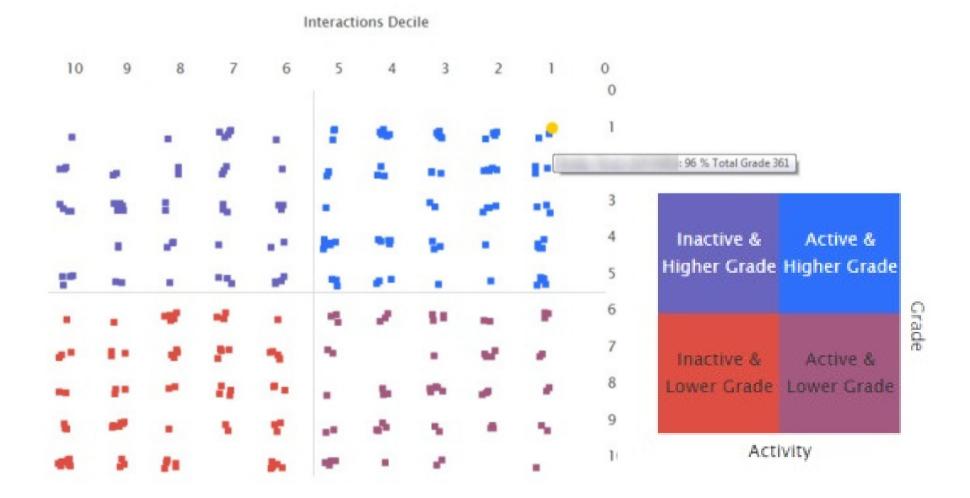


For instructors: Grade Center





Activity & Grade Matrix





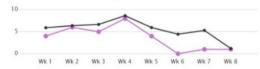
Personal report for students

Your Total Activity Compared to the Course Average





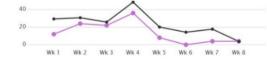
Accesses vs Course Average



Submissions vs Course Average



Interactions vs Course Average



Time in Course vs Course Average





Preliminary results (survey)

- > students
 - support A4L (96%)
 - become active in course
 - some become alert on correct study choice
 - higher pass marks (but not conclusive)
- > instructors
 - earlier & correct detection invisible students
 - effective remedial teaching
 - maybe better grade distribution
- > study advisor
 - earlier contact
 - study advice (effective studying)



Discussion