Action plan Zone 'Secure and reliable use of learning analytics'

Team lead: Theo Bakker

In the Acceleration Plan (May 2018), the objective of the 'Secure and reliable use of learning analytics' zone is formulated as follows:

1. Preconditions (terms and conditions)
2. Members of the team are put to work
3. Development of facilities for other institutions
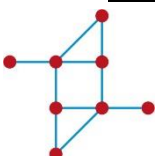4. Link with evidence-based educational innovation
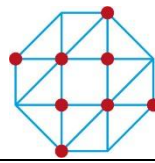
The objectives

- We provide (infrastructural) preconditions that enable institutions to control the storage and analysis of learning analytics, with attention for privacy and security;
- The members of the Acceleration team help and inspire each other to use learning analytics to gain insights into the quality of their education and the study progress of students;
- We contribute to the (further) development of facilities that are also useful for other institutions;
- There is a clear link with the Evidence-based educational innovation with ICT zone, in which research on the effectiveness of the use of learning analytics is conducted.

Annual plan 2019 - 2020

The year plan of the zone for 2019 - 2020 contains the following activities:

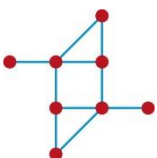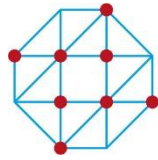| 1. Study journey SURF	Study journey Learning Analytics to the United Kingdom
2. Data Science team assignment	To let each team member experience what is needed for a successful data science project in higher education, that makes reliable use of learning analytics. Each team member describes a current learning analytics project within his own institution on the core aspects. We use a number of models: An analytics model of OU UK, the Maturity model of Deloitte/UU, and the Analytics model by Gartner. In the autumn of 2019, we will link the results to research by Justian Knobbout (doctoral research by HU) on *analytics capabilities* in higher education.
3. National themes	*GDPR/Privacy*: National Code of Practice Privacy & Ethics *Research data*: Combination of national data and institution data for scientific research National Cohort Research for higher education (Nationaal Cohorten Onderzoek voor hoger onderijs) *UFO/Function House*: Development/refinement of personnel profiles for data science projects

	• *Statistical handbook + simulation data*: A handbook for statistical tests on educational data + a simulation data set to be used between institutions for demonstrating algorithms • *HOSA*: Connection with the Higher Education Sector Architecture
4. Knowledge exchange	With national forums, working on related topics: SIG BI, SIG Learning Analytics, Acceleration Agenda Evidence-Based Education, HORA 2.0/SERA, NRO, OCW, VSNU, VH, and with ongoing initiatives at educational institutions in higher education

Conditions for success are good cooperation between team members, alignment with current issues in educational institutions that can be improved with learning analytics, coordination of activities and end products, cooperation with current initiatives in higher education, and a number of concrete results in the short term.

Method, distribution of activities, results

Our main approach is agile. There will be a monthly meeting in Utrecht. The SURF-wiki is used to record project data; activities are distributed, planned, and tracked via JIRA. We use Slack for internal communication. In the meantime, team members come together who work on similar themes (e.g. Privacy, Strategic positioning).

|	Who	What	Result
1. Study trip SURF	All team members	• Post-discussion outcomes and common fine-tuning of the annual plan (completed) • Use of the material on other work tracks	Fined-tuned annual plan.
2. Data Science team assignment	All team members	• Common formats for identifying parts • Monthly meetings in which we discuss and process results (Agile) • Working visits of the team lead and connector to the participants	Cookbooks for organizing framework conditions for data science in educational institutions.
3. National themes	1. Theo Bakker (lead), Ronald Ettema, Jan Tjeerd Green woods 2-5. Theo Bakker, Marieke de Wit	• Connection with current initiatives SURF, VSNU/ VH, VU, NRO • Workgroups per sub-area with team members	1. National Code of Practice Privacy & Ethics 2. National Cohort Research HE through CBS 3. New UFO Job Profiles for data scientists 4. Handbook + sample data set 5. 5. APIs with common systems
5. Knowledge exchange	Theo Bakker, Marieke de Wit		Overview of affiliated projects/initiatives
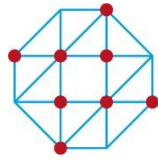
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Onze planning op hoofdlijnen:		2019				2020			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
A. Studiereis SURF		✈							
B. Data Science teamopdracht	Data science project eigen instelling / teamopdracht	⬇	🗄	📄	⦿	🌱	⚖		
C. Landelijke thema's	1. Code of Practice	🪧							
	2. Onderzoeksdata (met NRO)		🏛						
	3. Statistisch handboek onderwijsdata + simulatiedata			🤝					
	4. UFO/Functieprofielen			👥					
	5. HOSA				🗄				

D: **Knowledge exchange with other forums** takes place continuously with SIG BI, SIG Learning Analytics, the Acceleration zone Evidence-informed education innovation with ICT, HORA 2.0/HOSA, NRO, OCW, VSNU, VH, and current initiatives at educational institutions in higher education.
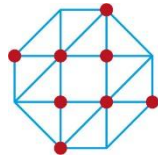
Acceleration plan
Educational innovation
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Team assignment 2019 Q1 to 2020 Q2

|	2019 Q2		2019 Q3	2019 Q4	2020 Q1	2020 Q2
Thema's *	Strategie Organisatorische randvoorwaarden	Privacy & Ethiek Beveiliging Datamanagement	*Data:* Verzameling, manipulatie & combinatie	*Data:* Analyse, modellering & rapportage	*Data:* Toepassing in strategie, beleid & praktijk	Procedures & governance + aanscherping werkwijze + strategie
Team	*Iedere deelnemer kiest een **actueel studiedata project van de eigen instelling**, en beschrijft en analyseert dit op de hierboven genoemde onderdelen. Als groep werken we dit uit naar een gemeenschappelijk kader voor het veilig en betrouwbaar benutten van studiedata.*					
Opdracht	Beschrijf de strategische positionering. Organiseer de randvoorwaarden ten aanzien van procedures, processen, HR en IT.	Regel formele toestemming om data te verwerken. Organiseer de beveiliging van het project en het datamanagement.	Verzamel de nodige data, manipuleer die naar een dataset die gebruikt kan worden voor analyses.	Analyseer de dataset, maak eventueel een model, en maak hierover een rapportage.	Gebruik de inzichten op verschillende niveaus in de instelling en evalueer de resultaten.	Organiseer de borging van de uitkomsten binnen de instelling en de lessons learned uit het voortraject.
Rapportage	*De rapportagevorm zal in onderling overleg nader bepaald worden; toetsen van deelproducten via instellingen die NIET in het team zitten en mee willen doen*					

* *De verwachting is dat deze activiteiten in een iteratief proces tot stand zullen komen; het kan zijn dat het tempo tussen instellingen kan verschillen.*

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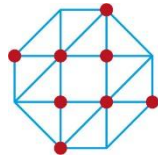
Implementation team   assignment per institution

Project ideas for each institution have been completed in such a way that together they cover all applications of learning/student analytics.

| Level	Descriptive	Diagnostic	Predictive / Prescriptive
Institution	EUR - Student Analytics VU - Student Analytics OU - Info Hub OU - LA infrastructure	EUR - Student Analytics VU - Student Analytics OU - Info Hub OU - LA infrastructure	VU - Student Analytics OU - Info Hub
Programme	HL - Dashboard study progress (courses) Hanze - Digital Contact Time BUas - Dashboard for teachers	VU - Teaching Analytics Hanze - Digital Contact Time BUas - Dashboard for teachers	VU - Teaching Analytics
Teacher/Student/Student supervisor	HL - Dashboard study progress (students) TiU - Dashboard for teachers BUas - Dashboard for teachers Hanze - eStudybooks	RUG - Early Warning (study advisers) TiU - Dashboard for teachers BUas - Dashboard for teachers Hanze - eStudybooks HAN - study success & study progress	RUG - Early Warning (study advisers) HAN - study success & study progress Hanze - eStudybooks
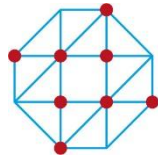
Acceleration plan
Educational innovation with ICT

Data science

Actiegerichte inzichten
- Trends over onderwijs en achtergrond-kenmerken van (groepen) studenten
- (Prognose)modellen
- Knelpunten in het onderwijs, curriculum, instroom of doorstroom
- Dashboards, onderzoeksrapporten, datasets
- → Impact
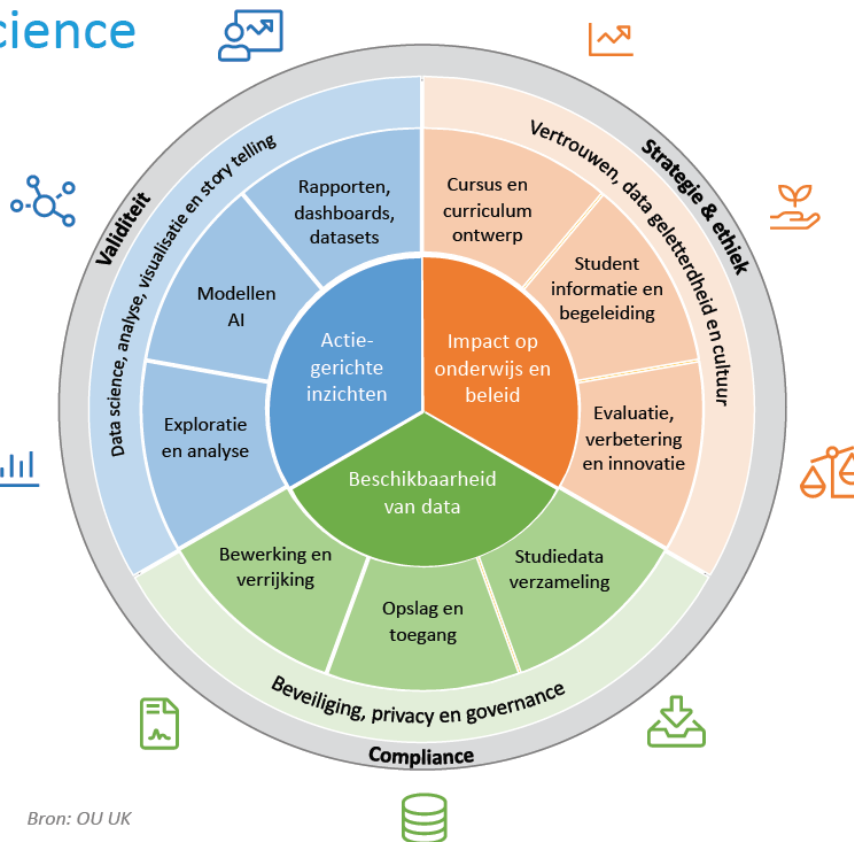
Bron: OU UK

Impact
- Advies voor onderwijs ontwerp, voorlichting/ informatievoorziening of student-begeleiding
- Analyses van interventies / effectstudies
- → Dataverzameling

Beschikbaarheid
- Verzamelen en structureren (architectuur)
- Opschonen & combineren
- Verrijken
- → Analyses

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Wheel diagram labels:

Validiteit — Data science, analyse, visualisatie en story telling
Strategie & ethiek — Vertrouwen, data geletterdheid en cultuur
Compliance — Beveiliging, privacy en governance

Rapporten, dashboards, datasets
Cursus en curriculum ontwerp
Modellen AI
Student informatie en begeleiding
Actie-gerichte inzichten
Impact op onderwijs en beleid
Exploratie en analyse
Evaluatie, verbetering en innovatie
Beschikbaarheid van data
Bewerking en verrijking
Studiedata verzameling
Opslag en toegang

Acceleration plan
Educational innovation with ICT

Maturity Model Bedrijfsvoering

Inschatting niveaus

- Ambitie
- Huidig niveau

Fictief voorbeeld

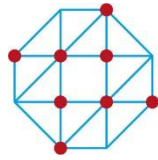| Niveau		Strategie & Beleidsvorming	Mens & Cultuur	Organisatie	Governance & sturing	Informatie-technologie
4	(Externe) keten	Ketenstrategie (incl. toeleverende instanties, landelijke samenwerking)	Aansluiting en draagvlak met ketenpartners	Integratie in de gehele keten	Sturing op levering en effectmeting in de gehele keten	Optimaal geautomatiseerd met ketenpartners
3	Instelling	Integrale strategie	Competenties & professionalisering op interne ketens	integratie van ontwikkeling en gebruik van analytics in de instelling	Instellingsbrede sturing op levering en effectmeting	Integrale standaarden & services binnen instelling
2	Afdeling / Faculteit	Afdelings-strategie	Ontwikkeling competenties binnen afdeling / project	Ontwikkelproces analytics binnen afdeling / project	Aansturing & monitoring binnen project	Architectuur en functionaliteit op afdelingsniveau
1	Pionier	Ad-hoc beleid i.h.k.v. een pilot	Inhuur van competenties	Proof of Concept	Eenmalige projectorganisatie	Eenmalige oplossingen en geen standaard
Dimensie		Strategie & Beleidsvorming	Mens & Cultuur	Organisatie	Governance & sturing	Informatie-technologie

Principes

- De **zwakste schakel** bepaalt het niveau van de totale ontwikkeling
- Als de gevoelde **urgentie** in instellingsstrategie, compliance of ethische randvoorwaarden hoog is, stijgt het niveau waarnaar gestreefd wordt.
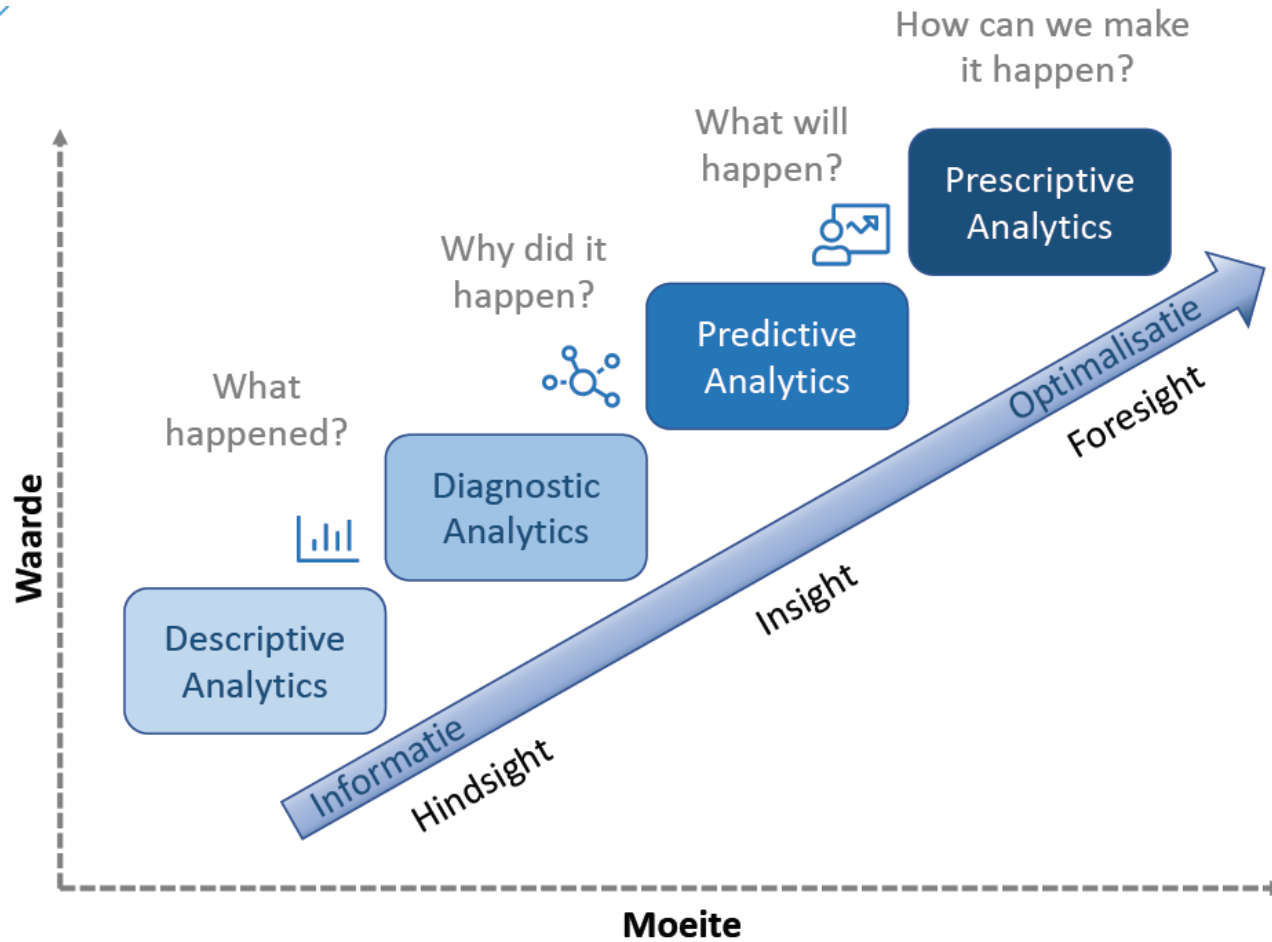
Bron: BMM, Deloitte/UU

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