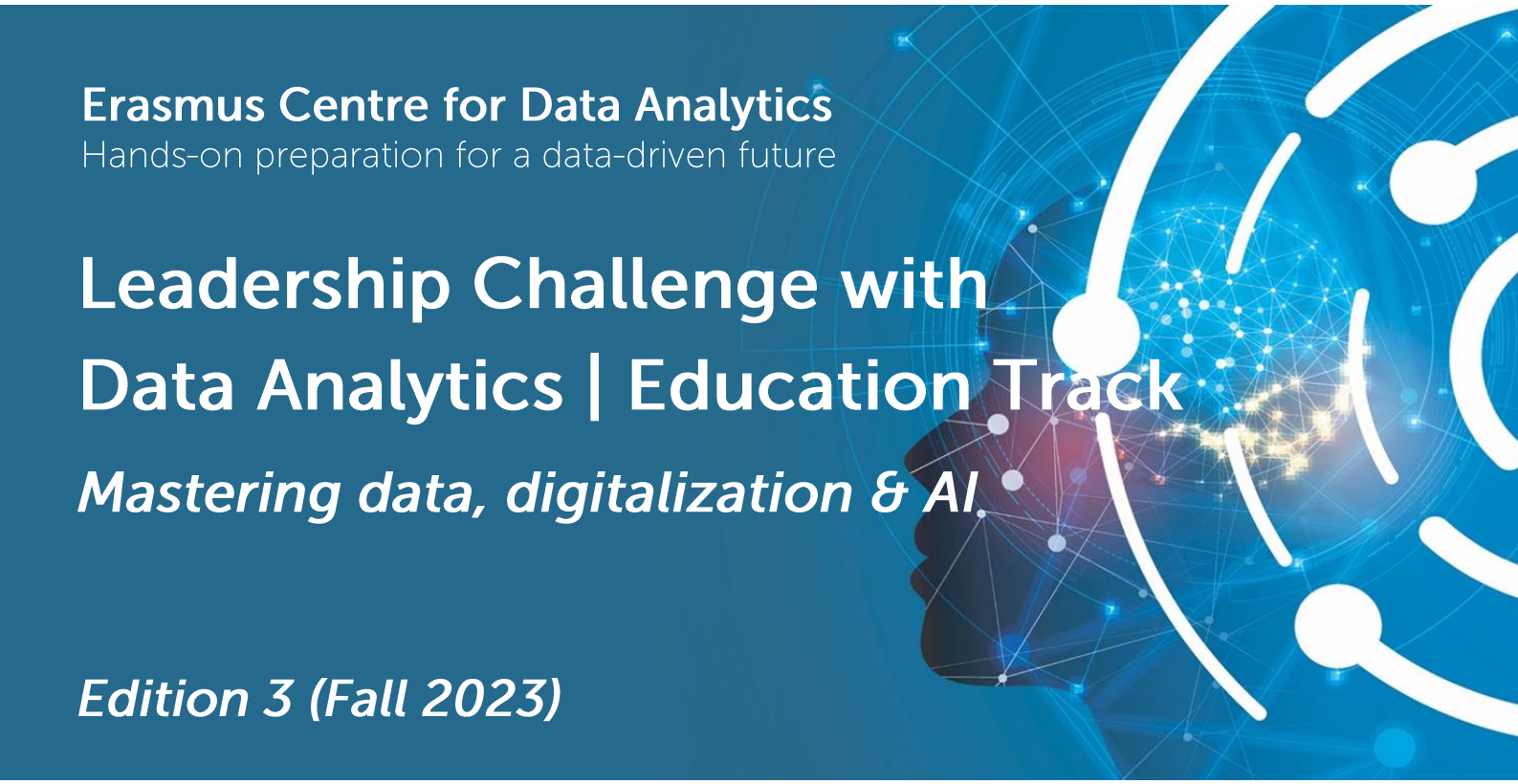
Erasmus Centre for Data Analytics

SURF



Erasmus Centre for Data Analytics

Hands-on preparation for a data-driven future

Leadership Challenge with Data Analytics | Education Track

Mastering data, digitalization & AI

Edition 3 (Fall 2023)

Last update 4-4-2023

powered by

Acceleration plan
Educational innovation with ICT

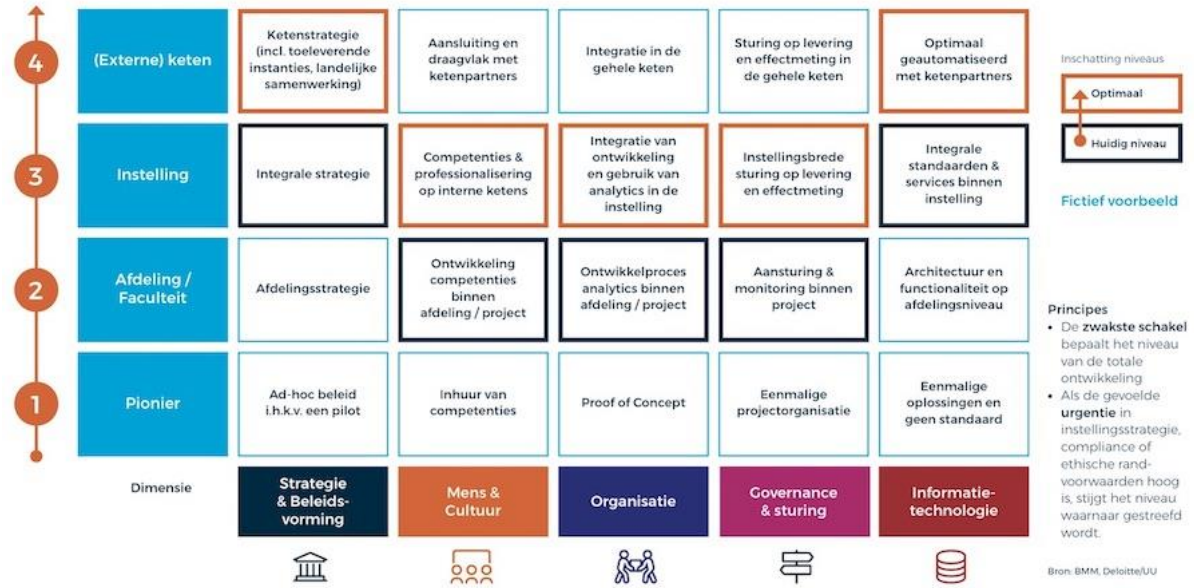
Standard language of the programme and materials/slides is in English.
In case the participating teams consist of Dutch speakers only, the programme will be taught in Dutch – except for modules with non-Dutch speakers.

1. Introduction

The use of data and application of analytics and artificial intelligence (AI) will without any doubt change the way we design and operate our Higher Education. As a matter of fact, today it is already changing our educational institutions. But what is needed to make analytics and AI valuable parts of the way we organize our education? Many experts believe that successful transformation of our Higher Education hinges on five pillars: strategy, hr and culture, organisation, governance and compliance, ICT.

This insight will require a whole new set of skills and ways of working. Understanding and working with new technologies for (big) data collection, analysis and prediction will not create only huge opportunities, but also ethical, legal, privacy and technical issues concerning every part of the organization. It will influence the relationship with our students, redefines how new programs and services are developed, changes how operations are managed, and provides the basis for new service offerings. It will demand a data driven focus of everyone involved in the organization.

This training programme combines the science of business, data, and societal perspectives. Participants – who usually join with a **team of 3 to 6 persons** - acquire a broad knowledge and diverse skills related to data analytics, which may lead to new insights that drive new value creation opportunities in the context of higher education. Such learning by doing manifests itself along two dimensions: across multiple levels (individual, group) and across multiple functions.



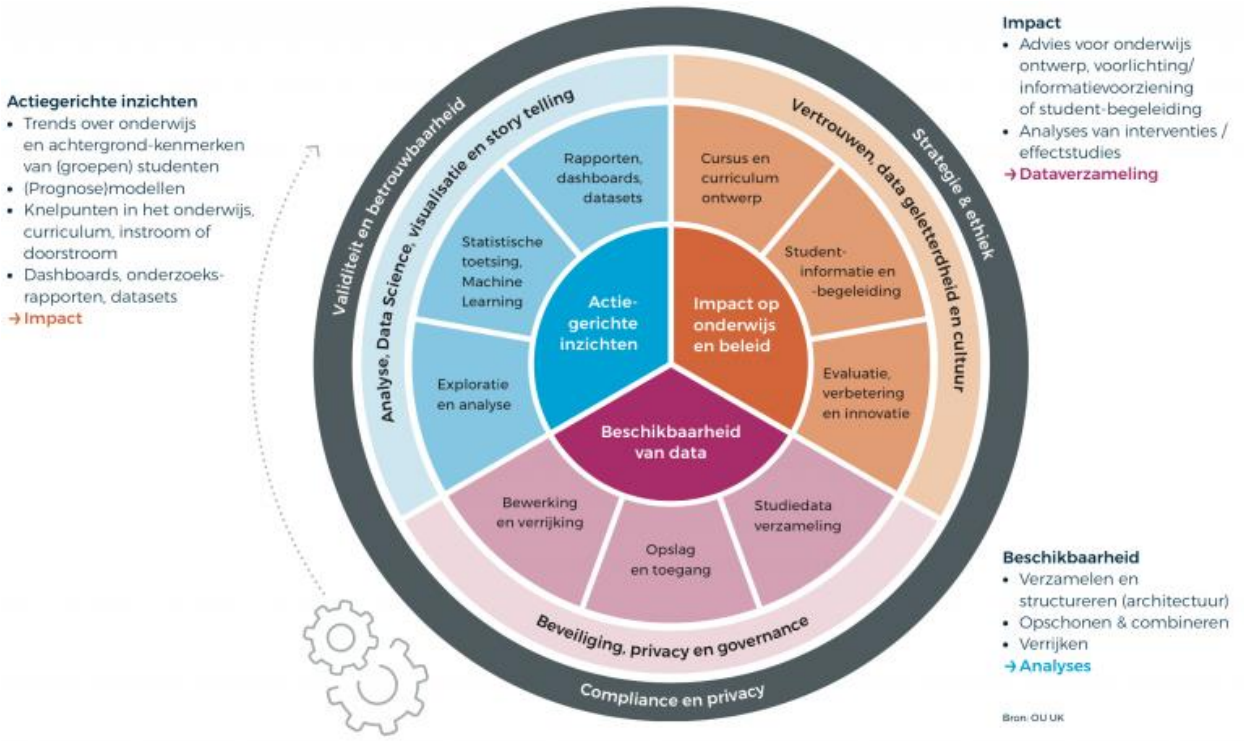
Foundations for becoming a data-driven organization in Education

2. Learning Objectives of the programme

The programme has six learning objectives:

1. To stimulate higher education to achieve value from data (educational, alumni and campus operational data) to improve the quality of the education, optimize operations and create personalized services and to innovate.
2. To understand the foundations for becoming a data-driven organization, as a basis for exploiting insights from analytics and AI.

3. To learn the **complete data analytics lifecycle**, from data exploration, data engineering, data analysis, data visualization up to presenting the insights.
4. To discover new ways to apply data technologies to design and implement innovative and value creating applications.
5. To create mutual understanding between users, policy makers, data scientists and IT units.
6. To broaden participants understanding of psychological factors, privacy, security, ethics, and accountability and to stimulate critical thinking.



The wheel of data science in Education

3. Unique elements of the programme

The programme is developed and offered by experts from education. It offers the following unique elements:

1. Holistic set-up with wide range of topics that will be covered
2. It plays a key role in the organisational transformation towards becoming a data driven higher education, as organisations discover in teams how to approach this challenge by doing & experiencing.
3. It is action based with a hands-on approach, by developing and improving organization specific use cases as part of an action learning project with a personal team coach.
4. It engages the participants in multidisciplinary teams with executives and supervisors to facilitate implementation of the applications in the organization. This support team building.
5. It inspires participants through peer-learning and an outside-in perspective.
6. It supports the organization in exploring its data analytics maturity
7. It offers a separate track for executives

Serious Lego Workshop during kick-off of the programme

4. Participants

The programme is aimed at multi-disciplinary teams from or working in the context of (higher) educational institutes (MBO-HBO-Universities) composed of 3 to 6 persons, with representatives coming (ideally) from the following domains in the organization:

- Data user / business (for example education programme designers, managers, analysts, teacher, financial controllers, policy makers)
- Project manager / translator
- Information (for example CIOs, CDOs, information managers, architects, BI analysts, data officers, data engineers, data scientists)
- ICT (for example IT managers, BI developers, IT specialists)

We encourage to involve other relevant stakeholders, such as students and data privacy officers, as part of working on the action learning project.

5. Executive Track

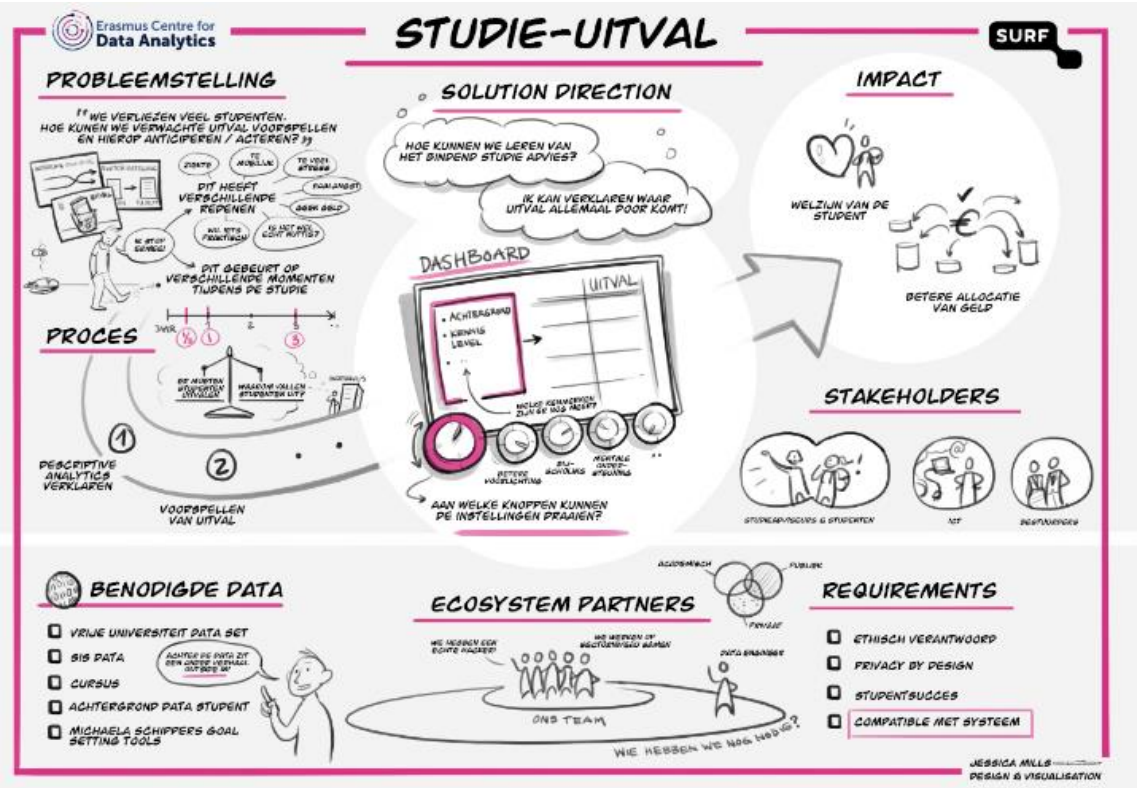
A member from the executive board or institute (internal sponsor) joins the team during

- the executive introduction track during the kick-off day. Participating executives can discuss leadership challenges and dilemmas in how to transform towards a data driven organization. An introduction and summary are provided of the programme. Hereafter they can join the welcome dinner with participants of the programme.
- The final closure event of the programme, where teams present their final product, and the winning team is selected. Hereafter they can join the closing dinner.

6. Action learning project

Participating teams bring their own use case (with data sets) to work on during the programme, as part of an action learning project. Here we apply the concept of think big, start small, scale fast. Previous alumni teams have worked on several interesting action learning projects towards a proof of concept, applying all the learnings of the programme. In many cases, these were followed up by implementation into the organization. As an example, in 2021 a team with representatives from Universities and Hogescholen developed a data driven approach towards analysing dropouts of

students from a specific programme, towards creating a predictive model to anticipate expected dropouts. Starting points of the solution were to combine different types of open data and institute specific data sets. Privacy by design and combining human decision making with machine suggestions to properly weigh up ethical dilemmas were incorporated. This is visualized in the figure below



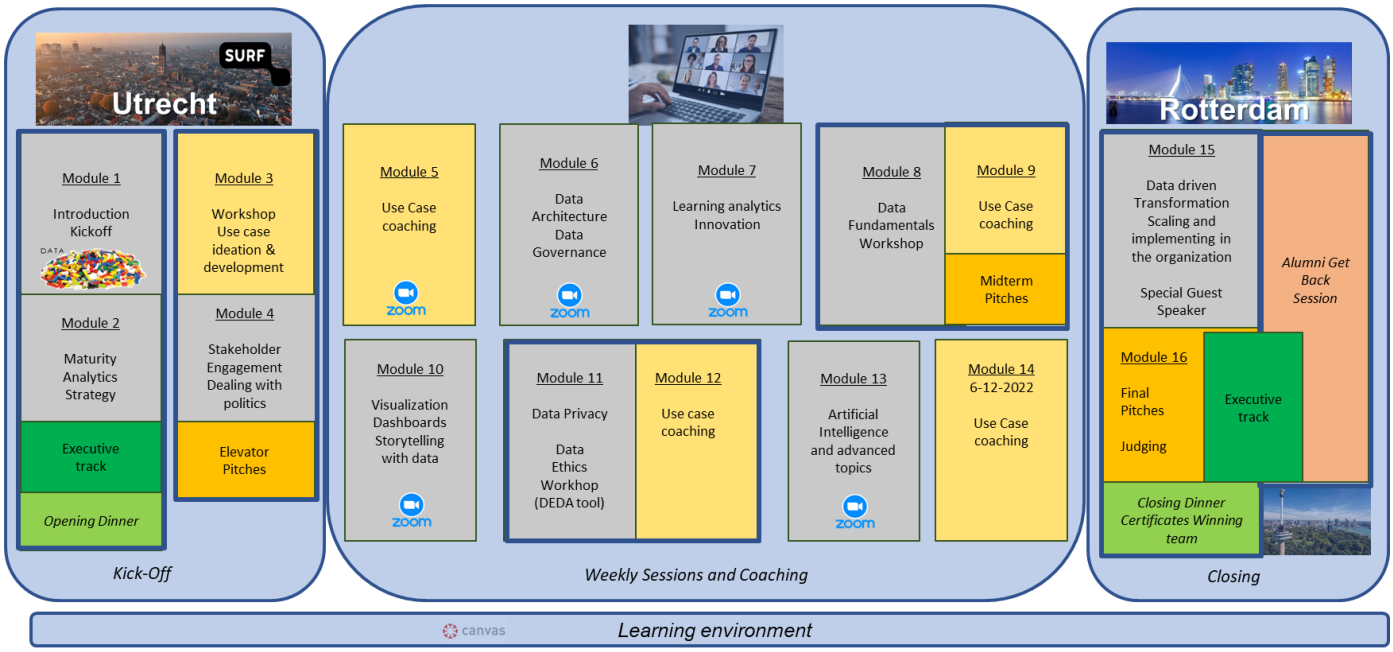
Example of use case visualization (source team Acceleration plan, Zone Secure and reliable use of education data, 2021)

A use case workshop in the beginning of the programme provides a solid basis for the definition of the action learning project. During the programme four coaching sessions are organized to discuss the progress of the action learning project and provide teams with suggestions and feedback on development of their case.

7. Programme Design

The third edition of this 8-day programme starts in October 2023[1]. This edition will be blended[2]. The schedule is included below [*last minute changes may apply, always consult Canvas*]. The programme is based on a combination of twelve modules with presentations, group activities and in class exercises, four use case coaching sessions and a track for executives. The programme features five lunches and two dinner sessions.

[1] *Depending on number of registrations*
[2] *Depending on Covid measures at that moment*



Kick-Off (Utrecht)

Module	Topic	Subtopics	Date	Time
1	Introduction & kick-off	• Welcome SURF: why and context: - importance of digital & data - student wellbeing and success • Introduction to ECDA & programme	3-10-2023	9.00- 9.30
1		• Serious Lego workshop: get acquainted with your team, other teams and the use cases via Lego	3-10-2023	9.30-12.30
1	*Lunch*		3-10-2023	12.30-13.30
2	Data analytics maturity	• Introduction to use of (educational) Data in Education • Discuss results Maturity Measurement per team	3-10-2023	13.30-14.30
2	Data analytics strategy	• Data driven strategy • Data driven and platform business models • Leadership in data analytics	3-10-2023	14.30-17.00
2	Executive track	• Leadership challenges in transforming towards a data driven organization • Introduction and summary of the programme • Discussion among participating executives	3-10-2023	16.00-17.15
2		• Welcome Dinner (participants and executives)	3-10-2023	17.15-20.00
3	*Use case workshop*	• Alumni team presentation • Workshop – action learning project use case development using Miro boards	4-10-2023	9.00-12.30
3	*Lunch*		4-10-2023	12.30-13.30
4	Stakeholder Engagement	• Stakeholder engagement strategies • Dealing with Politics and Resistance	4-10-2023	13.30-15.30
4	Use case elevator pitches	• Introduction to coaches • Pitch presentations • Visual development for use case	4-10-2023	15.30-17.00

Weekly sessions

Module	Topic	Subtopics	Date	Time
5	*Use case coaching*	• *Coaching session* • *Work as team on use case* • *Plenary discussion and sharing learnings*	12-10-2023	*9.00-12.30*
6	Data Architecture & governance	• Data architecture • Data IT ecosystems • Data governance – how to manage study data	2-11-2023	9.00-12.30

47	Data entrepreneurship & innovation	• Best practices of innovative use of data and analytics incl:
		  ○ Student analytics
		  ○ Learning analytics & didactics
		• Some example projects, such as Reducing study dropouts with the data-team method
			9-11-2023	9.00-12.30

8	Data Fundamentals Workshop	• Wheel of data science • Data science methods • Practical hands-on workshop starting with example dataset and working on own challenge	16-11-2023	9.00-12.30
8	Lunch		16-11-2023	12.30-13.30
9	*Use case coaching*	Data Fundamentals Workshop (continued) *Coaching session* • *Work as team on use case* • *Mid Term presentations*	16-11-2023	13.30-17.00
10	Visualization Dashboards storytelling	• Visualization techniques • Dashboards and Digital Twins • Examples of visualization in educational context • Storytelling with data	23-11-2023	9.00-12.30
11	Data Ethics workshop	• Introduction to data ethics and data privacy • Know about ethical issues in your everyday data projects. • Know how to constructively solve practical cases with the help of ethical theory. • Understand the societal relevance of data ethics. • Complying with EU GDPR	7-12-2023	9.00-12.30
11	Lunch		7-12-2023	12.30-13.30
12	*Use case coaching*	• *Coaching session* • *Work as team on use case* • *Plenary discussion and sharing learnings*	7-12-2023	13.30-17.00

Module	Topic	Subtopics	Date	Time
13 	Artificial Intelligence and advanced topics	• Introduction to AI / AI fundamentals / demystifying AI • Examples of AI use cases & impact in education • Immersive Tech (AR/VR) & education	14-12-2023	9.00-12.30
14 	*Use case coaching*	• *Coaching session* • *Work as team on use case* • *Plenary discussion and sharing learnings*	*11-1-2024*	*9.00-12.30*

Programme closure day (Rotterdam)

Module	Topic	Subtopics	Date	Time
15	Data driven transformation	• Building data & AI capabilities as organization • Toward adoption, scaling & implementing the use cases • A critical perspective towards data, AI and tech in education	18-1-2024	9.30-12.30
15	Lunch	Lunch and group picture	18-1-2024	12.30-13.30
16	*Use case final pitches*	• Final team pitches, *including executives* • Feedback student panel • Judging & announcing winner	18-1-2024	13.30-17.00
16	*Closure*	• Handout certificates • Closing Dinner in City of Rotterdam	18-1-2024	18.00-21.00

8. Programme Fees

The programme fee for this programme is € 4.750 euro per person (free of VAT). This fee includes access to the online learning environment and materials, five lunches, 2 dinner sessions, a serious Lego set, and coaching as part of a team-based action learning project. Access to the executive track by an executive from the organization is part of the enrolment of teams with at least three participants.

Registration link: https://www.surf.nl/agenda/leergang-data-science-leadership-challenge-analytics-en-ai-in-het-hoger-onderwijs

9. Alumni community and wiki

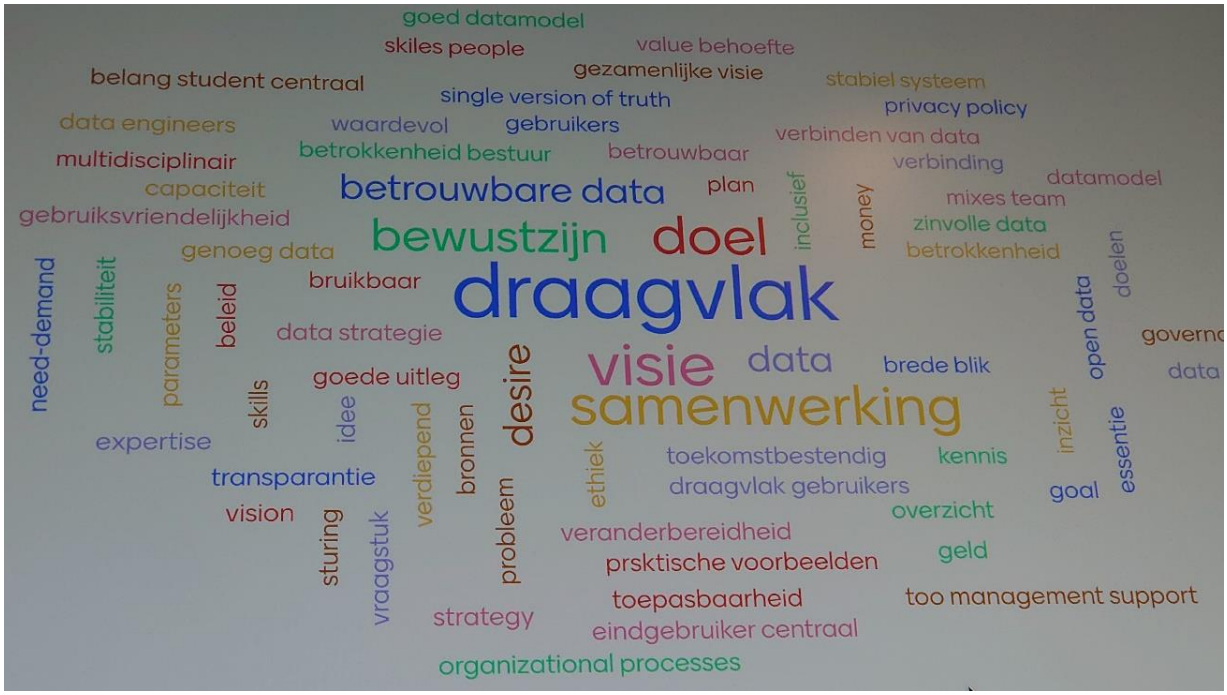
By joining the programme participants become part of a community of change makers that guide their organizations into becoming more data savvy and taking a structured innovation approach to realize value from data and analytics. All results of previous participating teams can be shared and accessed via a special Wiki page, powered by Surf.

Alumni of the programme are invited to a special alumni track, organized during the final pitch day morning. In the afternoon they can join their peers and be informed about their use case projects. In the afternoon they join the final pitch session.

10. Programme partnership & contributions

In the programme we combine research- and practice-based insights from leading professors and lecturers from several Dutch research universities and universities of applied sciences. We combine these with best practices from leading tech companies, start-ups, and learnings from the use of data and AI in the public sector. A selection of the key partnerships and guest speakers is shown below.

Winning team of the first edition (University of Groningen)



Reflection on critical aspects for realizing value from data)