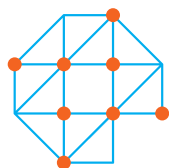


# Education data: case studies, Edition 3



July 2021



**Acceleration plan**  
Educational innovation  
with ICT



Secure and reliable  
use of education data

# Begin with a question, not an answer

TEXT: MARJOLEIN VAN TRIGT

At HAN University of Applied Sciences (Hogeschool Arnhem Nijmegen in the Netherlands), Jan Veldhoen and Koen Willem are co-responsible for producing and reporting management information. Jan works in the Student Affairs domain, where he is involved in enrolment and funding. Koen is a policy officer in the Education, Research and Quality Assurance Department. He is responsible for surveys in the Netherlands on student satisfaction and the position of alumni in the professional field. He also provides the Executive Board with management information on the quality of education.

## Where we are doing well: providing overviews

**Koen:** “A few years ago, we developed a large education data overview for the Executive Board based on accreditation data, performance figures and student satisfaction figures. At the time, the Board was seeking a way to engage in a better-informed conversation about education on the basis of data. Fellow Board members showed great interest in the overview.

We are now due for a review and would like to structure the overview more around academies and training courses. While the Board wants to know how the organisation is doing in general, an academy director sometimes needs more specific information so as to make direct decisions.”

## Where we are facing a challenge: effecting cultural change

**Jan:** “When it comes to making education data overviews, we are still influenced too much by incidents and technology. It is difficult to formulate the research question properly. Because of the scale of HAN, we have many stakeholders and often they already have a solution at hand or in mind. We must get back to first principles more often. What, exactly, is the problem that needs to be solved?”

**Koen:** “We have capable people everywhere who are very knowledgeable about the data, but the challenge lies in finding the connection. We need a cultural change. At present, decisions are often made on the basis of assumptions. Only afterwards do we consider whether they can be substantiated with data. Only if they really have to, for example when applying for a new course, do people ask for data. At that point we have to start searching ad hoc in individual sources, as we have not yet unlocked the data.”



Education Data Zone

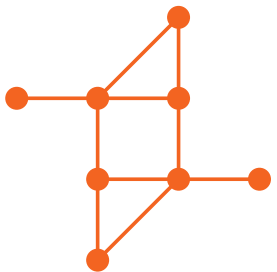
**Stakeholders and students  
have their say »**



### The ideal scenario is an overarching data analysis department

**Jan:** "It would be very helpful to establish a joint analysis department that could present an unambiguous data landscape across all domains. The good news is that everyone is open to it, so I think it will be introduced."

**Koen:** "In the past few years, our focus has been on accountability data. Although we are now on the right track, it can be difficult to manage this process. It's a challenge we're still getting to grips with. Interestingly, the pandemic has accelerated this process – suddenly people are raising questions about student wellbeing. Do we have a good picture of this? How can we contribute? We need to maintain these kinds of initiatives, otherwise it remains a case of ad hoc responses to questions. Bring the experts together and let them make sound, structured plans prompted by incidents."



**'All too often, we react to incidents ad hoc'**



Koen Willems





Soukaina Abouhssen

## Let education data work for you

TEXT: MARJOLEIN VAN TRIGT

Soukaina Abouhssen is vice-chair of the University Student Council of Vrije Universiteit Amsterdam (VU). This position gives her insight into and influence on the use of education data within her institution. She sees it as an important platform for student participation and representation.

“Last year, I was coordinator of education and research in the VU Student Council. In this capacity, I served as the permanent contact person for VU Analytics, the department within VU that deals with education data. Every month, we discussed which projects they were working on and our stance on these projects. We also ensure that the VU Analytics Code of Practice is consistent with the personal data rules applicable at VU. We review this Code of Practice annually and include students in the review process.”

### Requesting information

“As a student council, we can request the same information from VU Analytics as the Executive Board. One of the things we want to achieve is for the entry requirements for the honours programmes to be more closely aligned with the type of programme. Before our discussion with the honours committee, we asked for an analysis of the average scores for each programme so that we could compare them with the programme requirements. It is very helpful to be able to use education data for matters we consider important.”

### Plan for Success

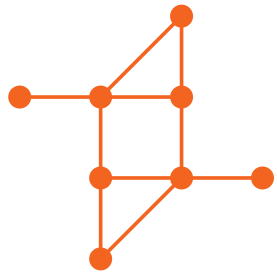
“Students who are not on the Student Council are also, albeit indirectly, affected by education data. At VU, education data is used for information purposes and tutoring. The ‘Plan for Success’ project was recently launched to help students plan their studies. I study pharmaceutical sciences and religious sciences and I think it would have helped me a lot had there been such a dashboard for me from the start of my studies.”

### Integrity

“The data is treated with integrity. That said, more students could be made aware of the possibilities of using education data analysis for their own research. Not everyone knows that VU Analytics has developed a simulated dataset that students can use if they have an interesting query!”

### Insights for advocacy

"In my opinion, many more institutions of higher education in the Netherlands should start using education data. It provides many insights for student participation, representation and advocacy. VU Analytics has also, for example, made forecasts of student intake in the coming years. It's a good basis for conversations about the education of the future."



**'Every month,  
the Student Council  
discusses all education  
data projects with  
VU Analytics'**



# A support officer should be a reliable intermediary between data and lecturers

TEXT: MARJOLEIN VAN TRIGT

Iwan Wopereis is an educational technologist at the Expertise Centre for Education (ECO) of the Open University (OU) in the Netherlands and a member of the Professional development zone (zone Docentprofessionalisering). In this capacity, he and other members of the zone developed the Learning Analytics Lab.

"The Facilitation and Professional Development Acceleration Zone (its full name) develops work packages that allow institutions to independently start a living lab – a series of meetings around a theme in the context of lecturers' professional development." The Learning Analytics Lab, which the Education Data Zone has contributed to, has been available since February 2021.

## Introduction to learning analytics

Participants of the Learning Analytics Lab will be introduced to the terminology and concepts of learning analytics. The idea is for them to apply the knowledge gained in the living lab at their own institution. Iwan Wopereis: "The design of the living lab is motivational. The creative work must be in line with what is available within the institution. The facilitator, who is in charge of the living lab, will identify the possibilities beforehand. What can be gained from a digital learning environment? How does the privacy officer view the use of learning analytics?"

## Reliable intermediary

Wopereis is happy to take on the role of facilitator within the OU. A lot of pioneering research on learning analytics is being conducted at the OU, but as an educational support officer he has not had any experience with it yet. "I think one of the most interesting aspects of learning analytics is that it allows you to use a vast amount of data to come up with different insights, depending on your question. You can't just 'drop' this amount of data on lecturers and students. It is the task of the educational support officer, together with the creator of a dashboard, to filter the data into comprehensible information. You should, as a data-literate educational support officer, be a reliable intermediary between data and lecturers/students."

## Embed learning analytics in the design

Wopereis would like to help lecturers 'embed' learning analytics in the design of a course. "At the OU, our focus is on designing programmes and courses well in advance, as there are relatively few opportunities for improvisation after rollout. A lot of didactic support is embedded in the material – advance organisers, summaries and soon dashboards too. They provide insight into study behaviour and are therefore of interest for personalised guidance. I would like to standardise that for each programme and then for each type of course."

He also sees a role for the educational support officer in the professional development of lecturers. "I want to help them decide when to use learning analytics, what data to make available and what explanations to include. You could see it as the next step towards flexible, distance university education."



Iwan Wopereis

# The next step is to analyse whether a programme delivers what it is supposed to in terms of content

TEXT: MARJOLEIN VAN TRIGT

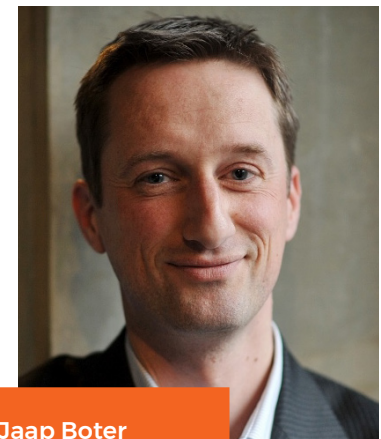
Jaap Boter is programme director of the Marketing Master's programme at Vrije Universiteit Amsterdam (VU). While he considers the use of education data valuable, he also sees room for improvement.

"In the past three years, the Marketing Master's programme delivered a remarkably high number of degrees with distinction. Examination boards keep a close eye on this, as a distinction must remain exceptional. As a programme provider, we had some ideas about why this was the case, but we did not have the necessary data to test our ideas. The analysis conducted by VU Analytics, our student analytics department, shows that it is due to a shift in intake. An increasing number of international students are enrolling in our programme – about 50 per cent at the start of the most recent academic year. When you correct for that kind of background across programmes, the effect almost disappears. Many female German students in particular are motivated, focused on getting high marks and work very hard at their studies. The question is what you do with that knowledge. One of the things we do is provide guest lectures in sustainable career development to prevent students from taking on too much work, both now and later.

Education data can help to keep track of the bigger picture. It is good to keep a close eye on the situation by checking impressions from the lecture room against education data. As programme director, I make sure we collect the right data, such as course evaluations and grades, and I ask VU Analytics to produce reports based on that data. We then discuss the analysis with lecturers to come to an opinion about it. While that is useful, you should also be aware of where the data comes from, the purpose for which it was collected and its limitations. If we can get a better handle on numbers thanks to student analytics, shouldn't we also be able to improve the raw materials, the data?

VU Analytics does an excellent job, but I see a mismatch with the objectives of a programme. Subject grades can be used to indicate general progress. The next step, Student Analytics 2.0, is to analyse whether a programme delivers what it is supposed to in terms of content. What do you want students to be able to do, where do you measure that and can you also record and analyse it?

Study programmes have final attainment levels and you should be able to justify these with an assessment matrix, but partial grades are not recorded in student administration systems. A lecturer can only enter a final grade in the registration system. In fact, you want to be able to see throughout the programme how someone scores on components like 'collaborative learning in teams' or 'presenting'. Then you know whether you're achieving the objectives and, for example, which groups of students score better in these components. Paradoxically, it is by collecting and analysing more partial grades that I intend to show students that ultimately, there is more to life than figures."



Jaap Boter





Lydian Medema

## Education data enables student advisors to get to know students remotely

TEXT: MARJOLEIN VAN TRIGT

Lydian Medema is project manager for the Early Warning Signals project of the Faculty of Science and Engineering at the University of Groningen (RUG). She is pleased with the positive reactions of students and student advisors to the project.

### What was the inspiration for the Early Warning Signals project?

"In the 2017-2018 academic year, a large survey took place that showed that the study results of international students at our faculty lagged behind those of students with a Dutch pre-university education. This resulted in a number of projects, including this one. There are now four people on the project team, as well as advisors."

### How is the project coming along?

"Two colleagues are currently analysing all the data at our disposal. This has to be done thoroughly, as much of the data we use as input was once output from something else. This means that the data is not as ready for use as you would like. Sometimes data is not conveniently or consistently stored, for example. It makes the process very time-consuming."

### Who is the project for?

"All first-year students of our faculty are given insight into their personal course report. It shows, for each course, how they are doing compared to the group average. We make overviews of the intermediate results of subjects for student advisors. And for lecturers, there will be a dashboard later with feedback on their course. Not all programmes are participating yet – sometimes this is due to the organisation of education and sometimes to a lack of data. Our aim, ultimately, is to expand this project to other faculties."

### What does it deliver?

"Valuable information. When I was a student, there were lists of grades in the lecture hall. There is still a need for this, especially for students who are used to a different grading system. They may be accustomed to being assessed in relation to the group. Getting an 8 may not say much in itself, but it says more when they know the average was a 6.5."



Lydian: "Findings from the reports we provide to student advisors suggest they seek more contact with students. Obviously, they want to be able to offer students more than a message simply stating 'Things aren't going that well, are they?' We have therefore, together with student advisors, set up a series of workshops to guide students. Common questions are dealt with in groups, for example. We will expand this in the next academic year."

#### **What do the student advisors think about this?**

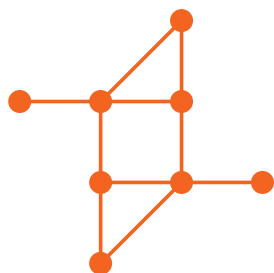
"They are mostly enthusiastic about these workshops. It provides them with a lot of extra information, especially at the beginning of the academic year. As a student advisor, you normally don't know anything until the first results on the subjects are available in mid-November. Now, they have information about the students earlier, which is much appreciated. This academic year has been difficult because so much had to be done remotely. It is not as easy to get to know the students personally. Although we cannot make up for the lack of personal contact with data, it was good that we set out on this path at a time like this."

#### **What are you most proud of when it comes to the use of education data?**

"I'm very proud of the positive response to this topic. We are all eager to continue on this path."

#### **What is your 'ideal situation' and what does it require?**

"Student advisors currently get their sources from different systems. It would be better to combine these so that an advisor has a complete overview for each student. Ideally, there should be a little flag next to the individual students you should be looking at and a button saying: 'Get in touch with this student'. Our faculty is growing and the groups are getting bigger. As a first-year student, you may feel lost in the crowd. My hope is that they can be assured that this is not the case, that they are truly seen and that there is support for them, no matter what they are struggling with. And that everything we do shows that we are thinking of them."



**'Voor studenten die een ander beoordelingssysteem gewend zijn, zegt een 8 soms niet zo veel'**



# Use education data to enhance competences, autonomy and connectedness

TEXT: MARJOLEIN VAN TRIGT

Maciej Szymanowski is associate professor of Marketing at the Rotterdam School of Management (RSM) of Erasmus University in Rotterdam. He wants to use education data to ensure that students feel sufficiently challenged, autonomous and connected.

"We are only beginning to see what is possible with education data. I am lead researcher on two platforms for online learning at RSM, one of them aimed at personal development and the other at preparing master's theses. In my class, I have students take a personality test and show them how they score compared to their peers. We also ran a pilot with an algorithm that created teams based on personality traits. Only afterwards did the students learn that the algorithm maximises diversity within the teams. A text analysis of the debrief they had afterwards showed that the most frequently used word was 'different'. And that was precisely the learning objective – to make them realise how they differ from each other and how that affects their work attitude."

## Technology and didactics

"Online learning environments are the biggest obstacle to data-driven personal communication with students. They are designed according to the principles of campus education: one person communicating with many. It is a challenge to design a dashboard that not only works well technically but also minimises the barriers to getting started with interventions. You don't want to simulate the entire online learning environment, but neither do you want students to have to click endlessly to find that extra tutorial you have in mind for them based on their study progress."

Another challenge is related to teaching skills. We know from self-determination theory how extrinsic motivation can be internalised. However, the reverse is also possible. The data we show may incentivise students to do things purely for the numbers. In this scenario, education becomes less meaningful, which is the opposite of what we want. So that is a problem."



Maciej Szymanowski



### Data for competence-building

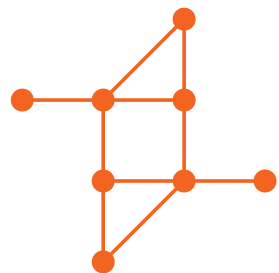
"We still have a long way to go, both in the area of online learning environments and in didactics. Fortunately, there is already a lot of deep knowledge about the didactic process. One important didactic principle is to tap into existing knowledge. Data can show both lecturers and students what knowledge is already present, where the gaps are and where the knowledge may be incorrect. Lecturers can use this data to adjust a course if it becomes apparent that knowledge is lacking in a particular area. If only one student has a knowledge gap, you could motivate that person with a text like: 'We see that 95% of the group already know a lot about this subject, but you don't yet. Here's a link to bring you up to date'."

### Challenge students, but in a motivational way

"Students need to feel challenged, but in a way that makes them confident that they can do it. They should not get the impression that 'Big Brother' is making choices for them. We must use education data to increase their autonomy. 'You have skipped a part of the text, but we find that 90% of readers who skip this part come back to it later' – that is an indication that it would be better to read that part of the text sooner rather than later, but the choice is up to the student."

### Establish social connections

"Last but not least, education data can help increase the sense of connection between students, especially now that all education is taking place online. You feel better when you know that others are taking just as long as you are to complete a difficult task. And we can use this data to establish social connections, as we did in our pilot. Students tend to work with students who are similar to them, but we know that they achieve better learning outcomes and acquire more knowledge and skills in a more heterogeneous team. We can also put them in touch with students who may not be studying the same subject, but who may be a good match for them based on their values and interests. The university as a 'Tinder' for friendship, why not?"



**'You feel better when you know others are taking just as long as you are to complete a difficult task'**

## Think big, start small, and explain

TEXT: MARJOLEIN VAN TRIGT

Rob Timmermans is portfolio holder for education in the Executive Board of the Faculty of Science and Engineering (FSE) at the University of Groningen (RUG) in the Netherlands. Over the past few years, he has learned the following lessons about the use of education data.

"As director of RUG's undergraduate school, I went on a SURF field trip to the United Kingdom. Student advisors at the universities we visited there had many tools at their disposal to track students individually and reach out to them sooner. I was impressed by all the possibilities. In collaboration with the Center for Information Technology (CIT), the Faculty of Science and Engineering devised an early warning signals project for RUG. The reason for this was that in almost all programmes, our international students scored significantly worse in the first year than other students. It became clear to us that we were detecting this too late. Now, when we get indications that students are not doing well, we try to intervene sooner. To be able to do this, we need lots of grades from mid-term tests. It ties in with our educational vision, for we have seen – based on evidence – that it is better to activate students through formative assessments and feedback, for example."

### Start small

"We are conducting the project in 10 of the 14 undergraduate programmes but also elsewhere in the university. It is difficult to get this off the ground, especially in the midst of the Covid pandemic; the technological aspect is complex. Discussions with student advisors on how to use this effectively are also ongoing. At the same time, the need for effective student guidance is more apparent than ever. Although it's not going fast enough for me, I do know that to get big results you have to start small."

### Create a basis of support

"We are accountable to the Faculty Council, as it is the faculty and the Executive Board that have put money into this project. Within the science faculty, everyone has an opinion and everyone is overworked. If we are to roll this out effectively, we have to let lecturers know how it will help students and support them in doing so. One of the prerequisites is that all lecturers should have their Blackboard gradebook in order during the first year. Not everyone is used to that."

Rob: "Student advisors, too, have a particular way of working. Still, I hear that they are recognising the opportunities this system offers. Everyone understands that this is an educational project, not Big Brother technology. The use of data must be part of your vision on education. It is listed in our faculty's strategic plan as a goal to be implemented in the next five years. In this strategic plan, funding and support are required. Because of the inherent resistance, it is important to present it in terms of something that absolutely has to be done."

### **Don't do everything just because it's possible**

"The second aim I have with education data is to improve education. At the Open University in the UK, models are improved on the basis of click behaviour. They analyse dropout moments and talk to lecturers about education that is not working well. We are not that far yet at RUG, but I would like that to happen. During the field trip, we also saw less successful examples of the use of education data. Some UK institutions monitor students' attendance at lectures and even their library visits. That's a bridge too far for us, it does not align with our values. We don't think it should be done just because it is possible. In our project, we pay close attention to privacy. Student participation bodies are involved and we make sure that nothing is done in contravention of the GDPR."

### **Management information**

"As a third goal, it is my hope that management will also be able to benefit from education data in the long run. It was difficult for us to find out what went wrong in the case of our international students. We had to put in place all kinds of systems, and it was unclear exactly where the problem was. The steps we are now taking should make it much easier to extract such information from data in the near future."





*The Acceleration Plan for Educational Innovation with ICT is a four-year programme set up by SURF, the Netherlands Association of Universities of Applied Sciences and the VSNU to bring together initiatives, knowledge and experience and to make rapid and concrete progress on opportunities for higher education. This takes place in eight different 'zones'. In the Education Data Zone, 11 institutions are involved in 16 sub-projects to make safe and reliable use of education data in higher education.*



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