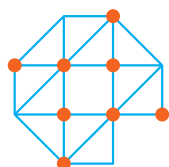


Education data: case studies, Edition 1

Building trust
and connection



Acceleration plan
Educational innovation
with ICT



Secure and reliable
use of education data



‘We can use education data to improve how we support our students in their development. We see this particularly now that we are providing distance education. Which materials are best suited to which learning styles? We have a better understanding of their profiles, strengths and weaknesses and are able to respond better to them.’

Elisabeth Minnemann,
Chair of the Executive Board
Breda University of Applied Sciences

Education Data Zone

Five team members have their say »

Use aggregated data to improve the quality of education

TEXT: MARJOLEIN VAN TRIGT

Breda University of Applied Sciences (BUAs) in the Netherlands is a small institution with five independently operating academies. Tom Konings, operations controller at BUAs and member of the Zone, explains how the use of education data at BUAs differs from the approach taken by other institutions. He also goes into the five aspects of the maturity model in more depth.

Our focus is not on individual students but on the possibility of improving the educational quality of the institution with the help of education data. We use aggregated data to provide insights relating to the decision-making process. Instead of making a decision based on gut instincts and a few conversations with students, you can use education data to look at the entire student population. Sometimes it is helpful to have all the facts at hand in order to make a decision.”

Control cycle

“As an institution, we are fairly unique in the way we use education data within the control cycle. KPIs are often agreed in a planning and control cycle, after which the institution’s performance is monitored on that basis. We use more in-depth education data analyses. If the dropout rate in the first year is relatively high, we can use this information to determine the cause. We see this as a valuable application, both for the academy directors and for the programme boards. The use of education data provides a link between the organisation’s strategic and tactical levels.”

Ongoing projects

“Within the institution, we have started working on a dashboard for lecturers that will give them more insight into groups of students who are struggling with their course and more opportunities to respond to them. An institution-wide project involving education data analysis has also been launched with the aim of improving the quality of education. For each course, we draw up a plan to improve education with the help of education data analysis. Not only do we use the insights gained from our data for this, but also data from national research in the Netherlands.”

Strategy & Policy

"We are fortunate that Elisabeth Minnemann, President of the Executive Board, understands the importance of education data. When she heard about the 'Secure and reliable use of education data' Acceleration Zone, she insisted that this was important for our organisation. Thanks to the Acceleration Plan, we have started thinking and operating on a different level. We had started extracting information from data, but not yet making data a structural part of the organisation. Although we do not yet have a strategy or policy for this, the door has been opened for us to set to work on it. We tend to make education data part of a broader vision and policy on information."

People & Culture

"I am proud of the goodwill within the organisation to make decisions based on education data. We see a growing number of enquiries from the various departments as lecturers, programme managers and secretariats start to see the added value of insight from data in making decisions. If someone in the organisation has a specific enquiry, we perform customised analyses with the education data we have. At the same time, we are still at the basic level and are not nearly as far as we would like to be."

Organisation

"At BUas, I am the person most involved with education data. We still hire a consultant for highly technical matters, but we are planning to publish an additional vacancy for a specialist in the field of data warehousing and the structuring and modelling of data. Slowly but surely, we are creating the preconditions to make education data an integral part of the organisation. This happens organically – small initiatives deliver valuable insights which in turn lead to larger initiatives."

Governance & Control

"The lawyers of our institution are currently drafting a privacy policy for research, education data and analytics. Research and data analytics have many commonalities. We can benefit from the examples of other institutions in the Acceleration Zone that already have an extensive policy on education data. SURF, too, provides material and guidance."

Information Technology

"Although our five academies work with the same system, they sometimes organise it differently. This can be problematic from the analytics point of view, as there is no single analytical solution that is the best for every academy. We use Power BI for BI (Business Intelligence) analytics. It would be fantastic if we could, in five years' time, be able to store all our data in a central structure. Such a structure would provide a solid basis for follow-up analyses or for adding and using new data."



Tom Konings

INSTITUTION: Breda University of Applied Science (BUas)

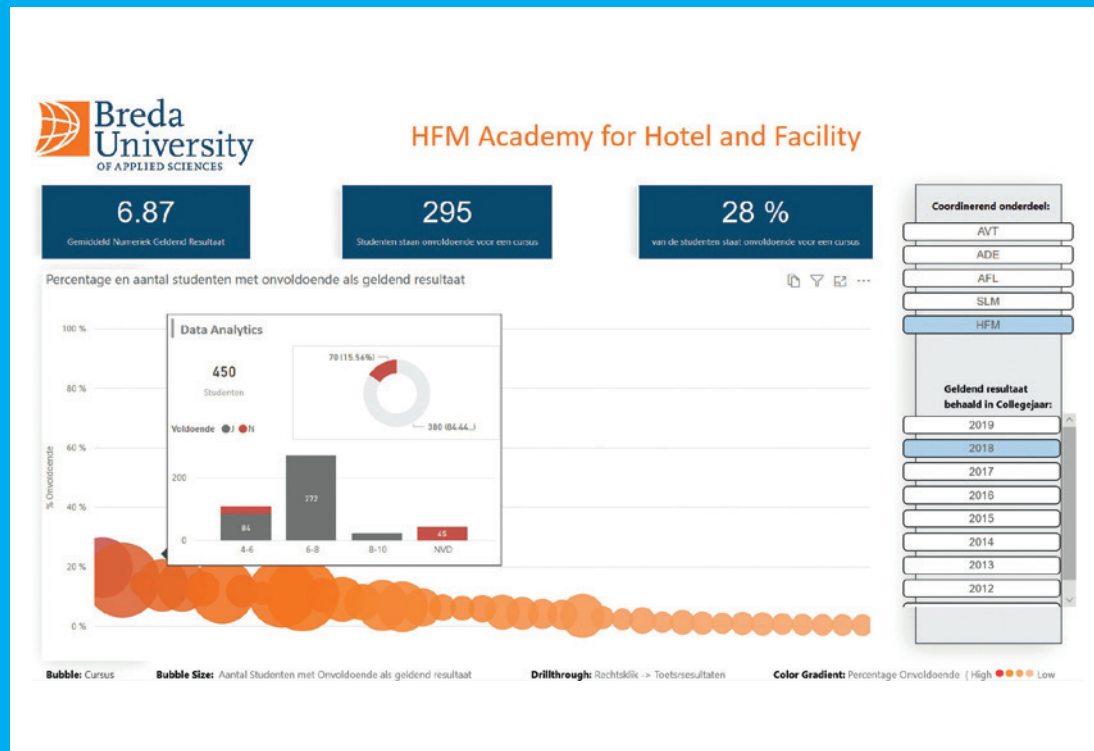
CAREER: Operations Controller at BUas
(May 2017 – present)

Registration and compliance
officer at BUas
(March 2014 – May 2017)

Participant in the 'Secure
and reliable use of education
data' Acceleration Zone
(2019 – present)

Education data maturity model

The use of education data requires actions in many different areas. That is why the Acceleration Zone has developed a model that provides insight into the degree of maturity of the various aspects based on earlier research by Deloitte and Utrecht University. This concerns Strategy & Policymaking, People & Culture, Organisation, Governance & Management and Information Technology. It is important to pay sufficient attention to all aspects at the highest possible level in the organisation and to develop these aspects in a coordinated manner. Only then can we expect the use of secure and reliable education data to have a significant impact. To achieve the best results, the different elements in the model must be well balanced. A high score on one aspect is not effective if the other aspects do not score well. The more the activities relating to the different aspects are embedded in the organisation, the more impact education data will have.



Dashboard by Tom Konings for BUas



Bert-Jan Klaren

INSTITUTION: Hanze University of Applied Sciences in Groningen (Hanzehogeschool Groningen)

CAREER: software developer (1994 – 1998)

IT coordinator at Windesheim University of Applied Sciences (1999 – 2009)

Project manager Education Innovation with IT Hanzehogeschool Groningen (2009 – present)

Participant in the 'Secure and reliable use of education data' Acceleration Zone (2019 – present)

Take back control of education data

TEXT: MARJOLEIN VAN TRIGT

Hanzehogeschool Groningen in the Netherlands has met most of the preconditions for using education data. A particular challenge for the institution is to take back control of data currently held by external parties.

At our request, Bert-Jan Klaren, team member of the Acceleration Zone and project manager for educational innovation with IT at Hanzehogeschool Groningen, takes a closer look at the five aspects in the maturity model.

People & Culture

"Learning analytics is often viewed in its most extreme form, predicting which student will fail based on three online clicks. I don't know of any educational institution that takes this approach. It is a road down which we cannot and not want to go; I prefer to focus on improving education on the basis of group behaviour. If the long-term perspective is drawn out of fear, it becomes very difficult to operationalise the process. My aim is to start with much more basic things. For example, we recently introduced a system for recording attendance by means of sensors. This caused quite a commotion. Lecturers had to keep track of attendance anyway, only this system made it easier for them. But still, there was the fear that their superiors would check up on them. The beauty of the system is that programme providers now have real-time insight into the number of people in a room at the touch of a button. It allows you to benchmark class times, for instance by seeing if there are more students in the morning than in the afternoon, or vice versa. And maybe it could lead to organising education more effectively based on the data obtained."

Organisation

"It is not yet clear at Hanzehogeschool Groningen how we can best position learning analytics in relation to management and control information. That is why I find the examples from the Acceleration Zone so compelling and useful. Stakeholders in education want to see that it works, why it works and how it works, and the Acceleration Zone gives us good examples. Drawing inspiration from VU Amsterdam, we will conduct curriculum analyses for study programmes. By identifying obstacles, we can make education more amenable to research. We are also keen to get started with process mining, as carried out by the Open University in the Netherlands. We are looking for a small example to apply the process to that will quickly lead to the desired insights and results."

Klaren: "We see many 'data trickles' emerge as learning analytics gets rolled out in more and more places. While this may benefit individual lecturers, it is still not being used at the overarching level. Our next priority is to set up an education data team."

Governance & Control

"A national Code of Practice will be drafted for Dutch institutions of higher education. I was given the task of developing a framework for the ethical issues within my institution, but I prefer to follow the knowledge being gathered at the national level. This means slowing down at the institutional level in order to pick up speed in the long run. We do not want to reinvent the wheel, so I'm glad we are combining knowledge and expertise in this field at the national level."

Strategy & Policymaking

"Our university also participates in the 'Towards digital open educational resources' Acceleration Zone and we participated in SURF's eStudybooks project. We want to use the data generated by these projects to gain insight into the learning behaviour of students. One recent achievement is that digital interaction with a teacher can now be counted as educational contact time. This provides scope for structural digitisation in our education so that it is no longer only for the intrinsically motivated. We could strengthen and embed, within the organisation, the confidence to rely on education data – not only strategically but also operationally. It would allow us to redesign and improve the quality of education."

Information Technology

"Our data collections are mostly stored with external parties. Sometimes they know more about us than we do ourselves. From a risk management point of view, our legal department is fine with that for now, because a data breach is unlikely to occur at our institution. But it also means that we will have more and more external control, which is a big problem for us."

As project leader of eStudybooks, I am engaged in discussions with various publishers. When we start discussing education data, the tone of the conversation tends to change. At the moment, we have an all-or-nothing model: one party has access to the data, the other does not. We want to organise this differently. It makes sense that publishers have an interest in knowing which material is used most frequently without having to know exactly which students it concerns. For an institution, however, this interest or even need is much greater, as we have to be able to correlate the data with the education provided. At present, publishing platforms only provide us with anonymised data sets, which are not sufficiently useful for us."

To ensure that it has access to the data it needs, the education sector must take the lead and assume a place in the chain it had not had until recently. It is true that in the past we also did not know how the educational resources were used, but today there are other parties that do. As a public institution, you have a duty to fulfil. The time has come when we can no longer achieve educational improvements without also using data. We have come as far as we could, but if we want to do better, we have to use education data."



'We see many 'data trickles' emerge as learning analytics gets rolled out in more and more places'

See(k) the story behind the statistics

TEXT: MARJOLEIN VAN TRIGT

A lot is already possible with education data at Leiden University of Applied Sciences (*Hogeschool Leiden*) in the Netherlands. The question is: What do you want to know? Bram Enning, policy advisor at the Institutional Research at Hogeschool Leiden, is reluctant to speculate on the answer. "In any case, we are having a lively discussion about it."

'The question is what to do with all these great ideas'

DHogeschool Leiden has joined the Acceleration Plan to get more out of education data than it currently does. "Education data is raw material which we have a lot of and will continue to get more of," says Bram Enning. "But how do we mine and use them?" Enning, a psychologist and historian by training, is more interested in the story behind the figures. He believes that education data can help us make better choices.

"Discussions are often held on the basis of gut feelings, but we should also use figures to fuel the conversation," he says. Include, in the discussions, extension of the application deadline for new students. When programmes have too few applications, the deadline at Hogeschool Leiden is often postponed. This leads to all kinds of practical problems: students have to be informed and staff responsible for timetabling and room reservations have to wait longer for student influx numbers. Enning: "We looked at what the postponement of the deadline actually means in terms of student numbers. It was actually a very small number, of which only ten were still enrolled at the university after one year. Although this is not a decisive factor, these figures do help in the discussion."

Making better choices

Enning was introduced to the concept that numbers can help in making a better choice earlier in his career at Studiekeuze123, where he was product manager of the 'choice of study database' (studiekeuzedatabase). "It was like an experimental laboratory, because all national sources are gathered there. I can apply everything I learned there about working with large data sets to my work at Hogeschool Leiden."



Bram Enning

INSTITUTION: Hogeschool Leiden (University of Applied Sciences Leiden)

CAREER: PhD at Maastricht University on the effectiveness of LSD therapy (2004 - 2008)

Postdoc researcher at NIOD (2008 - 2014)

Product manager 'choice of study database' at Studiekeuze123 (2012 - 2016)

Technical project leader at Kies op maat (2004 - present)

Policy advisor Institutional Research at Hogeschool Leiden (2016 - present)

Participant in the 'Secure and reliable use of education data' Acceleration Plan (2019 - present)

Hogeschool Leiden's institutional research team, of which Enning is the coordinator, developed a study progress dashboard together with the Business Intelligence team. Enning: "We could already see whether students had passed their propaedeutic year, dropped out or switched programmes, but sometimes these figures were only available eighteen months after a student had started. We believed that was too late. We initiated a project to ensure that we can see how the students are doing within a few months after the start of their studies. We got it up and running in a couple of months."

Fuelling the discussion

Enning is proud of the dashboard and the accompanying data set, which can be used for detailed analytics, such as analyses of the effect of the binding study advice (BSA). Hogeschool Leiden is looking into the possibilities of discontinuing the BSA. According to Enning, it's the kind of topic where numbers can also fuel the discussion. A research network of lecturers who spend one day a week researching their teaching has also been launched. His expectation is that this will generate various questions about data in an organic way. "I think the Acceleration Plan can help us with that. The Statistical Manual is a wonderful tool and the curriculum for data science in education which the Acceleration Zone intends will also be of great use to our researchers."

Search

The question of how education data may benefit Hogeschool Leiden cannot yet be answered precisely. "We have just started a joint search into the subject of student career counselling," says Enning. "We had a meeting with 45 students and teachers from across the university. We set to work in small groups on how we might improve student career counselling with the help of data and looked at the kinds of needs lecturers and students have. This resulted in a wealth of examples and, of course, questions about privacy and ethics. The next step in the process is to figure out what to do with all those ideas. That search is ongoing, and I am glad that the Acceleration Zone allows us to follow the search of others."

Bollenstreek and Randstad regions

In the meantime, his department has not stood still and data research is already yielding valuable results. Hogeschool Leiden has traditionally focused on the city of Leiden and the surrounding area, the Bollenstreek (bulb-growing region). "It had become entrenched in our self-image that we were a university of and for the Bollenstreek. But we have grown considerably in recent years. When we identified where our students come from, a completely different picture emerged: almost eighty percent of our students completed their preliminary education outside Leiden and the Bollenstreek! This shows how data can change the narrative we have of our identity."

Speaking a common language

To get from data to insight requires a wide range of expertise and skills, as shown in the maturity model of the Acceleration Zone. Enning argues that one of the prerequisites is a common language. "Sometimes quite literally, for example by learning to work with the same tools. All members of the IR team take a course in Python and SQL. You have to be able to understand each other's work, and that is far easier if you have a team that evolves together, as it were. It takes a while to get to that stage, but once there you can respond adequately to questions from the education sector."



'How data changed the narrative of our identity'



Theo Bakker

INSTITUTION: VU University Amsterdam (VU)

CAREER: Self-employed entrepreneur
XML Factory (2004 - 2009)
Information manager at the
University of Amsterdam (UvA)
(2004 - 2012)
Senior manager for education
at Deloitte (2012 - 2015)
Team leader at VU Analytics
(2015 - present)
PhD at VU on the success of
students with autism in their
studies (2017 - present)
Coordinator of the 'Secure and
reliable use of education data'
Acceleration Zone
(2019 - present)

'Don't forget to include others in your enthusiasm for education data'

This is what Zone coordinator Theo Bakker has learned from five years of pioneering with education data.

TEXT: MARJOLEIN VAN TRIGT

VU University Amsterdam in the Netherlands has been making intensive use of education data for five years. Theo Bakker, team leader of VU Analytics, talks about the development of the organisation but also about his own experiences. 'This particular insight gained from DUO's data is now worth €1.5 million a year'

'Our Code of Practice gives employees the confidence that we use education data safely and reliably'

You could say he is somewhat addicted to his work. How else would Theo Bakker be able to explain why he was uploading public data from DUO onto his laptop during a holiday in Norway? He has no regrets about this at all, as it led to the eureka moment of his career.

DUO kept data on the outflow of secondary school pupils at postcode level. Bakker, at the time project leader of student analytics at VU, asked himself what he could learn from that data about the type of students VU attracts. To his surprise, the data showed a huge variation in patterns between universities. Whereas the University of Amsterdam (UvA) mainly attracted students from the city centre and the adjacent areas around the dunes and the Gooi region, it transpired that the students at his university were much more likely to come from outside Amsterdam. VU attracted students who had previously studied elsewhere significantly more than most other institutions. Bakker realised that because of its funding rules, VU was disadvantaged by these 'second chance students', as Dutch education Minister Bussemaker later called them.

After his holiday, Bakker convinced his employer to lobby in The Hague for putting an end to this inequality. The result was that a switch from one institution to another was now reimbursed by the Dutch Ministry of Education, which earned VU 1.5 million euros per year.

Elegant data analyses

Bakker's fascination for education data began during his studies in Information Science and only intensified during his time as a policy officer at UvA, where he was involved in optimising processes. He made the switch to the business world and was introduced by Deloitte to 'elegant data analyses' on banking institutions. Bakker realised that the same kind of analysis can be applied to institutions of higher education.

"At Deloitte, they knew which customers with a residual debt on the mortgage had a problem and which did not," he says. "The bank wanted to approach the first group proactively and offer them an instalment plan, while the second group was offered additional financial services. I looked at the data visualisation and imagined what it would be like if we did the same with students – which patterns could we identify in the education data?"

Bakker pitched the idea to another university and was invited to conduct a pilot at a faculty. He produced a superb analysis of data patterns that predict which student will drop out of the programme, only to see the report disappear unused into a drawer.

Prognosis model

"At the time, VU was in the process of automating its processes for students and lecturers. This was coupled with a large programme that allowed us to tell students how they were doing with their studies. It gave me the opportunity to do more or less the same as with the earlier pilot, but then for all the Bachelor's programmes of the VU at the same time.

VU's systems made it possible to connect different sources and also to gain insight from data of individual students before they started their studies. This allowed us to make a prognosis model showing which students would drop out after the first year of study and what the different patterns were." Bakker: "Although the analyses were well received, they were still theoretical. It was when the possibility of proactively working on the model materialised as a plan in the multi-annual education agenda that I made the switch from Deloitte to VU. I had lunch meetings with education portfolio holders, academics and members of student councils to find out what they wanted to do (and be able to do) with education data and what projects relating to the chain or to education data were already underway."

Viewed from the perspective of the maturity model of the Education Data Acceleration Zone, the starting points of the project are as follows:

- there is a VU-wide strategy in place with the agreement of the portfolio holders and the Executive Board;
- the institution acquires the code of analysis software from Deloitte and a steering group will be set up for governance.

Bakker: "There is also a plan in place to perform the analyses. What is missing are the right people, so we decided to train people ourselves and to recruit a data engineer. A newly appointed privacy officer will oversee the process. Developing a prognosis model on the basis of education data is permitted as long as no data on ethnicity or functional limitations are included. And for personal study advice, prior permission has to be obtained." Bakker: "All first-year students of three faculties were asked to participate in the compulsory language test in the first week. Fifty percent of them said yes. When the lecturer announced the request in advance, this percentage rose to eighty."

Mismatch

Does this mean that all aspects of the maturity model have been fulfilled? In reality, it is much more complex. "There was a mismatch between who I spoke to and who had to issue the study advice," says Bakker. "Many student advisors felt uncomfortable advising a student on the basis of a model. They sent a letter to our university magazine. I had not sufficiently included the student advisors in the how and why of the prognosis model. Under the GDPR, it is mandatory to indicate which factors lead to a prognosis; We had carefully included that on the prognosis card."

If the model indicates that a student has an increased risk of dropping out, for example because of a long travel time, it would appear that this is a cause. It can be quite difficult to use that information effectively in a conversation with the student. "The problem may not be the long travel time but what lies behind it, namely having abandoned a previous study programme closer to one's original place of residence," explains Bakker. "The tutors were happy with this new insight, but we had not given the student advisors sufficient leeway to use the model proactively. As a result, they could only use it when students approached them with their concerns. At that point the model could only confirm that they were in the danger zone."

Code of Practice

Looking back, Bakker sees it as a useful period in which he learned, among other things, that you have to include the target group and pay attention to the ethical and privacy aspects of using education data. "It is important to keep a close eye on these aspects. We have decided, for now, not to use these kinds of prognoses of the dropout rate of individual students. However, we did see the value of this kind of education data in terms of general policy for groups of students."

At VU, the ethical questions surrounding the use of education data have since been laid down in a Code of Practice drawn up in consultation with two privacy officers. The text of this code is updated every year. Bakker: "We have always involved student councils in the Code of Practice. Our Code of Practice was published just before the GDPR came into force. It has proven to be very important for governance (what can and cannot be done?), strategy (is this in keeping with our identity?) and for the aspect of 'people and culture'. Staff members trust that we use education data securely and reliably and students are assured that we make good use of education data."

Analysis of education data at the institutional level

At the same time as the fiasco with the prognosis model, Bakker made his 'Norwegian' discovery. This shifts the use of education data to the institutional level; it proved useful in improving the organisation but also student success rates. From then on, new policy was to be drafted partly on the basis of data analytics. This provided surprising insights, such as that a faculty's idea of attracting more grammar school students can be consigned to the dustbin, as the data shows no correlation between high school graduation rates and study results. Contrary to expectations, students in higher professional education (HBO in Dutch) do not perform less well than students in pre-university education (VWO in Dutch) and do not drop out more often. An additional entrance requirement at this faculty therefore proved unnecessary. Bakker: "We will continue to monitor whether HBO graduates perform consistently well. So far, that has been the case."

A return to analyses at the individual level

Meanwhile, the focus at VU has shifted to curricular and subject analyses. How fast do students progress through their studies? How does the selection of minors work? How can the institution keep in step with the choice of subjects? The surveys commissioned by VU Analytics are in high demand. The institution also has to focus, out of necessity, on timetabling data – the fastest riser in the Netherlands in terms of student numbers is struggling to keep the influx of students manageable. Bakker expects that VU will eventually return to insights at the individual level. He is closely following developments at Leuven University, where student advisors and tutors help students with study delays to make realistic, data-driven plans.

Keep it manageable

According to Bakker, the biggest challenge with education data lies in the aspect of 'people and culture'. "A university is in a constant state of flux. Four years after my introductory round of portfolio holders, there are new employees everywhere. Building trust and connection is essential – it is at the core of what you do. You need people above you to guide you. In fact, you want to be able to trust lecturers and tutors to use a dashboard according to the Code of Practice, but this requires constant monitoring. How do you recruit the right people? How do you retain an employee? How do you keep it manageable? Even the pioneer in the field of using education still has a lot of terrain to conquer."

Seven lessons learned by Theo Bakker, in his own words:

1. Include and involve your target group. You can develop fabulous dashboards, but if the end users do not know how to use the insights from education data, they will not use it.
2. The Code of Practice being developed by the Acceleration Zone can be used to draw up ethical guidelines, but this is not enough. Make sure employees know about the Code of Practice and where to find it. And make sure you monitor whether the Code of Practice is still observed in the longer term.
3. Have people work from their own strengths. I used to be project leader of a team that achieved tremendous results and yet I overburdened the team members. I was too demanding and didn't pay enough attention to whether the work was still enjoyable. It's still something I'm working on.
4. A competent data analyst is not a competent education data analyst. Now, when I hire new people, I pay more attention to whether they have a passion for education. Do they understand the organisation's culture and sensitivities?
5. Involve the student councils in all important deliberations and decisions.
6. Remember that you also need support from your management. Without a board that believes in the secure and reliable use of education data, it is difficult to make a small initiative grow and flourish.
7. Make sure the data chain is accurate in terms of content and IT aspects so that you can automate where possible. That saves a lot of irritation at the organisational level ('weren't you supposed to deliver this?').

Start with a clear framework

TEXT: MARJOLEIN VAN TRIGT

According to Theo Nelissen of Avans University of Applied Sciences in the Netherlands, people and culture are important aspects in establishing a more structural use of education data. Communication is key in this regard – getting the organisation on board is half the battle.

‘You may not want to seek the limits of what is technically feasible from a privacy point of view’

What is the greatest added value of the Secure and Reliable Use of Education Data Zone?
“Sharing knowledge,” says Theo Nelissen, senior policy advisor of Institutional Research at Avans. “Initially, that knowledge came mainly from VU, as they already use well-developed models. But now, other institutions are contributing more and more valuable knowledge as well.”

He has noticed that the culture of the various organisations is reflected in their approach to the topic of education data. While one institution might get off to a flying start, another might be more interested in a step-by-step consideration of the preconditions for education data. Where does Avans fall in this range? “Avans has an informal culture with, to a certain extent, a lot of freedom for individual employees,” says Nelissen. “It can therefore take some time to understand the formal framework. So while this may result in some temporary noise, it can also lead to many great initiatives.”

Contributing to small-scale and flexible education

For Avans, participation in the Zone began with the field trip to the UK organised by SURF in the spring of 2019. During this trip, two members of the Avans Executive Board became enthusiastic about the new possibilities with education data.

“The prospects they presented on their return made us slightly apprehensive at the Institutional Research Department,” says Nelissen. “We knew how much work a small education data project



Theo Nelissen

INSTITUTION: Avans University of Applied Sciences

CAREER: PhD at Maastricht University on the effectiveness of LSD therapy (2004 – 2008)

Researcher at DSP Group (2007–2009)

Senior policy advisor/researcher at Avans (2010 – present)

Participant in the ‘Secure and reliable use of education data’ Zone (2019 – present)

entailed, such as research into dropout rates or predicting student success. We were concerned that the implications of these prospects might be underestimated.”

He certainly sees that Avans could benefit from a more structural use of education data. Avans is a proponent of the small-scale approach and aims to make education more flexible. Education data can contribute significantly to this by offering students tools to organise their own learning process and by giving lecturers the opportunity to differentiate the educational offer according to their students’ wishes. Nelissen: “The first step is to agree on a framework. It’s not about what is permissible in terms of privacy, important as that is; it’s about what benefits the student the most. You may not want to seek the limits of what is technically feasible.”

Two basic principles

Nelissen was asked to produce an institutional vision on education data on the basis of his expertise as a researcher and experience with education data analysis. “It more or less worked out that way. That is also fairly typical for Avans – there is scope to work on certain things and only afterwards is it formalised.”

The foundation of this vision is now complete. Two basic principles underlie every aspect of how Avans treats education data: trust and the human aspect. Trust is about treating education data transparently, safeguarding privacy and ethics, and using data only for the purpose of improving quality. The human aspect is closely tied to the small-scale, personal form of education practised at Avans. It puts people first and does not make data and automated feedback a substitute for human contact and individual differences.

“It might seem logical and you can hardly disagree with it, but it has been well thought out,” says Nelissen. “It gets more relevant when the basic principles become concrete. When they lead to codes of conduct, for example, things can become more challenging because it then becomes relevant to your own work.”

BOOST-IT

The institution’s vision on data is part of a larger IT and education project that Avans is running, BOOST-IT, and is strongly linked to the ambitions of Avans University of Applied Sciences for the coming years. An information management group deals with decision-making and prioritisation around data subjects. The BOOST-IT project component that deals with education is connected to the Avans Learning and Innovation Centre. “We do our best to put the human and educational side first, but that can sometimes cause tension,” says Nelissen.

As befits a researcher, he takes a critical look at his own role in the process of making large-scale use of education data at Avans. His tendency to work very methodically can evoke unease among those seeking an agile process and raises questions like ‘Is enough being done?’ ‘What is next on the schedule?’ These two approaches are sometimes difficult to reconcile.

“There is a lot of pressure on everyone. My personal pitfall is to ‘lock’ myself away in a room for two months and resurface with a carefully considered final report, only to discover that the real world outside has in the meantime moved on. Communication is key in this regard – getting the organisation on board is half the battle.” His position also sometimes puts him in a double bind, for in his role as researcher he is also a customer – he is also a user of education data who wants all the prerequisites to be in place.

Shifting to evidence-informed learning and working

Because the use of education data touches on so many aspects of education and research, coordination between these different areas is necessary. “It is precisely in the human aspect where things get complicated,” Nelissen observes. “It’s about more than designing a dashboard. What do students gain from the insights provided by the data? How do they take ownership of their own learning process? What guidance do you offer? How do you make a dashboard motivational? The process also puts a burden on lecturers. The structural use of education data requires an inquiring attitude throughout the organisation. Shifting to an evidence-informed culture takes time. Our vision of data is a good place to start. As we present the vision to the organisation, awareness of how we will use data and what opportunities this brings will start to pick up.”

Consider that there may be many causes for study delays

TEXT: MARJOLEIN VAN TRIGT

The University of Groningen (RUG) in the Netherlands works with an education data analysis product provided by the digital learning environment. Project manager Jan Tjeerd Groenewoud knows that in and of themselves, clicks are not that meaningful. The use of historical data, on the other hand, can lead to the early recognition of study delays and thus to better and more personalised guidance of students.

‘If the data show early on that things are not going well, you have to discuss the possible causes with the student’

Why has the University of Groningen (RUG) joined the Acceleration Zone?

Jan Tjeerd Groenewoud: “Education data is a hot topic. At RUG, we have a BI portal where we track students at an aggregate level to generate administrative information. We are also working on an early warning signals project. To this end, we use an education data analysis tool from our digital learning environment, Blackboard. We want to invite – in response to early indications – certain groups of students to a meeting with a student coach who will offer them a helping hand. ‘We see a pattern emerging which we have seen go wrong with other students in the past. Is there something we can do for you?’ We will definitely get started on this next year. A second phase of the project relates to feedback for lecturers. Results from submitted assignments and interim assessments show lecturers how different groups of students are doing. It can be quite confronting when, for example, an interim assessment shows that 50% of the students did not understand the course material. But it can be a good reason to offer an additional workshop that deals with specific material, for example.”

“We also give feedback to the students, who have access to a personal course report in the learning environment. They want to know how they are performing. In the past, we would show them how hard they are working compared to the other students, but they don’t really care about that, as we soon found out.”



Jan Tjeerd Groenewoud

INSTITUTION: University of Groningen (RUG)

CAREER: Various positions at RUG
(1991 – 2010)

Project manager at UMCG
(2010 – 2018)

Project manager at the Centre for
Information Technology of RUG
(2010 – present)

Participant in the ‘Secure and reliable
use of education data’ Acceleration Zone
(2019 – present)



‘We want to get people inspired so that they can see how using education data can yield great benefits’

What do you consciously NOT do with education data?

“We don’t attach any significance to prognoses based on the number of clicks or the number of minutes spent in the digital learning environment. We receive statistics on every course, but the predictive value of those kinds of variables is virtually non-existent in our case. This is logical, because learning does not take place in the learning environment. It doesn’t take long to download a PowerPoint presentation, but studying it will generally take longer and that is not reflected in the statistics. It’s only when someone does not log in at all that you have an indication something is amiss. It could be anything – from incompetence to homesickness, financial problems or wrong choice of study programme. Although the data does not show you what is going well, you can see when something is not going well. Exactly what is going wrong must be determined with the student concerned.”

What do you hope to achieve for your institution in the Acceleration Zone?

“The Acceleration Zone is something akin to ‘Europe’. If you believe in it, you will see the positive aspects it has to offer. As a collective you know much more than as an individual. But if you do not believe in it, it is a waste of money. As far as that is concerned, I am a European. I learn from others’ knowledge and experience. The Zone stops me from making the same mistakes they made. For example, I’m currently working with the corporate lawyers of RUG on a privacy statement, for which I can draw from other institutions’ examples.”

What else do you do within your own institution in the context of the Acceleration Zone?

“We try, within one faculty, to get all the information about the subjects and the students up to speed. Students and lecturers must be informed about the project and we must think about interventions the student coaches can undertake. They have to learn to deal with the numbers they are seeing. You don’t want the data analyses to immediately lead to the conclusion that things are not going well and that a student is then automatically offered a course. There may be many more reasons for study delays.”

What is happening in the area of people and culture?

“We want to inspire people so that they can see how using education data can yield great benefits. My biggest concern is the misconception that this is an IT project. The numbers must be meaningful to the participants, which is why it is very important that the data is presented properly so that people feel they can trust it. That’s the first step.

The next step is for the student coaches to assess whether they can do something with it. They are reluctant, partly because it often takes a lot of effort to reach students who have not attended classes. We use a module that takes the historical data of various students to build an algorithm that makes a prediction. Although it is not yet perfect, it is better than flipping a coin. Nevertheless, as an institution you also have a duty of care to find out what is going on. Perhaps the student is also enrolled at another faculty and is working hard there.”

“Student advisors are not always aware of that kind of information, so they have to contact a student on the basis of a first rough selection of historical data: ‘At this rate, you will not achieve your BSA and it will cost a lot of money. Is there something we can do for you?’ When you speak

with them, students often insist that they will be fine. At the same time, they appreciate being seen, as we have learned from an earlier project with the Faculty of Law. We sent an email to students who had failed the first part of the course and who had also failed the interim assessment for the second part. What had been going on? Out of 125 emails, almost 90 were answered in the first two hours. Many students had good reasons. Moreover, their answers expressed appreciation for the fact that they had been sent an email. It is easy to feel lost among 600 first-year students."

What is happening at management level?

"A new RUG education strategy paper soon to be published will likely include the use of education data. The administrators will issue an opinion on the paper. Now that our experiments are getting bigger, we need faculty agreements on what activities will be carried out and by whom. After this stage, it has to be taken to a more policy-oriented level."

How is the organisation structured?

"We have a steering group for this project. There is a project group charged with organising the project and many other people who will carry out the related activities. My role will be that of a central coordinator: keeping in touch with the digital learning environment, making sure the data is up to scratch and that technically it is well structured."

What about the IT aspect?

"Data is available in the digital learning environment on login, passed exams and data in Gradebook, which Blackboard can combine in the education data analysis tool. So why doesn't every institution use a standard education data product? There is a lot of reticence because of the GDPR. You also have to show that it will be useful. Will education improve as a result of using education data? That is the main question. Every lecturer will have to consider whether the effort they put in will stack up against the benefits in terms of their students' learning"

Put all target groups together to see where education data can contribute

TEXT: MARJOLEIN VAN TRIGT

Eleven questions for Wilco te Winkel, education information manager, about the use of education data at Erasmus University Rotterdam (EUR) in the Netherlands and the typical Rotterdam spirit in which it is done.

'If we use their data, students will want to be included and it must be made clear how they can influence that'

You have adopted the education study infrastructure used by VU. What is the reason for this?
"It gives us a good foundation. Our EUR variant of the infrastructure and the VU reports have given us a flying start."

What do you do differently from other participants in the Education Data Zone?

"VU is mainly focused on management information. We also serve three other target groups – lecturers, students and researchers. Most institutions in the Zone invest heavily in 'getting the basics right'. In typical Rotterdam spirit, we are going full steam ahead and will see where we wind up, although there is a risk that we will be overstretched."

How are you going about it?

"I was fortunate to be able to get the former CIO of EUR on board to assist me as a senior project leader. Together, we found a format in which we put students, lecturers, researchers and administrators in one room to ask them all sorts of questions about education data."

"We ask them what they need from us, what their concerns are and what advice they would like to give us. We are currently supporting nine sub-projects, with a minimum of two projects for each stakeholder or target group."



Wilco te Winkel

INSTITUTION: Erasmus University Rotterdam

CAREER: Various positions at EUR
(2009 – 2019)

Education information manager
EUR (2019 – present)

Participant in the 'Secure and
reliable use of education data'
Zone (2019 – present)

How do EUR students want education data to be used?

"Our students are happy for us to use education data, but they are adamant about one thing: they don't want 'magic'. They demand full transparency regarding all the reports we produce about them. It's important to them not to be patronised and to be able to use their own data. If we use their data, students will want to be included and it must be made clear how they can influence that. In short, they demand transparency and control."

What kind of products do you make for the students?

"Our students like the idea of a goal-setting app which helps them to set and achieve their goals. One student has made such a beautiful description of the app she has in mind that we are considering involving her in its implementation. In her proposal, she has incorporated not only learning objectives into the app but also social and sporting objectives."

And what do you do with education data for administrators?

"Administrators want to know, among other things, how the investments in the framework of the quality plans for higher education are performing. How do students rate the investments, which faculty invests in which quality aspects of education, and is it comparable? Because of the Covid pandemic, it is especially relevant right now to provide insight into the effect of digital education on the quality of education."

What do researchers want?

"Researchers indicate that, ideally, they would like to have access to a lot of EUR data in one place so that they can carry out research into education. We believe that researchers can use much of the same data as administrators. This is different from the situation at the VU, where it is divided into a Business Intelligence department that deals with historical data and VU Analytics, which looks at expectations for the future. Our aim is to combine this in one department in the Business Intelligence Competence Centre (BICC). For this to succeed we have to act as partners with the researchers, so collaborating with rather than supporting them. Getting it right is a question of culture, really."

What do you make for lecturers?

"As far as lecturers are concerned, we are still in the conceptual phase. Within the EUR, there is a great deal of enthusiasm for the idea of a 'course inspection' – a scan that allows lecturers to see how they can fine-tune aspects of their own course to get more out of the digital educational platform."

What is the biggest challenge?

"When we joined the Acceleration Plan in 2018, education data was 'hot and happening'. After that, the administrators thought it was all done and dusted and lost interest in the subject. We were able to regain their attention by bringing the target groups together."

"It was good to see how they inspired each other and understood each other's relevance when it comes to education data. And the Executive Board saw that it is important for researchers as well as lecturers/students, and that was a golden opportunity."

What is the biggest challenge at the moment?

"We have now established a Privacy and Ethics Board within the project to oversee the project. This board includes representatives of all target groups, including a lecturer, a researcher and a student. We don't do anything without their knowledge and approval and having given their terms and conditions. Without such early approval, we could run into issues further down the line, which would cause irreparable damage. The question is who is best suited to chair this board. We want a cooperative board, not the privacy police. The chair has to be someone from outside the project, as the board must set frameworks and provide instructions, but there should also be room for negotiation. Ideally, I would like to see the Data Protection Officer in role of chair."

What else has been an important lesson?

"We realised just in time that we were not involving the BICC enough. Although they are in the plans and we held work meetings with them, they were only recently involved fully in the project. Now they are able to take part in the project and contribute to it as partners, which also means we can tap into their knowledge and expertise. That creates a lot of momentum!"



'The Executive Board saw that student data is important for researchers as well as lecturers/students, and that was a golden opportunity'



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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