

INSPIRATIONAL EDUCATION

RADEBOND

LECTURERS

ON MOTIVATIONAL

TEACHING

CONCEPTS

Radboud University



Inspirational Education - Radboud Lecturers on Motivational Teaching Concepts

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Good artists copy, great artists steal.

PABLO PICASSO

Ever tried. Ever failed. No matter.

Try again. Fail again. Fail better.

SAMUEL BECKETT

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INTRODUCTION

When we were included as an innovation team in the ICT in Education programme in 2018, we immediately knew what our first project would be. Why collect plenty of something from afar when there is ample of what you need on your doorstep? We wanted to be inspired by the lecturers who deliver such a fantastic education here at Radboud University and of course have been doing so for many years. Lecturers who motivate their students to work, with curiosity and pleasure, and deliver an end result which they can be duly proud of. Inspirational education, which unfortunately often remains hidden behind the doors of the lecture hall or may only appear as a footnote in the study guide.

We looked around the university for a number of examples. Which lecturers should we talk to? Who stands out for being able to touch their students with their lectures? From the long list compiled we approached fourteen lecturers at random, the only criterion we insisted upon was that all faculties be represented. This became a series of fourteen exceptional meetings, which served up far more than we could ever have imagined. Fourteen different personalities, fourteen contexts, fourteen diverse educational concepts.

After a few interviews, a striking similarity quickly dawned. At first we thought this resemblance was purely coincidental, but after the fourteenth meeting we had to admit we clearly had a pattern on our hands. All of these lecturers offer tight frameworks, set strict demands and have high expectations. Within this structure they permit their students freedom, trust and the responsibility to adopt a specialism truly as their own, to make the errors and to learn from these.

These lecturers continuously challenge their students to make a genuine effort, not to disappoint their fellow students, to learn from themselves, from each other and to arrive jointly at new insights. Lecturers who coach and guide their students, steer them if necessary and do not brandish the marking pen like the 'sword of Damocles'. Taking part in one of their courses is so all encompassing that the end exams can often feel like a mere formality. The real work resides in the course itself, not in some frenetic cramming final week of the schedule.

We share their stories in this booklet. We have dipped in the oar of our own interpretation to each of the narratives, alighting on the elements we think make them exceptional; the elements that we believe ensure their teaching is such a success. These stories inspired us and will hopefully do the same for you. We are grateful to all fourteen lecturers for giving us both their time and a privileged peek behind the scenes. They allowed us to see how step by step, and sometimes against the prevailing current, they continue to develop their teaching; adjusting what fails, reinforcing what works. Always vigilant for new inspiration.

PREFACE

Our lecturers are deeply appreciated by their students, something only possible if they know how to inspire. Lecturers at Radboud University are scientists; scientists who teach. Whilst the one will emphasise research, the other will focus more on education and teaching, however it is the vibrant combination that underpins both. Their investigative/research nature ensures that lecturers are always seeking to improve how they transfer their knowledge, investigating original approaches and innovations to advance the effectiveness of their teaching skills. And not merely from a static 'result-table-orientated' paralysis, but from the conviction that education, like everything else, can and must always be continuously developed.

It is becoming increasingly obvious that traditional modes of teaching are not always necessarily the best ways, that an active approach from students is vital and that so called peer-to-peer teaching methods prove highly effective. This booklet contains 14 examples of teaching types which differ considerably, but all are successful because lecturers have initiated different ways for gravitating students towards a more active involvement with the subject matter.

This booklet has become a sample board of possibilities, in which everyone will be able to relate to something that he or she can use in education, albeit adapted to the specific context and student audience. It makes all the difference of course if you are dealing with group of freshman undergraduates or with postgraduate students, whether the group consists of 300, 30 or 3 and whether you are transferring skills or knowledge. All manner of examples are recorded here in this booklet, some of which can be copied directly, others may need some adjustment. I do hope that this booklet inspires the many. Not because I think that there should be continuous innovation, but because I am convinced that the examples described can help prevent the reinvention of the wheel, offering opportunities for subsuming successful approaches and improving education's broader picture.

I wish you a pleasurable read and would like to express my thanks to the creators of this unique booklet!

Han van Krieken, Rector Magnificus, Radboud University

MEANINGFUL

LEARNING

DR. MARCEL BECKER



MEANINGFUL LEARNING

Applying ethical theories to any field of expertise

“I look at things differently from you.” Wherever he teaches, ethicist Marcel Becker always draws a distinct line between himself and his audience. His public are sometimes Communication Science students, at other times Public Administration or Law students. Following classical theories on proper behaviour he explains how you can make a moral assessment between the importance of the one and the consequences of the other. Becker’s challenge lies in clarifying to students what the over two thousand year old notions he presents can say about current practices in their own fields of expertise. “By demonstrating that my ethical way of looking differs from their way of looking, I safeguard my domain. I start with the theory, by explaining where my strength lies, after which I go on to explain how this can be relevant to their practice. The first lecture is always a difficult one, as things can tend towards the fractious. Lawyers for example have constructed an enormous system that works exceptionally well. Sometimes what you do can throw a spanner in the works.”

The teaching concept

Becker centres both on theory and practice in every lecture. He launches a subject by reproducing a philosophical idea and explaining a piece of the theory. He then asks students directly to what extent they recognise this theory from the practice in their own field of expertise. “At that moment the theory must immediately be recognisable and relevant to the students. This exerts demands on how you approach the theory, the emphasis you place and on how you can retranslate the remarks from the lecture room back into the theory.” Becker believes it

important to educate students in how to create relevant connections between theory and practice. “On the one hand you should never renounce the academic community’s identity, whilst on the other you need to keep a perpetual eye on the practice and context within which people work. The academic way of looking at things needs to be cultivated, but is in itself little more than eyewash if it cannot be directly applicable to practical themes.”

Becker continuously oscillates between the bigger ethical theories and their application to themes in a wide range of practical settings. “Duty ethics takes as its starting point that a core of ethics consists of duties imposed on people. That evokes all manner of questions. What is a duty? Is it a positive or a negative thing? Immanuel Kant stated that you can construct duties through mental activity alone. Not based on emotions, religion, traditions or power, but purely by drawing on your mental capacity you can determine what your duties are. I then translate this into notions recognisable to everyone, such as professional confidentiality, contracts or integrity.

“Or I look at big data from an ethical viewpoint. This immediately throws up a whole raft of different ethical questions. To what extent does the image ‘painted’ by large data files in any way reflect reality? Does it make any difference whether a scientist or a commercial company researches big data files? What are the consequences to privacy or human rights of recording data? I recently talked about this with a group of evening class Business Administration students. Someone in the room worked for a large web shop and explained that all the knowledge

they need is extracted from algorithms which follow customers' behaviour on the website. They no longer need any management science or social science to do this. So what is the value of science? In a dialogue with someone in an example like this, I try to bring the philosophical dimension to the fore. Indeed one group will react differently from another, but there always comes a moment when the energy is released."

Becker is also regularly asked to give a lecture, courses or advice on ethics beyond the campus boundaries. The navy, businesses, GPs, judges, TV-programme editors; they all know how to find Becker's door. Whatever the target group, his approach – introducing the theory, before engaging the discussion with stirring practical issues – is always the same. "I prepare thoroughly with the target group in mind. That doesn't necessarily always take a great deal of time, but I will make the effort to know what is going on out there. For example, if I give a talk to a housing association, I'll consider their objectives, their mission and what the primary notions in the sector are. I think carefully about such an organisation's role in society. From there I develop a number of ideas which I'll use to nourish the discussion. This of course sometimes works better than at other times, but it's in these different settings beyond the campus that I've learned how to position myself as an ethicist. Practise in these different contexts has enabled me to approach the lecture room setting with empathy."

The two poles which Becker continuously hovers between also always inform the assignments he sets his students. First the theory, followed by the practical application of the theory. For example, he regularly has his students write two papers: an academic paper and a translation of this paper into a journalistic product or policy document. The end products tailored to the practice are always arrived at via the theoretical route. "Management studies students will further on in their career probably write more policy documents than rigid academic papers, but an ability to think clearly is key to justifying policy decisions. I equip them with something that will be of use to them for the rest of their lives."

Writing a philosophical paper is something students have to learn. These papers have a different set-up than most are used to, and the phrasing of the question must be geared purely to the content and not of an empirical nature. So before starting students will first submit a proposal, to which Becker provides comprehensive feedback. "I always press on my students to keep the phrasing, the core of the question, as narrow as possible. I have yet to see a student whose question I thought was too narrow, and I've seen thousands. I always challenge them: be the first to present me with a question that is too confined! Giving individual feedback to all proposals is very time consuming, but it's critical. Only then will they have distilled a research question that is good enough to write a paper on. Students regularly give each other feedback throughout the writing process, a process I closely monitor. Lectures come easily to me, so this is where I regain some of the time absorbed by assessing the proposals. Still, something could be improved in the proposal process; I think I'll introduce tighter instructions for the proposals next year."

Both the theory and its practical application are reflected in the examination. "My exams are not particularly difficult and the success percentages not very dramatic. My course does not have to be a stumbling block. In the last lecture I always give out exam instructions, talking about it for around 15 minutes, and I also regularly set example questions during the course. If during a lecture I find attention wandering, I immediately switch to an example question. That usually gets students sitting up straight again."

Reactions and results

Becker always manages to get the students to at least recognise the relevance ethics has for their own field of expertise. "Even when the theory is quite abstract sometimes and my course not quite what they're normally used to, they do recognise the alterity. This is different, an alternative way of looking. Some enjoy that, others find it a bit of a challenge. I'm not always the most popular lecturer in the faculty, but students also never mark me down as 'inadequate'. Most

think I'm a reasonably good teacher. 'He demands things from you, but you do reap the benefits' is what I often hear. On average, about a quarter of the students never really quite get it, a quarter thinks it's fantastic and mention in their evaluation that it finally made them think things through. The rest sort of hover in between."

Becker also lectures in the Philosophy Bachelor's and Master's programmes. The papers that students from other programmes write are markedly different, according to him. "When philosophy students write it's something entirely different. I mean, students from other programmes, after just one short course in ethics will not all suddenly become budding philosophers. Based on their research question they will often produce a wonderful paper, quite successful as an end product. However, the thinking levels and analysis muscle that you would expect as a philosopher is often lacking. Philosophy students on the other hand develop a creativity, sensitivity and writing prowess not easily achieved. If I expected to see those levels from other students I'd run into a lot of problems. And their writing would probably only suffer for it. Many do come quite far though, with most achieve something like 7 to 8 out of ten. However, everything I mark as 'pass' is indeed 'a pass'. They never include a paper of which I cross my fingers and hope the review committee never sets their eyes on that one."

In many curricula, ethics is the odd one out. The course differs from the usual pattern of the programme. "Students and programme coordinators often mention that they consider the scientific level of their programme deepened by it. I provide academic input to these programmes by adding reflection from ethical theories. Down the years I've increasingly come to realise that isolated thinking is actually very relevant to society. I am also genuinely fascinated by military ethics, business ethics and political ethics. It's the areas least ethical that I find most attractive. I occupy a privileged position, because I can draw the two things together; extreme thinking and its application."

<i>Course (a.o.)</i>	<i>Ethics of Digital Media (B2/3; 6 EC)</i> <i>Legal Ethics (B3; 2 EC)</i> <i>Administrative Ethics (MA; 6 EC)</i>
<i>Programme (a.o.)</i>	<i>Bachelor Communication Science</i> <i>Bachelor Law</i> <i>Master Public Administration</i>
<i>Numbers</i>	<i>Varies per course</i>

ATTENTION

Challenge

Students are challenged to cast a philosophical eye over their own area of expertise. However they don't have to become philosophers. The balance is exactly right.

Collaboration

Students regularly give each other feedback during the writing process.

RELEVANCE

Applying the theory

Both the theory and the practice are addressed in every lecture. The philosophical theory is recognisable and relevant to students' fields of interest. The end products are fine-tuned to the practice and always arrived at via the theoretical route.

Connection with interests

Based on the theory, students introduce content and examples from their own practice, as well as the context in which the theory is applied.

Preparing for exams

The theory and its application are both addressed in the exams. If attention slips during a lecture, this can be immediately remedied by introducing an example examination question.

CONFIDENCE

Adaptive teaching

Before lectures, the lecturer will peruse the target group's area of expertise to accurately place the ethical theories. Further detailing of the course is partly determined by students' input.

Structure

Instructions are clear and focus on both the result and the process. Students are also provided with example questions prior to the exam. Subjective thinking must be sourced from the students themselves.

Supervision

Students get ample feedback on their research question, to head off hitting the buffers when writing up their final piece.

SATISFACTION

Experience

Students develop a new perspective, relevant to and practical within the context of their own field of expertise.

Usable end product

Students write an academic paper, as well as a translation of this paper into a publishable journalistic or policy piece.

Attention, Relevance, Confidence and Satisfaction are the four elements of the ARCS-model (Keller, 2010) that can be used to identify motivational aspects of teaching concepts.

SIMULATED

EDUCATION

DR. LIZE GLAS



SIMULATED EDUCATION

Striving for consensus within the context of international law

47 member states discuss human rights issues in the United Nations Human Rights Council (UNHRC). Their aim is to improve and protect human rights worldwide. Among other things, a meeting of the UNHRC strives to draft and adopt resolutions, to be carried by as large as possible a majority of the member states. This UN body's discussions and consensus-shaping acts as an example to other areas of international rights in which national opinions can sometimes be at loggerheads with international interests. How complex it is to maintain a position in an international context, whilst simultaneously striving for consensus, is difficult to imagine if all you ever do is read or hear about it. In the Various Branches of International Law course Lize Glas and her colleagues therefore have their students simulate a UNHRC meeting. Students in pairs adopt one of the member states' stances, to experience personally the complexity of negotiation and adoption of a resolution. "The chance of any student at some point actually representing their country at the UN is of course remote, however this teaches them how to explore in-depth someone else's position. And far more so than if they were simply to be presented with a case and then asked what they think a judge's decision should be. As they 'live' the role of a specific country, they also learn to comprehend a position in depth, a position perhaps they would not otherwise adopt, and in the process learn how to achieve what they desire by negotiation."

The teaching concept

In the Various Branches of International Law course, each week students follow a lecture and a seminar which centre on the various sub areas of international law such as international trade law, international environmental law, international criminal law and human rights. Legally binding international treaties are concluded for many of these sub areas which the various countries commit to when signing. A number of nonbinding protocols are also drafted, such as guidelines and resolutions. In the course week covering human rights the seminars often concentrate on the complexity of searching for support and consensus when creating a resolution. This 'human rights' week in the course links two seminars consecutively, creating a block of three hours during which a 'UNHRC meeting' can be role played without interruption. Glas's colleague Rosa Möhrlein developed this simulated setting, which is performed in four parallel work groups each of 20 students. The aim is to adopt a resolution at the end of the meeting, supported by at least two-thirds of the member states.

As preparation, the aim and the set up for the simulation are explained in a separate seminar, in which all teams get to peruse and study the 'simulation guide'. This guide is a concise manual which sets out precisely what is expected of the students, what the rules are during the meeting and what the framework of the debate will be. It also contains instructions on how to write resolutions and amendments, as well as offering an example resolution. "These are highly formal texts, therefore the simulation guide describes exactly what verbs and formulations students must use when creating their texts."

In pairs, the students are appointed a country which they will represent during the meeting. They prepare by reading the 'situation paper' in the manual. This paper explains the issue to be discussed at the meeting. The students then research various sources regarding 'their' country's position on the matter. Based on this investigation, they then write up a 'position memo', which sets out their country's standpoint. They submit this position memo to the lecturers prior to the meeting. "Last year's subject was sexual violence, as a result of the #MeToo discussion. We then carefully chose the countries students were to represent so that for example the opinions on the position of women across their various societies differed considerably, ensuring some interesting clashes."

One of the student teams is awarded the role of Chair. These students are prepared separately by the lecturer and given a detailed explanation regarding the procedure. "They chair the meeting and need to ensure that everything is run according to procedure. The simulation guide also provides a flowchart of the meeting's progress. Depending on how the debate runs, a more formal or a less formal procedure can be chosen, and a high or a low number of motions may be tabled. They can peruse this flowchart during the meeting and are able to utilise special software available to United Netherlands students for simulating UN conferences."

The country teams explain and substantiate their viewpoint on the issue at hand in their position memos. Their substantiations not only refer to the historical background and social nature of the country, but also to the appropriate national legislation, treaties and previous resolutions the country has agreed or disagreed to. "We ask the students also to consider in advance which points will be red lines; absolutely non-negotiable for their country. The teams base their opening statements on their position memo's text, as well as using the memos when preparing a draft resolution to contribute to the meeting. In total, they spend about five hours preparing and three hours on the meeting itself. The aim is to adopt a resolution at the end of the meeting to be carried by at least a two-third majority. Like life however, it doesn't always work out that way, but that's fine too."

Prior to the meeting, the lecturers assess the position memos and provide the teams with feedback. A memo marked as inadequate can be resubmitted after processing the feedback. The position memo must be of sufficient quality to be included in the meeting. The lecturers play no active part during the simulation; they only intervene when things go badly wrong. For the most part they are kept busy assessing the students' performance during the simulation. Each student will be given individual feedback after the event. A sufficient performance during the meeting is a prerequisite for taking part in the exam. The simulation is rounded off with a short evaluation, in which the lecturers give general feedback on the process. This also provides the students with an opportunity to describe what they thought of the simulation.

Reactions and results

As various areas of international law are dealt with in the course, there is little space for plumbing specific subjects in depth. Glas and her colleagues turn this limitation into a virtue by focusing more on expanding students' academic skills and personal development during the seminars. In the seminars, students study international law through the prism of various professionals, immediately obtaining an image of the various roles in the field.

"During the simulation, students reinforce their standpoints both orally and in writing. They learn to back up and defend a position, negotiate towards results and in doing so experience how difficult it is to arrive at a consensus. By becoming immersed in the role of a different country, they are made aware that a multitude of different positions exist and what these can be. They experience it as a serious educational learning curve to think and argue from a context beyond their native Dutch one. And reaching a consensus is a new goal for them. In other courses, where they act as lawyers in a court simulation, they are more used to arguing solely on their own individual ground."

During the simulation Glas is positioned close to the chairpersons, to allow her to steer and guide proceedings if

required. “Things never go entirely smoothly, but that’s all right. Sometimes I pass a note along saying ‘think about this’, or I give a nudge such as: ‘I would say a little more on that’. But I only really intervene if things go totally awry. This year we were fortunate in having a couple of chairpersons with previous experience of UN simulations. They really took to the role of chair.

“I think it’s great to guide the simulation process. Every time it’s surprising how things unfold; the sort of texts and arguments students come up with and what eventually ends up on the draft resolutions they prepare. Some throw themselves into role and debate with fire and gusto. Others are more reserved. At times during the debate students will forget that they really need to toe line of their ‘adopted’ country’s arguments. They tend to be blown of course into the gulf stream of their own personal opinions, opinions that often do not entirely conform with their appointed country’s.

“In general, students find the simulation fun. They indicate that in particular they learn a great deal from defending their own interests whilst striving to achieve a joint goal. They experience how complicated this can be with so many viewpoints marshalled together. It’s this awareness we aim for: realising how things work when so many countries sit down together and what the process entails in this type of decision-making.”

<i>Course</i>	<i>Various Branches of International Law (B3; 6 EC)</i>
<i>Programme</i>	<i>Bachelor Law</i>
<i>Numbers</i>	<i>80 students</i>

ATTENTION

Challenge

Students are expected to present a resolution at the end of the meeting, a resolution supported by a minimum of two-thirds of the parties.

Collaboration

Students in pairs prepare a position memo and opening statement representing a country they have been appointed.

Involvement

The simulation is chaired and lead by the students themselves. The duo presiding are separately prepared by the lecturers with a detailed explanation of the procedure.

Self study

Students experience an intensive preparation process, based on the simulation guide, the situation paper and source research. They write up a position memo on the standpoint of the country they represent.

RELEVANCE

Insight into the professional field

During the seminars, students investigate international law through the eyes of various professionals.

Preparing for the professional role

Students in pairs adopt a UN member state's position, to experience the complexities of negotiating human rights issues and drafting resolutions in an international setting.

CONFIDENCE

Intensive education

This particular part of the course lasts three hours, ensuring that a UNHRC meeting can be simulated without interruptions.

Structure

The simulation guide sets out exactly what is required of the students, what the rules are and how the debate will unfold. It also describes how resolutions and amendments are written and includes an example. There is a flowchart available to help the meeting proceed.

Supervision

Prior to the simulation, the lecturer assesses the position memos and provides the teams with feedback. Lecturers will only intervene during the simulation if something goes seriously amiss.

SATISFACTION

Experience

Students learn what it is like to be UN member state and to become aware of other positions that exist in parallel to their own. They experience what it is like to think beyond the Dutch context.

Personal insight

Students learn how to defend a position, negotiate towards a result and experience how difficult the process is of arriving at consensus.

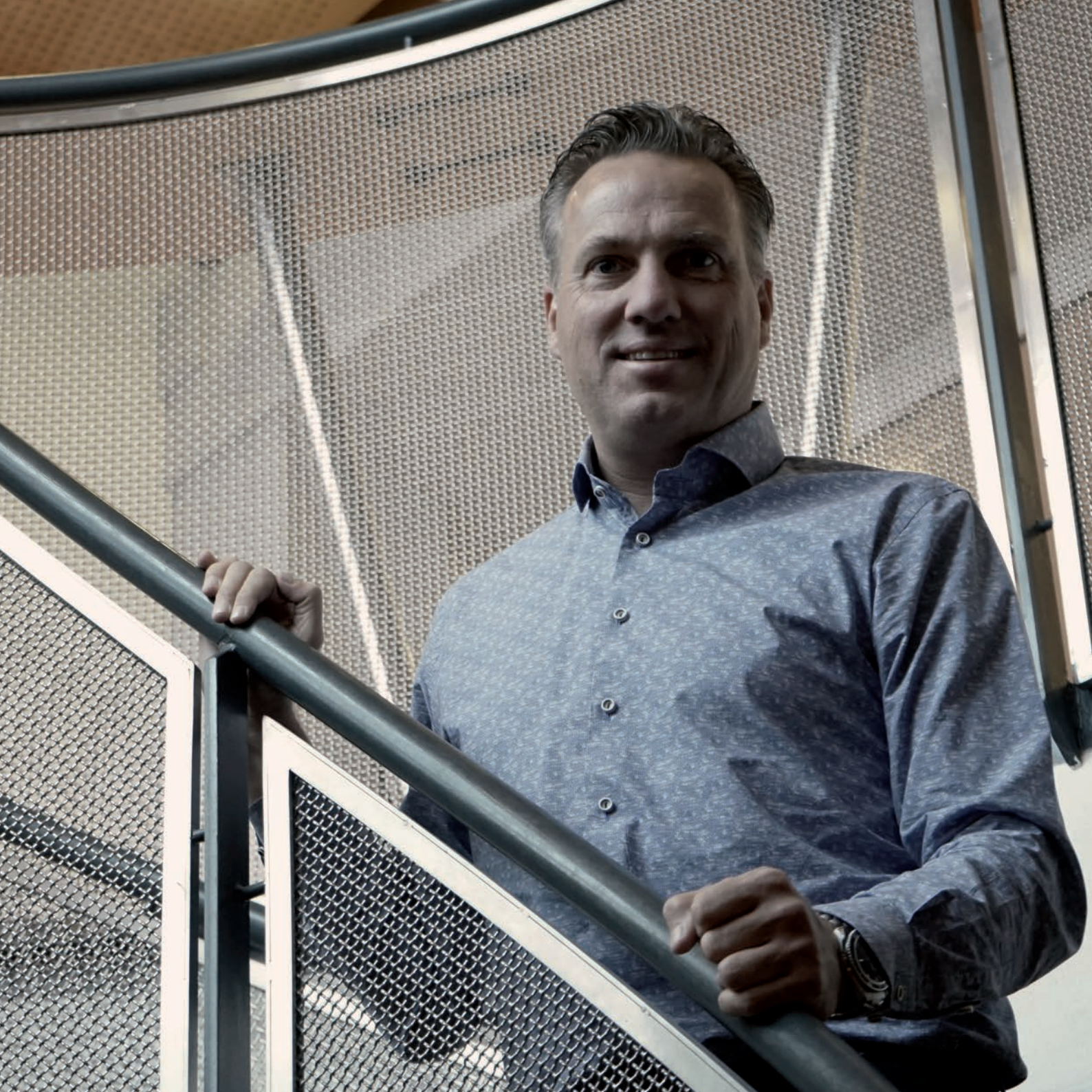
Visible achievement

Students act individually during the simulation and receive individual feedback on how they did after their performance.

Attention, Relevance, Confidence and Satisfaction are the four elements of the ARCS-model (Keller, 2010) that can be used to identify motivational aspects of teaching concepts.

INNOVATION PROJECT

PROF. DR. JOOST HOENDEROP



INNOVATION PROJECT

Realising innovation in care

Radboudumc wishes to train doctors who learn from their patients, who give due attention to context, science and complexity in health care and who contribute towards innovation. To realise this, a new curriculum was introduced for the Medicine and Biomedical Sciences Bachelor's degree programmes in 2015. The starting points for the new programme include giving students the opportunity to place their own emphasis by involving real patients from the very beginning of their studies and dealing with real issues. But are students already able and mature enough to think on issues already stretching the borders of science when fresh from secondary school education? Can they contribute anything to health care at the very beginning of their studies? The answer is a resounding yes; by immersing students in the medical world, surrounding them with experts and by taking their own fascination, amazement and interests as springboards. This is exactly what happens with the Innovation Project. First year students devise a plan for medical innovation and develop this together with a real client. Under the supervision of Joost Hoenderop and many of his colleagues they devote an entire year to this. "We want students to experience the real world as soon as possible: a great end product to be justly proud of and, just as importantly, the often difficult road leading to it."

The teaching concept

The Innovation Project starts at the end of the first semester with an innovation day. On the day, students participate in 'speed-dates' with Radboudumc innovation experts, are handed the opportunity to float their fresh ideas and to form

themselves into teams. "The first year we ran this, panic ensued among the students; they thought they'd never be able to handle it," explains Hoenderop. "Spontaneously they forgot they could actually swim. Now on the day we invite a number of second year students along to present the innovations they developed the previous year. This instils confidence in the new students that they will also cope fine with the proposal." The students form groups of three and decide upon the issue they would like to tackle. "We ask students to think about their experiences in the first semester and take a closer look at their own environment. What do you see, what struck you, what surprised you, what touched you? This creates the context and baseline from where they start."

In the second semester students divide the roles within their teams and come up with an innovative idea or proposal. "We want them to spend a relatively longer period on defining and detailing the research question: what is the issue, what would help the patient, what can you find in literature about this topic? We encourage them to think outside the box and to not be lead too much by the nose by what already exists. They launch a quest for examples and sometimes arrive at no less than four or five research questions. They then look for a client who would be interested in developing their innovation together with them, as well as an innovation expert within Radboudumc able to monitor the project from the sidelines."

This client can be a research department within the hospital, but external parties are also encouraged. The client is expected to contribute by providing knowledge, challenging the students and honing the question. The programme makes information available for external parties and contact takes place

throughout the process. “These are fresh, beginning students, so we have to manage expectations a little, but usually things turn out fine.” The programme’s innovation expert feeds the process and ensures that the teams avoid getting mired in the sand. Eventually, in consultation with the client and the innovation expert, the idea they ultimately work on floats to the top. “One example was a team keen to develop something for diabetic patients. These patients really need to watch their diets to maintain their blood sugar levels, otherwise they can experience a ‘hypo’. The students wanted to develop a glucose patch that could regulate the blood sugar levels.” At the end of the second semester, the teams submitted a realistic project proposal to the ‘project board’. In the third and fourth semester students perform their project, which absorbs six to eight hours per week. The teams are responsible for the planning, performance and progress of their activities and the results of the end project. All three team members work on the innovation, dividing the tasks among them, guided and supervised by the client.

The students maintain a logbook of the entire journey, recording who did what. They also provide feedback for each other on the collaboration and on each individual student’s contribution to the project. “A fixed format is used for giving feedback. The students must process the feedback they’ve received in their individual end reports. We developed a rubric for this end report. This means students know exactly what is expected of them and how they will be assessed.

“From the outset students know they will be required to give each other feedback. They also need to write up this feedback in the form of a report. If they fail to contribute, they know this will come out in the report. The feedback conforms to a format, which helps keep it ‘safe’, and the attention paid to feedback by the programme’s Professionalism Learning Path also bears fruit here. They are more than capable of giving feedback and can at certain junctures be exceptionally critical of each other.”

During this period, guidance from the programme includes offering workshops, for example on interviewing techniques or on how to create an impact analysis. The teams can also attend walk-in hours or make an appointment with the innovation expert to discuss progress.

A conference week is organised at the end of the fourth semester, in which the teams present their innovations. During the week, second years students present their research projects and third year students their research internships. “They of course are all keen to come along and watch each other’s presentations and act as an enthusiastic public. As well as the presentation, at the end of the project the students write up a group product or report on the innovation process. This is further complemented by the students’ individual pieces in which each reflects on his/her own development and on the peer feedback they’ve received. The students are also assessed as a team with a rubric completed by the client. To ensure that assessments of the different teams are kept comparable, the innovation experts follow the process in the background, which enables them to homogenise matters if and when necessary.

“Most teams manage to come up with something interesting during the Innovation Project. Some teams have even been capable of stretching the process all the way to arrive at an end product that really works, a product they’re enormously proud of. The team with the best innovation can win 10,000 euros for the department in which the project was performed. The award can be used by the students to elevate their project to a higher level or they can for example use the funds to attend a conference. There is also an award for the team which produces the best report on why their team’s project failed to make it. Practicalities can turn out to be unmanageable and then things invariably fail. This can be a true educational learning curve and something we also wish them to experience.”

Reactions and results

“The Innovation Project is intended to make students think for themselves as early as possible in the curriculum; to ponder the limitations of knowledge and what, as an academic, they may contribute to this. This permits the practical and theoretical side of their studies to run in tandem, providing an excellent balance. For students this is an outstanding learning experience. They end up with

something they can be immensely proud of; they see their achievement and its immediate relevance.”

The project delivers an amazing diversity of products: a First Aid course for secondary school pupils, experiments with wearable technology that continuously measures patients’ bodily functions at a clinical department in the hospital, a campaign for Nierstichting (Dutch organisation for kidney patients) to encourage people to eat less salt, and much more besides. “In my view a great example is the team who interviewed 100 members of a patient’s group who use a colostomy bag. The interviews revealed that many of the patients are troubled by itching. In collaboration with a manufacturer of medical supplies they developed a colostomy bag produced with softer materials that negates itching. The company had never considered this option. You also notice that clients just cherish working with young people who display an enthusiasm for achieving something. A fun, even naive, out-of-the-box look at things can prove exceptionally refreshing.

“It is however a path with ample curves to negotiate: making appointments, writing emails, finding a client, doing the research, meeting deadlines. The students will inevitably experience stress in the process. All deadlines are set in advance, so if they leave things a little late, they will need to produce quite a bit at the end of the process to push the project across the line. They are solely responsible for the planning and the progress. That can produce quite hectic results at times, but it’s this responsibility that we wish them to experience early on in the programme. Naturally we do take the pressure students experience seriously. We are always alert not to ask too much of them and to look for ways to facilitate progress.”

Hoenderop is also vigilant making certain the innovation project doesn’t absorb all their time. “The enthusiasm of lecturers and clients can be contagious, but you have to be careful it doesn’t catch fire and become a self-fulfilling spiral. A balance needs to be struck between what we want and what we can do. It’s something lecturers also need to get used to. There is more one-to-one teaching than they are familiar with, which demands a different approach. For us it can also be a challenge to streamline and coordinate this diffusion of

mentors and supervisors. That is something we still struggle with. How realistic is all this? Something we need to figure out jointly within the organisation. That needs to settle on to its own path, but things are getting smoother all the time. We must ensure we safeguard the attractive elements, at the same time strive not to make things too grand and/or too complex.”

The first students who experienced the new curriculum are now reaching the end of their Bachelor’s degree phase. Hoenderop thinks it is still too early to identify any real differences, however he does notice that students have become more mature in their approach towards issues and when taking responsibility. “We hear from supervisors that these students ask entirely different questions; apparently this type of education does really bring them something. We challenge students to take responsibility for their own learning process and they clearly take this on board. They ask good questions, take the initiative.

“The conference week rounds everything off very nicely. The students are there full of pride presenting their projects. They have after all become a little bit of an expert in their subject, a subject they have been busy with for quite some time. They now know more than their fellow students about this particular bit. Together with their client they have developed something which wasn’t there before and which really matters. That’s a pretty cool position to be in. It provides them with confirmation that it’s quite achievable to work towards something like this. And for some students it doesn’t just stop here; they go on to present their results later at a real professional conference or work in partnership with someone on a scientific article on their innovation.” Students also learn to handle the setbacks. “Sometimes things can fail for a perfectly unforeseeable reason, that’s also how things are developed in the real world of innovation. The number of innovations that actually go on to make it is relatively small. What’s imperative however is what you learn on the journey.”

<i>Course</i>	<i>Innovation Project (B1; 7 EC)</i>
<i>Programme</i>	<i>Bachelor Medicine, Bachelor Biomedical Sciences</i>
<i>Numbers</i>	<i>430 students</i>

ATTENTION

Challenge

Students work in teams and are challenged - immediately in their first year – to contribute to a care innovation. The team with the best innovation wins a prize. There is also a prize for the team which can substantiate best why their project failed.

Collaboration

Students learn from and with each other. They give each other feedback on the collaboration as the project progresses and on their personal contribution to the project.

Responsibility

Student teams are themselves responsible for their project's planning, performance, progress and results.

RELEVANCE

Connection with interests

Students are free to select a subject, plumbing their own fascination and interests for a starting point.

Preparing for the professional role

Students learn to work together with professionals on innovation in care.

CONFIDENCE

Adaptive teaching

The project is supported by relevant workshops, teams can attend walk-in hours or make appointments with experts to obtain advice.

Structure

The work follows clearly set out formats and a rubric has been created which provides a guide for students setting out exactly what is expected of them and how they will be assessed.

Supervision

Students are swarmed by experts. The client helps with sharpening the idea and by setting further challenges. The programme offers coaching and support.

SATISFACTION

Experience

Students learn early on in their learning process to solve problems and take responsibility for their own development. They also learn how to handle setbacks.

Insight into knowledge and skills

Students develop expertise in their subject. They see how important their work is and that they are able to deliver an appropriate contribution.

Usable end product

Students work together with their client on a new product which previously did not exist and which really makes a difference. This product may even be implemented by the client.

Visible achievement

Students arrive at some outstanding end products they can be duly proud of. The teams present their innovations during a conference week.

Attention, Relevance, Confidence and Satisfaction are the four elements of the ARCS-model (Keller, 2010) that can be used to identify motivational aspects of teaching concepts.

TEAM BASED

LEARNING

PROF. DR. MARK HUIJBREGTS



OTTAWA COUNTY
FISHITOWN
BETWEEN MICHIGAN AND LAKE HURON
NORTHWEST
FISHING GROUNDS

TEAM BASED LEARNING

Substantiated discussion on current environmental issues

After presenting a particular course for a number of years, Mark Huijbregts interest in it had gradually waned. He was ready to refocus his full energy in a different direction. He discovered that one of his colleagues, who was coordinating the obligatory second year course 'Man and the Environment', was having similar feelings. Students' apparently valued the 'Man and the Environment' course relatively lowly, not always perceiving the relevance of it. Huijbregts recognised both an opportunity and a challenge and after some discussion agreed to swap courses with his colleague. He decided to entirely recalibrate the 'Man and the Environment' course following the principles of 'Team based learning'; a proven, effective teaching method developed over the past thirty years and applied mostly in the medical sector and at British and American universities. Huijbregts immersed himself in the method and sought collaboration with experts at the University of Amsterdam's Faculty of Medicine, as well as education specialists at Radboudumc. Both hospitals already applied the method in their teaching. "For me, the support of experts was essential for the success of the revised course."

The teaching concept

The aim of the course is to teach students how to analyse an environmental issue and propose relevant solutions. To do so they must be able to map out the chain of cause and effect and acquire an overview of the consequences of interfering at various points in that chain. Four themes, picked from the top five of global environmental issues, form the core of the course: climate change, chemical pollution, land use and

invasion of alien plants and animals. All four themes are subject of research at Radboud University, and each theme has certain aspects which can interest all facets of biology. This leads students to direct contact with subjects they may research later in their careers.

With the new set-up, it is imperative that students directly apply theory to a specific issue, such as countering climate damage caused by coal fired power stations. There is only one plenary introduction lecture, to explain the course's method. This is complemented by an intensive day per theme, in which students work together in teams of five to six. Huijbregts personally composes the teams to ensure a mix of gender, background and interests and to bring as many different perspectives as possible together within the team dynamic. To prepare for the theme day, students independently study the specific theme by following a raft of information available in the digital learning environment. The material includes articles, videos and links to websites. In future, Huijbregts wishes to expand this with knowledge clips on specific subjects which students often find difficult.

A theme day starts with two tests on the material studied, which form part of the final marking. These tests each last about twenty minutes and ensure that students arrive well prepared for the theme day. The students start with an 'Individual Readiness Assurance Test' (IRAT) which they sit individually; a test of twenty multiple choice questions regarding the subject matter. With no knowledge of their results, they then sit the 'Team Readiness Assurance Test' (TRAT) immediately afterwards. They answer the same twenty questions again, but now jointly as a team. Each team

is given a scratch card. Once the team agrees on an answer, they scratch open the box of their choice. If the answer is correct they move on to the next question. If the answer is wrong, they have to scratch open a new box and so on until they find the correct answer. The number of scratched boxes determines the team scoring; the fewer boxes scratched, the higher the score. Based on the results of all the teams, the theme lecturer then explains the theory further. Only the subjects which the students have not quite understood, even after the team discussions, are selected for this part. In preparation, the lecturer will have PowerPoint slides available on all subjects but, as mentioned, these will not all be used. After this mini lecture, the teams are divided into three groups. Two groups independently start on a computer assignment. The third group will start working on the 'application'. However, all teams do both the computer assignment and the application during the day, which takes up the rest of the theme day.

“When designing a course involving Team based learning you always start with the end and work backwards: what are the learning objectives and what case do you select to study? Per theme, we then set out what students will be expected to achieve later in their professional life. We have selected the applications and developed assignments based on this. The challenge is to develop material that stimulates discussion and can not be settled with a simple yes or no response.”

For example, during the assignments students are expected to perform all manner of calculations and tasks that will both apply and stretch their knowledge. “By calculating how much CO₂ a coal fired power station emits, or how much of a chemical substance accumulates in the human body, students also acquire a quantitative insight into the subject.” Another assignment, which always forms part of the course, is to create a poster. During the application, the actual kernel of the course, teams apply their knowledge by clarifying an opinion on certain issues and/or dilemmas. “For example a question could be: what will have the most effect on reducing CO₂, the introduction of a ‘meat tax’, migrating to electric cars, closing down coal fired power stations or generating bio energy? On the table lie cards marked A, B, C and D. Per

argument students must confer for five minutes in their team to arrive at a consensus and then raise their card. The teams seldom ever all hold up the same card.” The lecturer then acts as a discussion leader and prompts the groups to air the arguments for their answer. This allows for exploring the possible solutions together with the teams.

The team of lecturers involved in this course consists of a fixed core of six lecturers, supported by student assistants who help with the computer assignments on the theme days. Prior to the course the lecturers will have undergone training in coaching and supervision techniques geared to this approach. The trick is not to start lecturing, but to leave the learning process as far as possible in the students' realm. “An example of this is the position you as the lecturer adopt during the discussion. By physically standing behind the group when asking questions and at a distance from the student who is talking, the discussion will easily swing back and be picked up by the students again.” Lecturers are shown the advantage of thinking up provocative arguments and during their training will also have discussed strategies of how to react to given situations, for example when all the teams deliver the same answer.

After two theme days, the students anonymously assess each other within their team. In five questions they evaluate everyone's contribution to the tests and the applications. Every student divides 40 points among his fellow students. This process is repeated at the end of the course. Students round off the course with a test, the result of which counts 50% towards their final mark. In addition, the three highest IRAT scores account for 25%, the three highest TRAT scores for 15% and the peer feedback from fellow students delivers the last 10%. Students must pass the test to complete the course.

Reactions and results

“I'm extremely satisfied. Students actively take part and the discussions are pretty high quality stuff. As they are being tested before the application, students arrive well prepared. They make certain to have studied the material beforehand,

as this counts directly towards their marks and because their fellow team members will also suffer if they come unprepared.

“Talking about the subject to each other during the discussions also makes it easier to remember the material, which of course facilitates the learning process. In the last course, 80% passed in the test, an unprecedented high score. Another 10% passed in the resit.”

Huijbregts notices a division in the students’ reactions. “Some take to it like ducks to water. They enjoy working in teams and also appreciate they are being assessed on their performance. Other students have difficulty with the notion that the material is not just simply spoon fed to them. To prepare, they need to independently study the material provided. Students wish to know how to study in order to successfully finish the course. The individual testing and the team test help with this. The multiple choice questions act as good preparation for the final exam. The students also learn a great deal from this mode of instruction. They experience how much fun it can be to follow education in teams and just how much they can learn from each other. I encourage them to experience this and it’s also what I hear back from the evaluations. I believe they learn at least as much from each other as they do from the lecturer.

“Sometimes students think the applications and the assignments a mere series of repeated moves. They go through the process four times, so four times and application and four times having to create a poster. For us this means searching for sufficient dynamics. For example, we reduced the application from four to two hours. This turns out to work better as a learning moment; if you let it take longer, the energy simply drains out of it. For you as a lecturer as well, as you do this particular application on three occasions.

“We have set ourselves three years to make a success of this. The course has now run twice along these new lines. The first year was particularly hard work, both for us and for the students. Everything was new and we also had

trouble finding suitable accommodation. which meant we were spread out across the entire university. There were a lot of comments and we were scored 6 out of 10 in the first instance. The second year we bettered that to score over 7 out of 10. Not bad for a course students weren’t originally very enthusiastic about.”

Huijbregts would like to use Team based learning in more courses. “One course of 3EC is actually too small to reproduce the optimum learning effect of this method. For example, students give each other feedback, but are left little time to develop following that feedback. In the places where they use this method of teaching over a whole semester, you see team members getting to know each other better, feedback becomes more dynamic and students register more development.

“The course is also intensive for the lecturers. It makes all the difference whether you deliver a series of lectures in which you know the material like the back of your hand or you do this. Team based learning is full-frontal teaching and the course demands more hours than it used to. Thankfully we’ve been able to automate quite a bit of the marking process. If we could do the same with the peer feedback, then the teaching load would come out about the same. But I do really enjoy my time with the groups and it certainly delivers some excellent educational results.”

<i>Course</i>	<i>Man and the Environment (B2; 3 EC)</i>
<i>Programme</i>	<i>Bachelor Biology</i>
<i>Numbers</i>	<i>160 students</i>

ATTENTION

Collaboration

Students learn by conferring with each other, discussing and working on the same issues. The course is partly a team effort due to the team tests and assignments.

Self study

Each partial theme starts with an individual test and a team test on the material, all of which count towards the final mark.

RELEVANCE

Applying the theory

Students directly apply and expand their knowledge during assignments and discussions.

Insight into the professional field

The emphasis is on environmental issues currently researched at Radboud University.

Preparing for the professional role

The learning activities are selected based on the skills required in later professional practice. Working in teams also contributes to this.

Preparing for exams

The learning activities during the course form an intensive preparation for the exam.

CONFIDENCE

Adaptive teaching

Lecturers only supply an explanation regarding the material provided for study, or they address any misconceptions if they arise. Knowledge clips are available for the more difficult subjects.

Intensive education

The teaching takes place during intensive theme days rather than a series of loose lectures and seminars.

Structure

Students work hard, following tight procedures and assignments with clear expectations and criteria.

Supervision

The responsibility for the learning process lies as far as possible with the students. The team of lecturers receive training in the coaching and supervision skills required for this approach.

SATISFACTION

Self insight

Students experience that they are able to deliver a relevant contribution to discussions on current and often complex issues.

Attention, Relevance, Confidence and Satisfaction are the four elements of the ARCS-model (Keller, 2010) that can be used to identify motivational aspects of teaching concepts.

ADVICE PROJECT

DR. PAUL KETELAAR



ADVICE PROJECT

Performing a communication project for a client

After studying, many Communication Science students eventually land in jobs offering communication advice to businesses or government agencies. For entry positions as junior communication consultants they need to compete in the labour market with students with higher professional communication qualifications. Radboud students are distinguished by their scientific knowledge of communication, influencing and media, but they also need to demonstrate that they are able to translate theory into practice. Paul Ketelaar has designed the Research in Practice Master's course with this in mind. The course sees students working in teams on a communication issue for a real client, developing both their creativity and flexibility in the process. "These are key core values in the current academic market."

The teaching concept

The course starts with a meeting in which the students are handed briefings regarding the available assignments. These could include: considering an umbrella platform for dance events organised by the Doornroosje pop music centre, advising the Province of North Brabant on how they can interest more younger people in provincial politics, helping a company to test virtual reality training for cash register staff on customer focus, or researching young people's views on anti-alcohol campaigns for an organisation that designs interventions. Ketelaar ensures that the offers are both diverse and as well as possible connect with the programme's various specialisms. This permits students on most instances to be involved in a

project that provides a comfortable fit with the direction of their chosen career path.

In teams of five, the students select an assignment and then arrange to meet with the client for a preliminary interview. Based on the information they compile at this gathering, students translate the client's question or wish into a research question. The question is then detailed up into an individual research proposal, which is assessed by the lecturer. Students then pool the various proposals into a research plan which they address as a team.

To answer their research question, students study and consult a range of literature on the subject and investigate the client's target group. In the process, students acquire direct experience with qualitative research in the form of focus group sessions. The collected data is collated, analysed and processed in a scientific research report. Using this as a base, students then create an applicable, practical advice statement in the form of a PowerPoint presentation and an infographic. This advice is presented at the client's, usually with the management and other staff present. "It is a deliberate move not to let the teams deliver a hybrid product, but a separate scientific research report and communication advice based on the report. They must be able to present both."

The students work as a self-directing team throughout the process to simulate as close as possible the workings of a consultancy agency. As each will be end-responsible for his/her individual input, the tasks are divvied up according to individual affinities. These can include account management, research planning, recruiting participants for the target

group research, organising the sessions or formulating the advice. “Expectations and pressure are high. To obtain a successful result they need to be creative, flexible, fluid and independent. They must be able to reflect and know how to handle disappointment, as team collaboration may not be flawless and working with a client can have its snags. Just like real life really.”

Three lecturers are involved in the course, each of whom supervises around seven teams. “Guiding consists merely of coaching and supporting peer consultation. These are fourth year students. You give them a bit of a nudge every now and then, but you also need to have the courage to let them fly. Along with the coaching, which takes place during the lecture hours, I have dedicated periods in which they can make an appointment to come along and see me. But they’re not obliged to do this. And if not, so be it.”

During the course, students are given an education in which they home in on the specific subjects confronted with during the assignment. The focus lies on certain themes, such as the first meeting with the client, the research set-up, group dynamics and leadership, scientific integrity. In the meantime, attention is given to data analysis and consultancy. Guest speakers are also invited. For example, a staff member of the Blauw research agency setting out the usability of focus group research in practice, or someone from the Volkskrant newspaper showing students how to best utilise infographics to present research data. “The lectures and seminars are often highly intensive. I sometimes lecture for a short time, before moving on to working in a group or coaching session. I throw something into the mix and the teams run with it. During that process I walk around, talk to them and sometimes bring back an issue for perusal with the entire group. It’s more coaching than teaching really. As a lecturer you need to learn how to approach this type of teaching. You have to surrender part of the control you’re probably more used to. During the coaching we are consciously reticent about distributing advice, however you can still give the teams a great deal along the way. They learn a lot from being given the opportunity to fail. For example, they can sometimes forget to keep in regular contact with the client and his wishes in mind.”

During the project the students provide each other with anonymous feedback on their roles in the team. “The peer feedback on a number of crucial elements in the research process is submitted online in their learning environment. We lecturers don’t have access to this. Besides, you don’t need to have your oar in everything. In their individual reflection reports, we only assess how they process the feedback given to them by their team members. We consider their self-reflection and how they handle criticism. I find this much more important than knowing exactly what they think of each other. Finally, their client also writes an evaluation of the team, which we discuss in plenary meetings with each team.”

The ‘examination’ consists of partial assessments during the process, for example on the research set-up, the data analysis and the advisory report, in combination with the final presentation. The students must also write a reflection on their experience during the research process; what went well, what less so in their focus group sessions and how these contributed to the research objective, on the feedback they obtained from their team members and on how the contact with the client went. The products assessed are made up of 50% group work and 50% for the individual contribution. “The teams are not marked down if something doesn’t quite go to plan, but they are evaluated on how for example they process advice. They know that any infographic on qualitative research shouldn’t contain tables with numbers. If these numbers are then included, sometimes because a client demands it, then they will be held to account for this. Scientific integrity is also heavily weighted: do they stick to their scientific principles or will they let the outcome of their research be influenced by a client who seeks to tweak the results a little?”

Reactions and results

“We teach our students a great deal in the programme, but often things can grow lead feet during the scientific process. There is as yet still not enough in the programme to force them into making the translation into the practical. But

in this course, from day one they address how to transform a communication issue into a researchable question, as well as how to transfer scientific findings into detailed recommendations a client can immediately set to work on. For our students this can be a real eye-opener.

“We often see really fantastically creative things. The team with the assignment for the Doornroosje pop podium for example used the image of an owl to express all their ideas regarding the platform. This proved to be a leading thread throughout their presentation. They were somewhat insecure about this at the start and didn’t really feel they could go that far, but I encouraged it. The concept was well received by the client, was genuinely adopted and their infographic is still on display in Doornroosje’s corridors.

“During the presentations at the clients you really get a feel for how much the teams have learned. The students see how well they are listened to within the company and if after the presentation they manage to field question after question, you quite literally observe their confidence grow. With some teams you do see a more academic hush, more of a sort of shyness. You then see a project which has some outstanding content, let down by a lacklustre presentation. That’s feedback you can give them afterwards: what you have there is gold, you seriously do have something to say here, but it’s just not coming across. The opposite occurs as well of course. Teams which on the basis of their research seem to be on thinner ice, can wing it with a sparkling presentation. Both types of teams are fascinating to coach. Working in a team on a concrete assignment pegs it to reality. And of course there’s always something in every team. One of the team members can often be absent for example: how do you handle that? It’s usually a bit of give and take. And what do you do with a client who turns out to have expected something else from them than was originally agreed, or who is difficult to approach? All of these are learning situations.”

The course was formerly 6 EC, not 10 EC. “Previously there was never enough time. It’s a learning process after all. Now you have time to process any setbacks and to really do something with the feedback. That’s incredibly educational.

For teams also it’s now easier to stick to their own pace and rhythm. At the beginning they all travel at about the same pace. However, once research plans have been finalised the differences begin to open up. Some projects run smoother than others and also deliver more. Again mirroring real life.

“Clients also invest both time and money. For example, Doornroosje made tickets available for a dance evening to attract enough participants for the focus group research. Or clients will make vouchers available for participants. For the client, it absorbs 10 hours per team on average, including attending the end presentations and the discussions afterwards. Clients are always enthusiastic, without exception. The data analyses result in highly useable, detailed advice. The conclusions in the scientific report are backed up with hard evidence. The clients are given well considered, superior advice, with teams frequently outstripping the professional research agency. Often these agencies will have a dozen assignments on the go simultaneously. With us you get a team which usually includes at least one or two real talents, who will focus solely on your situation for months on end. The other team members and the clients can also learn from this. Last week I got a whole stack of reports. And of course it’s not my favourite pastime to study thirty reflections over the weekend. But wow! In this instance did I enjoy it!”

<i>Course</i>	<i>Research in the Professional Context (MA;10 EC)</i>
<i>Programme</i>	<i>Master Communication Science</i>
<i>Numbers</i>	<i>75 students</i>

ATTENTION

Challenge

To make the assignment a success, students need to be creative, flexible and independent.

Collaboration

Students deliver a jointly produced product and provide each other with feedback on their individual contribution.

Responsibility

Students are responsible for the planning and progress of the project.

RELEVANCE

Applying the theory

Students learn how to combine a scientific approach with a practical one, bringing the theory to life.

Connection with interests

Students can choose from themes submitted by clients.

Insight into the professional field

Students work on issues introduced by real clients and organise focus group discussions with these organisations' target groups.

Preparing for the professional role

Students work in a self-directing team within a professional context. They experience what will be expected from them in practice.

CONFIDENCE

Adaptive teaching

During the teaching moments, the students zoom in on subjects thrown up by the various phases of the project. This knowledge is immediately applicable.

Structure

The lecturer confers with the client regarding the general scope of the assignment prior to starting. The students do the fine-tuning and work following clear instructions and formats as described in the course manual.

Supervision

The supervision mainly entails coaching and peer consultation. This is intensive at the start but diminishes as the project progresses. The teams can make use of the walk-in hours, but that is not obligatory.

SATISFACTION

Experience

Students acquire experience with project management, in taking responsibility in teams and collaborating with each other and with clients. They experience firsthand the challenges and pitfalls of performing research by assignment. There is time to process setbacks. Students are not assessed on the success or otherwise of the project but on their learning process.

Self insight

Thanks to their studies, students are well aware of their capabilities before entering the job market.

Usable end product

Students can venture far in their advice and deliver practical points for addressing the client's communication issue. Wherever possible, results are implemented.

Visible achievement

Students deliver products they can be proud of and present these to their clients. Students can individually distinguish themselves through their role in the team, their individual research approach, the possible focus group sessions they hold, individual data analysis and upon self reflection.

Attention, Relevance, Confidence and Satisfaction are the four elements of the ARCS-model (Keller, 2010) that can be used to identify motivational aspects of teaching concepts.

PEER INSTRUCTION

DR. PETER KLAREN



PEER INSTRUCTION

Learning by explaining the subject matter in your own words

In many lecture halls you normally find the usual row upon row of seats. The ‘traditional theatre set-up’ – the lecturer below in the spotlight and the audience in rows on the benches; all designed for one way traffic. “Little wonder students can rapidly lose attention during two 45 minute sessions of being talked at,” observes Peter Klaren. “The set-up was surely an invitation to sit back and let your mind wander out the window. Sustaining your full attention for an hour and a half is difficult. Students in this position also rarely ever answer questions.” Klaren teaches biology in the Statistics II and Endocrinology courses and is no fan of the passive audience approach. To ensure his students actually learn something from what he is telling them, Klaren took a long hard look at what Eric Mazur does. Mazur is a Dutch physicist and professor at Harvard University. Mazur’s work inspired Klaren to use ‘peer instruction’, which has students explaining the matter to each other. If he can, Klaren avoids lecture halls with a theatre setting. “I like to walk around among my students.”

The teaching concept

Eric Mazur wrote a book on peer instruction: how students build up knowledge by letting them jointly and actively talk and think about real problems. According to Mazur, students will arrive sooner at understanding and acquire a much clearer notion of issues when they confer among each other than when they sit like passive turnips listening to a lecturer drone on for an hour and a half. After a short explanation students who grasp a concept will remember

exactly why they didn’t understand it shortly before the explanation. Now this is a distinct advantage if you compare this to a lecturer for whom the entire notion is such a given, a lecturer who cannot begin to imagine what it is like not to understand. Klaren identifies with Mazur’s vision and applies his ideas in all his teaching.

The Statistics II Bachelor’s course consists for a large part of lectures. “I don’t use these for knowledge transfer, but to stimulate students. The process of science is key in the lectures and I talk about things that I come across in my own research. During the lectures I discuss the context. The actual content the students must study independently, so it has to be very clear cut. For this reason I wrote a syllabus which sets out all the technical details. I added videos to this, which I recorded myself from behind my computer. That took up a great deal of time, particularly to get it technically right. In the beginning I often had to start anew, but I’ve since become much more experienced. My videos provide additional explanations on various subjects from the syllabus. There are also a number of seminars with assignments to allow the students to practise.”

During the lectures, Klaren confronts his audience on a few occasions with a ‘concept test’. After a short instruction or explanation, the students are given a minute or so to think about the question. Using Mentimeter they can choose the answer from the options proffered. A bar graph will then appear on the screen in the lecture room, showing the distribution of the answers. Students are then tasked to find someone close by who has given a different answer to the one they have. They then have four minutes to convince

each other of their own answer, by explaining how they arrived at it. A new vote is then held and the answers again appear live on the screen. “You can usually then detect a move towards the correct answer. Once there are sufficient right answers, I present another short explanation before we move on. Sometimes the number of correct answers remains too low, or even more wrong answers are added. When this happens the concept is apparently not clear or there is perhaps a misconception somewhere. For me as a lecturer this is an outstanding tool. I know exactly when to accelerate or need to slow down and explain matters in a bit more detail.”

Klaren in collaboration with his colleague Gert Flik uses a different method in the Endocrinology differentiation course. Again they utilise the notion that students better understand concepts when required to explain these in their own words. In this case: explain it to themselves. Students produce their own summary for this course as it unfolds, which they can bring along to the exam. In pairs they write up a joint abstract on the subjects discussed in the lecture. There are three to four duos active in this manner in every lecture. These abstracts are then subjected to feedback by another pairing, after which the lecturers will check to ensure the abstract is indeed correct in view of the content. The abstract is returned to the students, who can then jointly or individually expand upon this with the knowledge they have absorbed during the lecture or from literature to create a full chapter. Subject by subject, this is how they build up their own personal summary.

The students’ texts are checked for plagiarism and the summary must also meet a number of formal conditions. Prior to the examination, the lecturers check whether the summary meets these conditions, however the summaries are not graded. “Students who have composed an excellent summary do not really need to study much more for the exam. For example during the exam if faced with a question asking to analyse what happens if a certain hormone is not made in the body, they can simply refer to their own summary, in which will include a diagram with the workings of that particular hormone.”

Reactions and results

Klaren’s students are very satisfied. The Statistics II course is graded by students with 8.5 out of ten. “In general they are very positive regarding the use of Mentimeter for the concept tests during the lectures, however it is a real search to find the correct frequency balance. At one point I asked five questions in 45 minutes. That’s a bit too much, they find. My chief aim is to keep them focused during a lecture, to maintain the thinking. And of course it also keeps things active for me. I think it’s great to see how the answers shift, even if this happens to be in the wrong direction. You have to be flexible then, able to change gears quickly to repair what can go wrong. Everyone can make a mistake, but it’s dangerous if this leads to misconceptions arising. With this I can easily see that coming from afar.”

The students required to write their own summary are also happy about this method. “The most uncertain moments come when they need to write in their own words something I’ve explained to them or what they’ve read in literature. ‘That’s exactly as I would phrase it... can you write that any differently?’ That’s difficult for them, but they usually get there in the end. We’ve been using this method for the last twelve years; successfully! On average, I only come across plagiarism about once every two years or so. Judging by the quality of the summary I can usually tell how well a student will do in the exam. That quality is usually very high indeed; the papers they produce are always carefully edited. Using this method they learn exactly what they need to know and what they should look up. Some students also use the summary in later courses or during an internship as a sort of reference facility. They don’t use this method of studying for any of their other courses, I hear, which puzzles me somewhat.”

Klaren also remarks on how integrating knowledge can be problematic for many students. “In tests I regularly ask the same question but in different forms. If I ask ‘How do you assess a linear regression?’, most students neatly respond that you need to draw a scatter plot and calculate the correlation coefficient. But if a bit further on I ask them to actually

assess a linear regression, quite a few students will forget to draw a plot and take the correlation into account. I also see this in other courses. For example, I explain to students that you can differentiate a male shark from a female shark by the myxopterygium, a special fin on the belly. During an exam if I ask how you can separate them, almost everyone answers 'myxopterygium', however when I show a picture a few questions later of a shark and ask whether this is a male or a female, nearly half of them give the answer wrong... It's as if you show a photograph of a naked human being and they have no idea whether it is a man or a woman, whilst they all know that a man has a penis."

<i>Course</i>	<i>Statistics II (B3;3 EC)</i> <i>Endocrinology (B2;6 EC)</i>
<i>Programme</i>	<i>Bachelor Biology</i>
<i>Numbers</i>	<i>70 - 100 students</i>

ATTENTION

Collaboration

Students explain the subject to each other during contact hours and give one another feedback when writing abstracts for the summary.

Involvement

During the course students write about the subject in their own words, relying on peer instruction and by writing a personal summary.

Self study

Students are required to study the subject independently and work on a summary which they are allowed to refer to during the exams. Knowledge clips are available for technical matters and procedures. Lecturers are not only involved in knowledge transfer, but also stimulate students by showing them causes and results of classic studies.

RELEVANCE

Insight into the professional field

The processes involved in science are key to the course and the lecturer discusses archetypal cases and their results. The context of this knowledge is core.

Preparing for exams

Students answer questions using Mentimeter which shows whether they have understood the subject. The summary which students work on during the course can be referred to during the exam.

CONFIDENCE

Adaptive teaching

During the course the lecturer can gather information on how well subjects have been understood by using both Mentimeter and the submitted abstracts for the summary. If it is demonstrated that a particular subject has not been well understood, the students are made aware of this and the subject will receive additional attention.

Structure

There is a clear course setup with transparent conditions, expectations and learning objectives. Knowledge clips and an outline explaining theoretical and technical matters are available for the statistics course.

SATISFACTION

Usable end product

Students write a summary containing the most important course information, which they can sometimes use as future reference work, for example during internships.

Attention, Relevance, Confidence and Satisfaction are the four elements of the ARCS-model (Keller, 2010) that can be used to identify motivational aspects of teaching concepts.

SELF-DIRECTED

EDUCATION

DR. VINCENT MEELBERG



SELF-DIRECTED EDUCATION

Structured improvisation regarding the creative industry

A course's subject can be approached in manifold ways. There are always many more themes and stories you could highlight than fit within one lectures series, and every one of them interesting. If on top of this you wish to challenge your students to search for themselves what it is they wish to learn, then casting your lectures in concrete is not a great idea. But how can you be sure that the students learn enough? And how do you prevent things heading off in every direction all at the same time? By considering your lecture as a sort of freeform jam session with you as the band leader. Vincent Meelberg is not only a lecturer, he is also a composer and plays double bass in numerous jazz combos. He applies the art of improvisation on a theme in the Creativity in Context Master's course. He does not prepare his lectures as a linear story, but as a framework of interconnected subjects. During lectures, this allows him continuously to key into whatever his students bring to the fore. He gives the students an active role, demanding they plumb the depths of the chosen matter. Together they create the course's narrative.

The teaching concept

Meelberg sees his Creativity in Context students once a week in a meeting lasting three hours. The students prepare for this by reading literature and watching documentaries. They are also set an assignment which trawls the meeting's subject even deeper. For example: find a case which raises questions in view of the subject matter, look for an example that refuses to sit comfortably within this theory, or

formulate a critical review of an author's argument. As well as the individual preparation, students (taking turns) in a small group prepare a part of one of the weekly meetings. To facilitate this, Meelberg provides them with a framework of elements that need to be addressed. The students are free to expand on this and also to decide how they will present and handle all of these elements during the meeting.

The first hour of the meeting, Meelberg stands before of the group, but as far as possible he lets the students dictate the subject. Based on their preparatory assignment and the questions they ask, he will examine a subject extremely closely and try to inspire them with various examples. He has created a 'mind route' for himself as a loose guideline which maps out the connections between the various subjects. However, he does not share this with his students, as he wishes to retain the freedom to also deviate from this as and whenever required.

His story is supported with a PowerPoint presentation, which features a black slide after every image. This means he can leave the screen black and in the mean time, invisible to the students, search for the next slide appropriate to the unfolding story. The slides contain very little information; often only a core notion or a short example. "This allows me the time to run and react with what's happening in the room. All the story's basic elements are there, but I can navigate between them in different ways."

The last two hours it is over to the students to speak. First the group in charge of the meeting will give a presentation

on the subject they have prepared and then put the other students to work in small groups. They are entirely free to choose the sort of assignment to set the students, such as working on five case studies or discussions on five arguments. Each one of the 'leading' students then takes charge of one of the groups with a case or an argument and leads the discussions throughout the assignment. "That works really well. The students are up for it and know they need to play along, as next time it might be their turn to lead a group." The students and their groups spread out and come together again at the end of the meeting to discuss the results in the bigger group setting. "Because they are responsible for the mini discussions and have to report back on them, they're more or less forced to stick close to the subject. They seldom veer off course much. As far as possible I operate a hands-off approach. I stroll around and only add something if it's relevant. At the end I give a few tips and pointers to the group that has led the meeting."

The exam consists of an individual end product of the students' choice. They have to come up with a subject, fitting with the course's theme. They formulate a research question which they must answer by following a case study that addresses one or more of the course's topics. The connections they create with what is discussed in the course weighs in the assessment. "Most students write an essay, but they're not required to. This year for example, one of the students produced an impressive film along with a written component to substantiate it. I'd like to see more of this sort of creative approach to end products." Does Meelberg also leave the responsibility entirely in the hands of his students during the phase when the end products are created? "In the lectures I only give attention to the general expectations. If they have any questions or doubts about the chosen subject, their research question or the form, they can always visit me and request feedback." The end product determines the grade for this course. Meelberg also assesses the presentations and the manner in which the students have given form to this part of their education, and uses this mainly to round things off.

Reactions and results

"In general the students are quite positive. Only the group who take first shift at leading part of the lecture find that bit daunting and uncomfortable. But even they are happy with the course in general. What pleases me is that they mention they learn a great deal from doing a presentation, as well as from their fellow students' presentations. I also use this method with a second year course and there the positive appreciation is somewhat more muted than the Master students. The difference in level is apparent, something also noticeable in the depth of their questions. In the Bachelor's course these float more on the surface. Perhaps I could improve this by offering them a few example questions.

"There are of course also a number of students less keen to take an active part. It's not that they're lazy or uninterested, they're just people who prefer to say less. Some of my colleagues say: I used to be like that, it doesn't really matter, does it? But I disagree. A good student must not only be intelligent, but also acquire the facility to share that intelligence and contribute to the discussion during lectures."

The students doing the presenting and then setting tasks for their fellow students are in general very capable of achieving a high quality. "It has never yet gone entirely belly up. However, one thing that students often misjudge is formulating the discussion questions. They create something which leans way too far towards asking for a yes-no answer or a case which is much too specific. What you need is something that will stimulate discussion for anything between 10 to 20 minutes. Of course it's particularly challenging to create good questions, but that's exactly why I do it. And discussing a good question also goes hand in hand with improved understanding. The plenary feedback afterwards allows me to award more attention to this, for example by thinking up alternative questions. Or I can of course ask the students to submit the questions to me in advance, to allow me to sharpen them up a bit.

“They also surprise me with their creative solutions. For example when they decide not to have group discussions, but have come up with the idea of writing a story on the issue, a piece of fiction. Or they bring along a stack of papers arriving at new insights based on ‘grounded theory’. Students can create amazingly interesting and innovative modes of instruction. And they can find great examples. Sometimes I really think: wow! When they come up with examples I haven’t even come close to considering.

“My original notion was to leave the structure more to the students than I do presently. I think I underestimated that. ‘Lack of formal structure’ is still something I sometimes come across in evaluations. I understand this, as I don’t really want to nail everything to the floor. Having said that, structure is indeed significant. I’m constantly seeking to strike the correct balance; a clear structure with the freedom to manoeuvre built in. That fits with creativity. Improvisation needs a framework to hang on, but the content is not a fixed thing.”

<i>Course</i>	<i>Creativity in Context (MA; 5 EC)</i>
<i>Programme</i>	<i>Master Arts and Culture</i>
<i>Numbers</i>	<i>30 students</i>

ATTENTION

Challenge

Students decide on the end product's form.

Involvement

In sub groups, students prepare for and lead meetings.

Self study

Students prepare lectures, linked to an assignment which has been previously submitted.

RELEVANCE

Connection with interests

Students determine the subject for the end product, related to the course content.

CONFIDENCE

Adaptive teaching

The explanation of the subject matter in the lectures depends on students' input.

Structure

There are clear frameworks, examples and expectations for the assignments and the end product.

Supervision

The lecturer only steps in during seminars when really needed and places the responsibility for preparation, questions and feedback with the students.

SATISFACTION

Visible achievement

Students teach their fellow students.

Attention, Relevance, Confidence and Satisfaction are the four elements of the ARCS-model (Keller, 2010) that can be used to identify motivational aspects of teaching concepts.

PEER FEEDBACK

DRS. TITIA MEIJER



PEER FEEDBACK

Assessing and developing a professional attitude

In the Work, Organisation and Health Master's specialisation, psychology students are taught to study people's working behaviour, as well as ways of influencing this in a positive manner. The goal is: healthy people in a healthy organisation. Themes such as motivation, collaboration, change processes and a healthy lifestyle are key. In their internships and careers afterwards, these students will be advising and guiding employees. This is why the programme centres both on acquiring knowledge, as well as the students' professional attitude. To really help someone you must be aware of how you come across to other people. It is this awareness that Titia Meijer addresses for a larger part in her Applying organisational change and advice course. Previously she was the one who always assessed students' attitudes, until she realised that it was much better to leave that task to her students. "By asking your fellow students for feedback in a structured manner after every meeting, you acquire an excellent image of how you come across to the group. This means students get a great deal more feedback than I would be able to give them and with sometimes surprising results. Proactive, extravert students sometimes get to hear from their fellow students that they might not be giving other students enough space. It can be a real eye-opener for some to realise that perhaps they could tone things down a bit sometimes. As a lecturer you are often inclined to assess extravert students in a positive manner, as their active presence tends to catch your eye. So this is something of a learning curve for me also."

The teaching concept

The course consists of twelve practical meetings of half a day each, in which short explanations and instructions by the lecturers are alternated with interactive exercises, assignments, role play and group discussions. Away from the lectures, students work in small groups on papers and presentations to be used as input for the meetings. The knowledge they need for this they independently source from two obligatory course books on advisory skills. Independent working, constructive collaboration and experimenting with new behaviour are important elements of the course. As well as a practical focus on obtaining skills, there is ample attention given to critical analysis of their own learning experience and the reflection upon the development of a professional attitude. In the process, Meijer demands a high level of interaction and self-direction from her students.

The didactics in the course are partly based on David Kolb's theory of experiential learning (a cyclical process of experiencing, reflecting, conceptualising and experimenting) and ideas on 'high-impact learning' (Philip Dochy) and 'case-based learning' (Matthew Krain). "At five moments during the course I start the meeting with a collective and formative multiple choice test on the literature and the practicum subjects. Using Mentimeter I present the students with five knowledge questions and five case questions. After every question, and once the students have given their answers, I discuss both the right and the wrong answers provided. By doing this, both the students and I acquire a good idea about the level to which they are mastering the subject as the course progresses. They of course also learn

from their mistakes. During the other meetings they work on exercises, role play and reflection assignments.

“At the end of each meeting, the students appoint three fellow students to give feedback on their attitude and contribution, following a rubric. Based on the feedback, students can experiment with different behaviour in the next meeting, asking for feedback on the same points afterwards. This is how they learn to develop their professional attitude and to see the effect of adjusting their behaviour.”

The rubric consists of five criteria, which can be scored at five levels: from ‘reactive beginner’ (level 1) to ‘proactive professional’ (level 5). The criteria on which students give each other feedback are: general impression, active participation, constructive input, collegiality and inquisitiveness. The rubric highlights the points of attention per criterion and what the behaviour accompanying the five development levels should look like. Along with the fixed criteria, space is left free for tips or compliments. “We have also changed the titles of the levels, as ‘reactive beginner’ sounded a little too negative, so nobody ever scored a 1. There are now five levels ranging from beginner to Master’s level.

“The first time we did this, students filled in the scores on paper. They gave copies to each other as well as one to me. This would quickly grow to become a pile of 180 A4 sheets per meeting. I still have boxes of these stacked against the radiator... The following year we had the students complete their feedback scores in an Excel sheet. They would have to add the new scores to that document after every meeting, uploading it to the digital learning environment. Well, that at least halved the paper work. After the course, by combining the results from the Excel sheets, I could also analyse some of the data regarding the scores on the five criteria and track any improvement. However, this still wasn’t very practical. I therefore applied for an ICT experiment, to see if they could develop an app that would automate the entire process of giving feedback, receiving feedback, show development trends and processing the

results. This Peer App (still in development for general use) will allow every lecturer to use peer feedback in a simple form to help stimulate collaboration in groups or to develop skills.”

The course exam consists of a grade given by the lecturer following a consultation meeting, which students are obliged to attend at the end of the course. For this they have to write a short reflection report in which they describe their professional development during the course. Active participation in all meetings is compulsory to finalise the course. The five multiple choice tests, the peer feedback from fellow students and the lecturers’ feedback do not form part of the final grading. These formative elements are intended only to give students information to assist self development during the course.

Reactions and results

“We spent considerable time on weighing up an optimum form for the peer feedback system. The first version using paper forms certainly multiplied up the admin. In the beginning, the resulting peer feedback was also still part of the student’s final score. That turned out to impact enormously on the atmosphere and the collaboration during the course. And not in a positive way, I must say. This was not really very successful. Students felt continuously observed and assessed, which lead to a stilted atmosphere, not particularly conducive to experimenting with new behaviour. Now that the current form of the Peer App is only used in a formative manner, the negative side influence has disappeared. By using this version of Peer App students are able to obtain a great deal of information and insight without interference from the lecturer. This prepares them for the roles they will eventually adopt later in their professional practice. The university wide version of the Peer App is expected to be made available to every Radboud lecturer in 2019.”

About half of the students indicate that they are more than satisfied with the feedback received from their fellow

students. As they continuously get feedback on the same points, they obtain a much better image of the impact their behaviour has on others. It helps them to formulate improved learning objectives for their professional development, whilst stimulating them to experiment with alternative behaviour. They also indicate that this way of learning positively contributes to their confidence.

The other half of the students mention that the feedback doesn't bring them much or that they already knew most of what they get to hear about themselves. That, according to Meijer, is partly due to the choice of working with a rubric. The rubric strongly veers towards a number of specific points. For some students these are not always the relevant points on which they wish to receive feedback. These students would like to see more openness in the assessment you get with the app. For the further development of the app we are therefore thinking about how we can introduce more open questions or focus on more individual, personalised learning objectives.

Still, Meijer is already quite pleased with what this form of peer feedback brings to her teaching. "The very extrovert students are often surprised when they hear that their fellow students are not as over-the-moon with their contribution as they think they are. They continuously put forward solutions, without involving or listening to others. For them it's a real learning point that they sometimes need to ease off a little and give others more space. And vice versa, this system challenges the more introvert students to demonstrate a more active side, to stop hiding. This group is often surprised when they hear that others in their group experience their contribution as informative, smart and useful, which can help stimulate their confidence. They can experiment with their new role in a safe environment during the meetings."

<i>Course</i>	<i>Applying Organisational Change and Advice (MA;6 EC)</i>
<i>Programme</i>	<i>Master Psychology</i>
<i>Numbers</i>	<i>60 students</i>

ATTENTION

Collaboration

Students work in sub groups on skills, assignments and presentations, which provide input for the meetings.

Involvement

During the meetings students mainly work independently within the sub groups.

Responsibility

Students receive and provide feedback from and to each other. The responsibility for developing a professional attitude and for addressing each other regarding un-professional behaviour lies in the students' own court.

Self study

Students are required to independently obtain the knowledge they require from the obligatory course literature. At various moments preparation is formatively checked through collective multiple choice tests.

RELEVANCE

Preparing for the professional role

Students learn to work actively on the development of their professional attitude and consultancy skills and experience the effect of what happens as they adjust their own behaviour. They learn to experience this process as a necessary and educational activity which contributes to a professional attitude.

CONFIDENCE

Adaptive teaching

The subject matter is discussed based on collective multiple choice tests. Throughout the course, this provides both students and the lecturer with an excellent image of the level to which the students command the subject. Students also immediately learn from their mistakes.

Intensive education

The course consists of meetings that each last half a day.

Structure

Students request feedback on their contribution from each other at very meeting by following a rubric. They can experiment with different behaviour during the next meeting based on this regular and direct feedback.

Supervision

As far as possible, students are self-directing. The assessment of their own and others' attitude also lies with the students. The lecturer supplements or steps in if and when necessary.

SATISFACTION

Experience

Students actively work on their professional attitude. They can experiment with new behaviour and are given feedback on this. They also learn to request feedback and to give it, to reflect upon the process and to formulate their development in new learning objectives.

Self insight

Students learn to critically reflect on their own 'learning ability' and professional development. They recognise the development perspective in both their own and others' learning moments, whereby the act of learning is experienced more as a continuous growth process than a one-off moment of 'making' the grade.

Visible achievement

The students' efforts, contribution and attitude in the work groups are provided with feedback, making the development trends more visible throughout the course.

Attention, Relevance, Confidence and Satisfaction are the four elements of the ARCS-model (Keller, 2010) that can be used to identify motivational aspects of teaching concepts.

GAME BASED

LEARNING

DR. IR. NANNE MIGCHELS



GAME BASED LEARNING

Successful management of an ailing soft drinks company

When Nanne Migchels meets his students for the first time, they are only two months into their studies and have just completed the first introduction course. As a continuation of this, Migchels offers the students the basic concepts of marketing and strategy. He explains how you can describe companies using these concepts and how managers use them in practice to manage a company. Upon completion of their studies, many of his students will become businesses managers. To address this, the second half of the course consist of playing a management game, which allows the students to experience what it is actually like as a manager launching a new product onto the market. They are immediately faced with how to translate theory into practice: come up with a strong product, develop a strategy, adopt a smart approach to movements in the market, handle setbacks and be ready to join battle with the competition. “If this is not for you, then the sooner you find that out the better. After the first semester you must really get the feeling that you’re in the right place and you don’t get that up from nice well honed examples in a book or lecture. You have to experience it for yourself.”

The teaching concept

The course starts with a block of theory. At a relatively high pace of three lectures per week students acquire knowledge regarding the various concepts such as vision, strategy and market segments. They need this knowledge to be able to play the game in the second half of the course. In the years prior to the course coming into existence, Migchels

was dissatisfied with students’ participation in the lectures and with their lack of basic knowledge, so he set about restructuring the course set-up. Students are now tasked every week to independently prepare a case for the lecture. The learning environment and the course manual have been changed to accommodate this. During the lectures, Migchels reflects on the theory and applies this to the case presented, using the contact time to trawl the issue deeper.

The learning environment is set up to guide students through the subject matter step by step. By using ‘conditional release’ they must first go through one section entirely before the next part is revealed. This ensures students read the obligatory literature. They also watch knowledge clips Migchels has produced in the Radboud University studio and answer quiz questions to check they have understood the subject matter. In total they spend around three to four hours on this per lecture. The course book is a so called ‘SmartBook’. This is an e-book enriched with technology which fine-tunes to the individual student’s level. After reading a piece of text a number of questions is asked, adjusted to your personal level. Certain passages in the text are highlighted based on your answers. The colour of the marking indicates the parts you have sufficient command of and what parts you need to revise. By the end, each student will have the same knowledge. Migchels explains that unfortunately he has been unable as yet to integrate the e-book in the learning environment to the extent he had in mind beforehand. “There was a technical problem in creating the connection. I was pretty unhappy about that. Students can only access the SmartBook outside the learning environment meaning not every student has made the best use of it.”

The second part of the course is focused on a management game: 'T-Challenge'. "The game was developed by Simenco and can be adjusted according to your wishes. We however simply use the standard version. We pay Simenco an amount per student. The game consists of a number of rounds and it has 75 decision variables, which all exert an influence on the result. Playing the simulation takes two weeks. To prepare, students form teams of five. To get used to working together prior to the game, we set them the task of inventing a new product, come up with a name and a logo and register the brand. They also, individually, complete a Belbin test, which informs them about their preference for certain team roles, and an 'entrepreneur's test' created by the Chamber of Commerce. They write a reflection on the outcomes and upon completion of the game they once again reflect on these same points."

After these preparations the teams write up a business plan and then the simulation begins. During the game, students and their team try to make an ailing soft drinks company successful again and join battle in the market against the competition (the other teams). The teams are split up in groups to stimulate the competition and to allow multiple teams to win. There is also a bonus task in which teams can make additional cash.

To give the game an extra dimension, Migchels invites a guest speaker along after each round. For example, this can be a lawyer who will say something about the issues surrounding the launch of a new brand, or a business manager who will relate tales of his own successes and setbacks. "I like to enthuse them by showing how people in the real market environment are doing exactly the same things they are now learning about as students. I once invited an army sergeant along to talk about leadership, and a successful contractor who had expanded his business into Eastern Europe, which he had to stop due to threats from the mob. These stories have real impact. That's something I regularly hear back from former students."

During the simulation, Migchels is supported by a number of colleagues. Each lecturer supervises ten teams. The lecturers

do not get directly involved in the game, but are available for consultation during walk-in hours. The teams can use this facility, but are not obliged to. There are also two moments in between when feedback is given on the game, as well as feedback on the end report. The end report is where they present the arguments for the choices made during the game. "We have determined quite a tight format for everything the teams submit. So if I have to assess a business plan, I know exactly what to look for. That makes this part of the process highly efficient. The game is quite complex for the students, but as a lecturer with experience you know exactly where the bottlenecks lie, where it hurts and where you may need to give a nudge. We can also recycle quite a bit of feedback from previous years."

The assessments of the joint and individual products along with the reflections on the game determine 30% of the course's final grade. There is also a written exam which counts for the other 70%. Students cannot 'resit' the game. If they fail that part, following a 'critical incidents' method they must revisit and explore the entire chain of events and decisions they took when playing the game, highlighting both their own and the group process. "That's how they learn, from their mistakes, and as a lecturer I also learn a great deal from this."

Reactions and results

The students demonstrate ample enthusiasm and indicate that they find the course highly pertinent. The part they dislike is the amount of writing required. The course absorbs a lot of effort and time. "The independent preparation for the lectures is in itself something the students get their teeth into. I even get emails sometimes: 'I can't access this part yet. When will it become available?' I estimate that about a quarter of the students are really very seriously about studying the topic beforehand. The knowledge clips are also popular, but with a smaller proportion of the group.

"There are always students who just want to read the book, watch web lectures and to know exactly which spoon to suck

for the exam. When you read that in the course evaluation then sometimes I can only sigh, because you've put so much effort into the course. But I honestly believe in this idea and when the 'resitters' have finished their second bite exams I also often hear that the structured information has helped them considerably with their prepping." Therefore Michels certainly wishes to maintain the pre-structuring of the students' learning content. "You could of course say: you're a starting academic, so it's up to you to study the subject, but entertaining no obligation can also result in indifference. Both with students and lecturers. I want to be clear about what it is I expect: this is it, this is how we do it and this is how you need to approach it."

Just participating in the game is not enough for a successful result. Students have to work hard at it. There were about forty 'resitters' last year. "The group process really didn't go down very well with a number of them. It's simply; you can't do everything by yourself, you need to collaborate and be able to work with all manner of people. Sometimes there can be a real 'jammer' in a group, or someone who just doesn't see the point of any of it. This risks undermining motivation in the rest of the team. As the game master you try to be vigilant and head off these situations. It shows up in many of the end reflections that during the course of the game students have learned to communicate and to trust others. An experience that prepares them well for many of the projects and group assignments that await them in the remainder of the programme."

Students most enjoy the competitive edge to the management game, for which they come up with various strategies. They are also challenged to deliver their utmost performance. "Whether you come out on top or remain floating in the middle is all a matter of detail. There are students who seriously try to apply the theory, whilst others try for a maximum result with minimum effort. For example, we had a team once that hardly did anything in the first few rounds of the game; they just observed what happened with the other teams. They gathered real intelligence of the critical variables and with a massive rush towards the end managed to come in second overall. A smart manoeuvre! Meanwhile

others have a good story, but actually no idea what it really is they're doing. And then there are students who really know how to fine-tune the process. When I talk to students further on in the programme, they often still recall at which point in the game they should have done things differently. Experience always sticks better than cognition. In that sense, it's a superb tool."

<i>Course</i>	<i>Introduction to Business Administration 2 (B1;6 EC)</i>
<i>Programme</i>	<i>Bachelor Business Administration</i>
<i>Numbers</i>	<i>300 students</i>

ATTENTION

Challenge

Students battle in teams to come out on top and can win bonus points along the way.

Collaboration

Students must collaborate on the game to round it off successfully.

Responsibility

Students are responsible for their own success. Successful rounding off of the game is not a given.

Self study

Students prepare for each lecture, linked to a case assignment.

RELEVANCE

Applying the theory

Theoretical knowledge is required to play the game successfully. The students experience directly the benefit of the theoretical knowledge.

Insight into the professional field

As well as practical experience, students are also provided with examples from guest speakers who narrate their own hands-on practical experiences.

Preparing for the professional role

Students step into a managerial role and obtain direct experience to see whether this is a role that befits them.

CONFIDENCE

Adaptive teaching

The learning environment is set out to guide students through the subject matter step by step and in a personalised manner.

Structure

Students work within strict formats and have clear guidelines for every assignment.

Supervision

The lecturers are not directly involved in the game itself, but are available for consultation. The teams can make use of this, however it is not obligatory.

SATISFACTION

Experience

Students garner a great deal of new impressions and learn to work together. The course's set-up stimulates students to learn from their mistakes.

Visible achievement

Students see how successful their enterprise is and how well they are doing compared to the other teams.

Attention, Relevance, Confidence and Satisfaction are the four elements of the ARCS-model (Keller, 2010) that can be used to identify motivational aspects of teaching concepts.

PROFESSIONAL

FIELD PROJECT

DR. DRIES RAEYMAEKERS



PROFESSIONAL FIELD PROJECT

Contributing to current society as a historian

The Master History provides the job market with some sixty historians annually: excellent writers with a wide general knowledge level and a sharp mind and view. But what can you do with this Master's degree if you harbour no ambition to be a teacher nor want to get involved in scientific research? Historians are not always visible in society, so no clear role models exist. In the past, not all students opted for an internship, so many would only dip their toe into the labour market after graduation. All that has changed. Together with his colleagues, Dries Raeymaekers has developed two courses for the 'History and current events' Master's programme, which prepare students for life after university. In the Project Course, students complete a form of internship in which they perform a project for a client from society. Parallel to this they follow the History on demand course. This is where the programme's lecturers talk about projects they themselves have been involved in for a wide range of clients.

The teaching concept

The Project Course and History on Demand have both been scheduled in periods 3 and 4. The History Master's programme has two points in the year where students can start; either the first or the second half of the academic year. For the project course, students can choose from five versions, each with a subject provided by a client, guided by a lecturer who will take care of the project's supervision. "Clients can be manifold: governments, museums, local heritage organisations, companies or

media. All have questions on history that really stimulate our students and on which they are able to work in small groups of five or six. You can see it as a sort of collective internship under supervision of a lecturer, with project group meetings instead of lectures."

Together with Dolly Verhoeven, professor in the history of Gelderland, Raeymaekers supervises a project on Castle Hernen. The Stichting Geldersch Landschap & Kasteelen, an organisation which takes care of natural areas, castles and rural estates in the province of Gelderland, appointed students to delve deeply into the lives of the Van Wijhe family, the nobles who occupied the castle during the 16th and the 17th centuries. The aim of the project is the joint development of material and/or an activity that can bring the castle's history to life for today's visitors. Students also individually write a research report in which they independently study more in depth a selected subject from the castle's history.

As well as the Castle Hernen project there were four other projects last year bringing the students into direct contact with the professional field. One group studied 'big data' and performed lifecycle research at the International Institute of Social History in Amsterdam. Another group were appointed by the Africa Museum to search for traces of past Dutch involvement in slavery in the Arnhem-Nijmegen region. The Catholic Documentation Centre asked students to research the history behind a number of recently donated banners and for advice on how these stories could best be told. Students interested in sports could finally register for an NOC*NSF project on how the Dutch Olympian heritage could be made

more accessible in a virtual museum. In previous years, local councils from both Nijmegen and Venlo have also been involved as clients in various projects.

“We try to have different sectors involved offering a wide range of projects to choose from. We recruit clients through our own networks. First of all they need to be enthusiastic about working with students and also be able to demonstrate some leniency and flexibility. We try not to pin it down too tightly with contracts and budgets and the like. If you start doing that the clients’ demands tend to rise with it.

“In the first half of the project the supervision is quite structured. For example this year’s group will write new texts for the benefit of the guides who give tours around the castle. To do this they first need to investigate scientific source material from which the daily life of the castle can be reconstructed. From this they then move on to produce accessible texts, easily digestible by a wider public. In this phase we meet on a weekly basis to discuss all manner of things. We try to discover the different talents latent within the group and discuss how the different tasks should be divided up. We also look at how to make good agreements and introduce a feasible planning, where to find suitable sources and select appropriate subjects. In the project’s second half, in period 4, everything is much freer; the students fill in the programme for themselves, according to their needs. For example they can spend some time behind the scenes in the castle, invite along guest speakers, or visit another castle to see how things operate there.”

At the end of the course, students submit their individual research report and a portfolio with the results of the joint research, the public material and an individual reflection report. The individual research report and the portfolio each count for 50% of the final grading.

The History on Demand course runs in tandem to the project and sees numerous lecturers narrate how they have performed a full range of ‘on demand’ research projects. This provides students with a good overarching view of

the field of possibilities, as well as setting out the challenges and pitfalls research by assignment can lead to. They also work independently in this course on case studies which present the possibilities and challenges involved in historical research for a client. “This is a real advantage. They obtain a taster across a good range of historical research. One of our lecturers, for example, was part of the Deetman committee investigating sexual abuse within the Catholic Church. A historian’s expertise in the research into such a delicate subject matter is just one facet of an intricate power field of different stakeholders. That’s an extremely sensitive issue, one also with considerable social relevance and gravity and therefore wholly educational for students. The combination of these two courses works exceedingly well.”

Reactions and results

This is now the third consecutive year the project course has run and according to Raeymaekers it continues to improve. “In the beginning it was a challenge to find the appropriate role to adopt as a lecturer. In the first year I probably held on too tightly to the reins, and conversely, I think in the second year I let them go just a bit too much: the students introduced a raft of guest speakers and I found it difficult to maintain a distinct thread linking things. I feel I’ve now found a middle way that works. The good thing is that of course these are all learning moments, both for us lecturers and for the students.

“All the clients I spoke to were very satisfied. They think it’s wonderful that the students are so interested and they mention that the work the students deliver really does benefit them. Sometimes the students’ work serves as a base concept which the client can utilise to build on further. On the other hand, some products are of immediate use. Clients of course do recognise a weaker product here and there. Something which is difficult to prevent, therefore you really need parties who appreciate and are sensitive to the notion that this is an educational scenario. They cannot really expect a full-blown professional package. That said, I do see a lot of pretty amazing things.

“Last year I supervised a group of students who wanted to create a website for Castle Hernen. When they presented their idea to the client their reaction was somewhat dismissive. ‘We already have a website, why would we want a second one?’, was the response. That was something the students really needed to get their heads around; they felt quite uncomfortable!

However, something can always be salvaged from failure; failure is a superlative teacher. Communication with the client as well as vital can also at times be tricky. A client won’t always pose the right questions, nor have the right expectations. How do you make that clear? If you have a paying client harbouring certain expectations, then to what extent do you go along with these? This touches upon your professional ethics. The content of the assignments is not the most important part here. This is about learning how to operate as a historian in a professional context.

“At this point in their studies, students work for the first time in a project team. They often find that difficult, as in fact they are generally unprepared for this. Time management, project management, a client who really expects something from you; it’s all new. But you can watch as they grow into their role. Without having discussed it, after a few occasions my group just started organising project group meetings under their own steam, complete with an agenda and points of action. I really enjoy it when something like that happens. As a lecturer you can then take a step back and direct more from the touchlines.

“There’s always an unavoidable gap in level between students in any given group. It’s nature, weaker students exist; students who will benefit from working alongside the stronger students when contributing to a good group product. The stronger students are the ones keeping the cart on the straight and narrow. As a lecturer you do recognise these differences, but you cannot assess them on it. I haven’t quite found a balanced way of addressing this yet.

“In general, the students are always entirely positive. In the beginning they find things quite challenging. They worry

about how to approach matters, are nervous or even stressed. That phase requires good coaching. You also read this back in the reflection reports, how at the beginning it was quite a search looking for how to manage the project and finding the right role and foothold for themselves. Things gradually become clearer over time. Disagreement within the group can happen. They notice how unpleasant a disagreement can be and really talk it over with each other. You can see them grow during the process. They feel responsible for delivering a good job and realise that just muddling through is not an option. They also realise they have the programme’s reputation to safeguard. You witness a certain professional pride arise at some point: just look at what we can achieve. I think this type of course is truly beneficial, it makes it clear to the students what they still need to learn. It also makes you realise towards the end of your Master’s course that indeed you probably have quite a bit to offer, even more than you previously thought.”

<i>Course</i>	<i>History on Demand (MA;10 EC)</i> <i>Project Course (MA;10 EC)</i>
<i>Programme</i>	<i>Master History</i>
<i>Numbers</i>	<i>25 students</i>

ATTENTION

Collaboration

Students deliver a group product and an individual product related to this.

Responsibility

Students take on increasing responsibility for the planning, project management and the fine-tuning with the client.

RELEVANCE

Connection with interests

Students choose from five subjects offered by the lecturer.

Insight into the professional field

Thanks to the course that runs in tandem, students garner insight into a range of projects which lecturers have worked on in various sectors.

Preparing for the professional role

Students learn how to present historic themes in a public-oriented manner.

CONFIDENCE

Adaptive teaching

The teaching takes the form of project meetings, which address developments and progress.

Structure

The supervision during the first half of the project can be exacting.

Supervision

Lecturers assist students to develop their skills, before slowly removing their guiding hands to coach more from the sidelines.

SATISFACTION

Experience

Students gain insight into the opportunities, as well as the challenges and pitfalls that exist when performing research by appointment. They work in a project team for the first time. There is space to learn from mistakes.

Self insight

Students experience what they already have to offer given their previous studies, and where the points for development lie.

Useable end product

Students work on a product that can be implemented by the client.

Visible achievement

Students deliver a useable public product and experience how as historians they can contribute to society.

Attention, Relevance, Confidence and Satisfaction are the four elements of the ARCS-model (Keller, 2010) that can be used to identify motivational aspects of teaching concepts.

MULTIDISCIPLINARY

LEARNING

DR. MARTIJN STEVENS



MULTIDISCIPLINARY LEARNING

Creating cross-pollination between scientists and artists

Whether you study at a university or at a higher professional level, what you learn is to collect information in a systematic manner before collating and combining it to come to an innovative concept. Universities encourage students to arrive at theoretical insights in this manner. Meanwhile students at the higher professional education levels are pushed more towards finding practical applications. These two approaches complement each other, therefore it simply makes sense that students studying at these different levels can learn a great deal from each other's approach and thinking. But to talk to each other, they first have to meet. To achieve this Martijn Stevens continuously initiates a string of projects to get Radboud University students to work with ArtEZ students. He does this in the Creative Industries Master's specialisation and for the Radboud Honours Academy, among other courses. "The starting point is that whether you are an artist or a scientist, both share the same fundamental interests in principle. You wish to understand the world better, even if you come at it from different approaches, different ways of researching something and different ways of expressing the results."

The teaching concept

A good example is the course that Stevens developed for the Radboud Honours Academy. He organised an Honours lab (the experimental twin of the well known disciplinary and interdisciplinary honours programmes) under the title Post-truth: art and science in an era of alternative facts and fake news. The course consisted of thirteen meetings, which included three public debating evenings with artists and

scientists, a visit to the InScience Film Festival and a final meeting organised by the students themselves. During the meetings Stevens, together with the mentor from ArtEZ, addressed concepts such as 'knowledge' and 'objectivity'. In turns, sub groups of students were tasked with thinking up content for the meetings, in which each could reflect on the theme through the prism of their own discipline. Philosophy students held a mini lecture at the university, in which they questioned the concept of 'truth'. One of the ArtEZ students invited the group along to the dance academy's mirror room, where they jointly enjoyed a dance improvisation session exploring the concept of 'imagination'. A discussion was held afterwards.

Stevens believes the location where the teaching takes place is key, therefore if possible he likes to go off-campus, a device he also uses for his other courses. "I teach a lot of multidisciplinary groups. I would like to pull these students out from their usual context as much as possible. This creates different, more innovative dynamics. I like to take them to places such as Radboudumc's REshape Center, or to the LUX theatre. In the lecture rooms I'm always lugging tables around. A lot of effort perhaps, but for these looser forms of education the set-up is vital."

Exchange takes place at more unusual places away from the courses' meetings as well. "I asked first year course students to deliver an active contribution to a joint Tumblr account. I saw some great things pass by there. Big differences exist between students; plain to see in what they post or submit. Sometimes I'm in a WhatsApp group with students, of which all students in the group are members. In such a setting the

discussions simply continue after the meetings and somewhat differently from those that take place in a discussion forum. It's that informal environment which allows me to gain traction into what students really think, something I can plumb again in the lecture room. For me this works exceedingly well. Right now, I'm even at a point where I find it quite inconvenient if we don't have such a group going.

"If you bring people with various backgrounds together with the objective to nourish each other with content, you must first expend time on the process. They need to get to know each other and also experience what they can do for each other. I always ask them to introduce themselves to the group. I also often randomly divide them into sub groups and ask them to prepare and give a presentation. And I do ask quite a bit of preparation from them. Quite necessary really, otherwise they will opt for the safe exit and nothing happens."

Stevens supervises his students in a quite informal and personal manner. "If a student grinds to a halt, it rarely has anything to do with the content. There's usually a personal dimension going on in the background. I try to excavate what's really wrong. If you ask 'how are you doing actually?' Then it turns out you're often the first lecturer to confront that question. Strange, really. During the students' learning route I also wish to keep an eye on the person, the human dimension, although as a lecturer the focus lies more on the group process. I try as far as possible to leave the direction of the content in the hands of the students, only nudging when really necessary. You have to be explicit in letting them know this, that you expect them to take the lead. They have to give form to their own learning process and I guide them in this, encourage them; 'you know roughly what the frameworks look like and what the context is, have a good look to see where there's space.'" Students often alight upon new insights or new products as an end result of the multidisciplinary courses Stevens delivers. "They are guided quite literally to that goal, although the road towards it can be very free indeed."

The shape of the end product usually does not conform to any notion of a fixed form and students for a large part can decide what the various phases will look like. To

accommodate this, Stevens lets them formulate learning objectives in advance, which need to fit within the course's context. They will be partly assessed on these learning objectives. "With some you have to dampen the ambitions a bit, others you need to encourage. I give them a format within which they can formulate their learning objectives and set out a work plan. This plan records their choice of subject, and where they provide the arguments for why this would be interesting in light of the course. They also use the plan to describe the best method of studying the subject. The objectives and the plan taken together form a sort of personal development plan. That is of course not cast in concrete, but it does offer me points on which I can coach them. For example, I talk to them for an hour in groups of three, to encourage them to learn from each other. This helps them to think about their learning process. Personally I would like to see that happen across the entire curriculum, as they do for example at Eindhoven University of Technology. There, right from year one, you are on a personal trajectory, with a coach and a personal development plan detailing clear learning objectives set out for every module."

When the students work on a joint end product, the group product is always accompanied by an individual component. For example, this can take the form of an individual paper, or a reflection in which they identify and describe their contribution, their own learning process, as well as the group process. "For many students on my courses this is probably the first time they've ever worked in such a manner; which is something I do weigh in my assessment. In the Radboud Honours Academy courses, I've stopped giving grades entirely, I just give feedback. And that feels exactly right. Out there in real life, someone doesn't hand you a slip of paper with mark on it for how you're performing! It also tends to make the atmosphere a lot more relaxed, receptive and open."

Reactions and results

"With the Radboud Honours Academy modules, I found it great to see that students in the first instance looked more at the differences in their ideas of concepts, while by the end

of the meetings they would often be focusing more on the similarities. That's how it often goes in multidisciplinary groups. The students are usually full of enthusiasm. After an introduction they will sometimes set up a Facebook group to keep in contact and run with the theme."

According to Stevens, expectation management is critical. "If you opt for a certain model then you have to see it through completely. I am very clear to my students about what it is I expect from them. How they pick that up differs. With ArtEZ students I often notice that they're quicker at adopting a thrust and direction to their learning process. That doesn't always mean they're successful, but they do learn this kind of 'attitude' in their programmes. There they continuously receive and request feedback on their progress and are prepared to take responsibility. For example they take it upon themselves to do things differently, but not without a clear vision of the potential consequences of that decision. They also have faith in the process and in the lecturer, even if they're still unable to see quite yet where things are heading. University students are less able to handle such ambiguity; they're more reluctant to trust themselves. They often ask questions such as: what exactly do you want us to do, or where can I find that article?"

"The ArtEZ students usually find things a bit too scholarly and structured here, whilst the university students often have to be spoon fed something to substantiate their process. That is partly due to the system and things such as the Binding Study Advice. Everything in their programmes is nailed to the floor. They think for example that perhaps things are 'not allowed' and have heads full of rules and regulations, often of their own making. I encourage them to let go. Just describe what it is you want, and then we'll have a look at what's possible. My motto is: it's your learning process and I've come up with this way of approaching it, but you can do it differently. Some pick up on that, others find it more challenging. As a lecturer that can sometimes be a bit of a struggle. It's an easier job with Master students than with Bachelor students though. There are also differences between the programmes, and group dynamics of course also come into play. At other times they can enthuse each other and really get going."

Building bridges between various disciplines is something Stevens enjoys, often delivering some wonderful results. "Students often arrive at surprising things. If they do something they're fully behind and something they put a bit of themselves into, they do much more than when asked merely to tick a few boxes and sit an exam later. The end products therefore vary widely and, as a lecturer, good fun when grading. A lot more interesting than marking fifty more or less similar papers. Whether something is assessed as being 'good', will partly depend on what exactly you test the work on. I want students to acquire an insight into their own working and learning process and to look beyond the constraints of their own professional arena. I want them to see what they're capable of and what they can bring to each other. That you can walk the same route differently, employing various methods. That results in reflection. I find it fascinating to observe that learning process. University students are schooled in theory and therefore sometimes have difficulty in seeing what other latent talents they may possess. They sometimes look with envy at how the students from the higher professional level work: solution focused and hands-on while, vice versa, the ArtEZ students are impressed with the reflective powers our students here possess. Working on a project together they all realise their self-worth, as well as what other people can do."

<i>Course</i>	<i>Post-truth (Honourslab)</i>
	<i>Creative Industries</i>
<i>Programme</i>	<i>Radboud Honours Academy</i>
	<i>Master Arts and Culture</i>
<i>Numbers</i>	<i>10 students (Post-truth)</i>
	<i>30 students (Creative Industries)</i>

ATTENTION

Collaboration

Students of various disciplines or institutions learn from and with each other.

Involvement

In sub groups, students are tasked to give shape to a meeting.

Responsibility

Students must form their own learning process. They are challenged to look for the space within the frameworks.

Self study

The students are asked to do considerable preparation work, which they need to contribute to the meetings.

RELEVANCE

Connection with interests

Students are free to come up with ideas for the teaching moments and end products.

CONFIDENCE

Adaptive teaching

The teaching takes place at locations away from the university or in rooms where the original/traditional teaching set-up has been altered. In addition to the meetings, students also keep in contact with each other and the lecturer by more informal means.

Structure

Following a framework, students formulate learning objectives and a work plan, on which they will be assessed. It is very clear for students what is expected of them, however the road they take to get there is their choice.

Supervision

The lecturer offers personal guidance, with an eye to the group process. Regarding content the steering lies as far as possible with the students themselves, with the lecturer only nudging if and when required.

SATISFACTION

Experience

Students learn to look beyond their own field of expertise. Together with students from other institutes and programmes they experience development with a common goal.

Self insight

Students work together on a project, learning how to value both their own and other people's perspective.

Attention, Relevance, Confidence and Satisfaction are the four elements of the ARCS-model (Keller, 2010) that can be used to identify motivational aspects of teaching concepts.

DEEP LEARNING

MR. DR. VALÉRIE TWEehuysen



sch
eilanden



DEEP LEARNING

Plumbing the depths of complex cases in property law

As a lecturer there are roughly three groups of students you come across when lecturing. Students who only come alive on the eve of the exam, trying within the space of a couple of days to give it their all to get good results. More active students, but who continuously focus on identifying what they need know to deliver a good result in the exam. And finally students who really submerge themselves in the subject, because they have become hooked by an issue and wish to understand the subject in detail. Unfortunately, that last group is usually a minority. Valérie Tweehuysen and her colleagues decided to redesign the work group teaching method for the property law courses, in a bid to encourage more of those 'in-depth' students. To do this they needed to set the bar considerably higher. "All those work groups in the courses, it was all beginning to go a bit stale and mouldy for me. I increasingly had the feeling that we were only teaching the students a trick, how to jump through a hoop! They were able to look up a legal article and jurisprudence and apply this to a case, but if I probed a bit deeper their real understanding would rapidly falter. Just being able to apply the law is hardly impressive. Anyone these days can simply 'Google' the laws for themselves, Computers will soon be able to handle simple questions and we shouldn't forget that the higher professional education institutes also turn out legally trained professionals. Our students need to be able to distinguish themselves by being able to handle and acquire a clear vision on complex and debatable cases."

The teaching concept

Civil Law I, the third year course addressing property law, includes a series of lectures and work groups. These work groups

consist of a lecturer guiding about thirty students in applying the theory to cases. Previously, the theory was often repeated or further explained in the supporting work groups, before moving on to practise analysing fairly simple case studies as preparation for the exam. In the new work group setup, there is no longer is any additional explanation of the subjects addressed in the lectures or the studied literature. Knowledge clips are available which deal with specific topics. A paper course manual no longer exists; all the information necessary for the course has been processed in the digital learning environment. The students' preparedness is checked at the start of each work group by a number of multiple choice questions.

The lecturer will discuss a realistic case in the work group, a case designed to prepare students as far as possible for their professional life. "We work with mock files and ask the question: what would you do if someone arrived at your law firm with this case? The files for example contain a client's letters and emails. Students must study these to glean the information they require. With the law in hand, they then have to analyse the case step by step. When selecting the case we make certain that room is left for debate. Students must ponder for themselves whether the conditions and requirements of an article have been met, what the various parties in the case can do with the available information, and what additional information they will require to be able to assist the client as a lawyer. To do so they need both understanding and insight. Simply reproducing information and applying a trick doesn't get them there. This lays a great deal more responsibility for their own learning process at the students' own feet, and the level has risen considerably as a consequence. The questions and the content of the mock files

are easily adapted every year, making certain that students cannot simply download last year's answers."

An important difference with how things were previously, however, is that with this mock case there are no clear or straightforward court rulings available. Lecturers also do not provide the 'correct' answer, nor do they express their personal views on the case. "We really need to bite our tongues sometimes, but that's imperative, as students need to arrive at their own solutions. Only then will they obtain a better understanding. If we would just roll out the correct answer at the end, then it wouldn't matter much whether they had prepared well or not. That would induce passivity. Indeed even to the extent that it would probably make these work groups pointless." The demands on students in the exams have also been upped. "If all you can do is regurgitate your notes, then you won't make it. You must demonstrate an understanding of the case and will only score points if you take the correct steps and perform these in the appropriate manner. Formerly you would notch up points for just naming the correct article, even if you applied it incorrectly. That no longer happens."

In the Master's programme, students can select an optional course: In-depth property law. Tweehuysen has also entirely changed the forms of the work group sessions in this course. Students now get to work in sub groups with an ongoing case. If you opt for this course, you are warned beforehand that these are highly intensive workgroups and students can select to join or not. "The work groups, though optional, are strongly recommended. But if you do opt to take part, you have to give it full throttle. You simply cannot drop out halfway through your sub group. Of the 60 students last year, 42 students took the plunge. Those are our future movers and shakers." The course starts with three lectures to introduce the theory, after which there are six work group meetings.

A lecturer who works as a curator in his own practice has recorded a video in which he, as a curator, seeks advice on a number of complex cases. These cases include scientific discussion points and issues currently studied at Radboud University. Students work in sub groups on their own cases during the six meetings. The curator turns up in person to

the final meeting and the sub groups make their pitch by presenting their advice. These are of course fictional cases, which have files created to include mock letters, emails and memos. Each sub group must also prepare the subject of one of the meetings, by looking up literature and finding applicable jurisprudence. "Usually the students only look at legal texts and the obligatory literature. They are not particularly well trained in additional independent legal research, although in any future practice that is exactly what they will be doing." The first hour of the work group session, the students chosen to prepare that meeting present the results of their research to the other groups, in the same way it happens in a law office when a case is discussed. The lecturer is just an observer. In the second hour, the lecturer takes the lead. "You recap where necessary, confirm the issue, highlight the things which went well, mention where things have been missed and discuss these points together with the students."

The students can bring along their books and notes to the exam. They will not be questioned on things discussed in the lectures or work groups, but will be presented with a new problem. "This is not about reproducing knowledge, or about writing what they think we want to hear. Students need to demonstrate that they can reason well and provide sound arguments. There are always manifold answers to the problem, and it's imperative that they are able to substantiate their solution. As with the real practice; they don't also always have to answer everything."

Tweehuysen was inspired by Ken Bain's book *What the best college teachers do*. Bain describes his observations and conclusions from fifteen years of research among lecturers and teachers in higher education. According to Bain, the best teachers challenge students to 'deep learning'. They do this by pressing their students with taxing matters to prevent a shallow or strategic attitude to learning. They confront both the beginning and the advanced students with realistic and complex issues, demand a high level and provide the opportunity to continue trying for a solution. To encourage students to learn from their mistakes, they only provide feedback during the learning process. Marks are only awarded in the final exam.

Reactions and results

“In Civil Law I there was a lot of insecurity among the students in the beginning, and the exam pass rates dropped dramatically. The level of the final exam had of course been raised quite considerably, but many students stuck rigidly to their old way of prepping for an exam. That was a real point of attention for us: students needed to learn to trust their own skills and we must help them develop these. The pass rates have come up a bit again. First time pass rates last year were 56%. Maybe we could look a bit more closely at how students arrive at their answers during the work groups; plough matters a bit more in detail. A switch for the entire faculty would be great. Some students simply cannot handle the level, but it’s a shade late to find that out in the third year or when doing a Master’s. For the same reason we now also approach one first year course in the same manner. The first time we ran that course in the new set-up, we introduced the rule that if students scored insufficiently in the work group knowledge tests on three occasions, they would not be allowed to take part in the exam. The students found that sanction too harsh, so now these tests are purely for practising and to check you have sufficient knowledge of the subject.”

In the beginning, Tweehuysen and her colleagues came in for a lot of criticism from students, who found that they were required to put too much time and effort into the course and believed they had the right just to be taught. “That’s still an ongoing battle. They find it difficult that the lecturer doesn’t spoon feed them a straightforward answer. They can no longer depend on the lecturer’s views on what would be a good solution or on how to interpret a certain article or ruling. We want to hear their individual opinions, which they of course need to substantiate. Thankfully we also have our enthusiastic students. You quickly recognise the differences. The motivated students dive in and immerse themselves, giving it their all in tackling the issues we place in front of them. Our aim of enthusing students in view of the profession’s content and achieving ‘deeper’ learning in the work groups has really paid off. A fair number of the students however remain solely focused on the exam, but I suspect there’s not a great deal you can do about that. Now that the courses have run a few times, we have established a good balance to suit just about everyone.

And if the bottom twenty percent really cannot make it, then that’s just how it is. Then perhaps an academic programme is not for them.”

In the evaluations, Bachelor students indicate that they find it interesting and motivating to work with cases as they would appear in practice. “We manage to achieve the level we wanted in the work groups. And we may even surpass this. They develop and hone their critical faculties, enter into discussions and sound each other out regarding solutions. We often hear that students found it a lot more interesting than they had anticipated.”

Tweehuysen is also quite relaxed with the new approach in the Master’s course. “The students have really surprised us. Our thinking was to devise a number of complex cases; hoping students under their own steam would achieve about seventy percent. We’d have been happy enough with that. We could then have made up the rest in the work groups. But most actually achieve ninety to ninety five percent by themselves with no help. Sometimes they would email a few days prior to the work group saying: ‘we noticed this in this case, that can’t be right can it?’ They would really push their finger on the sore spot. But we don’t make the cases even more complicated than they have to be. The level students are required to achieve is exactly right. There were some points students were not quite happy about and we took a long critical look at those. Personally what I find difficult is keeping the groups engaged who, for that particular meeting, are not involved in preparing the legal research. Perhaps we could let them prepare critical questions regarding the subject. Previously, some Master students mentioned that they found it not particularly relevant to be confronted with cases that in reality they would expect only ever to come across perhaps once or twice in their entire career. But that keeps things on an academic track. By being busy with difficult cases and exceptions, you train yourself to think. That’s the level at which you will have to discuss matters once you’ve graduated.”

<i>Course</i>	<i>Civil Law I (B3;11 EC)</i>
	<i>In-depth Property Law (MA;7 EC)</i>
<i>Programme</i>	<i>Bachelor en Master Law</i>
<i>Numbers</i>	<i>600 students (Civil Law), 50 students (In-depth Property Law)</i>

ATTENTION

Challenge

The level is high and requires insight, simply reproducing knowledge is not an option. They can go quite far if they work on their own, however it takes the context of the work groups to penetrate the finer details.

Collaboration

The work groups are strongly recommended, but not obligatory. Students who do take part are expected to give their sub group their fullest commitment.

Involvement

Each sub group is made responsible for preparing the content of a meeting, by finding the appropriate literature and jurisprudence.

Responsibility

The responsibility for the learning process lies with the students. They must search for the required information and arrive at the appropriate solutions.

Self study

No explanation regarding the subject is given in the work groups. There are knowledge clips available with explanations regarding specific topics. The students' preparation is tested with multiple choice questions.

CONFIDENCE

Supervision

The lecturers help the students develop the knowledge and the skills required to solve the problem. The discussion on content is brought to the fore by the students themselves. In the first part of the meetings, lecturers refrain from involvement and only take a lead in the discussions during the second part.

RELEVANCE

Insight into the professional field

Students benefit from hearing from a lecturer who also works as a curator in practice and can make a pitch regarding the advice they would offer in a case. The case contains discussion points on matters actively researched within Radboud University.

Preparing for exams

Students are allowed to take their notes and books into the exam. They are not confronted with questions regarding what has been discussed in the lectures or work groups, but are presented with an entirely new case.

Preparing for the professional role

Students work on a realistic case regarding debatable issues. They need to be able to decide on complex cases and exceptions.

SATISFACTION

Experience

Along with fellow professionals, students learn how to adopt a critical position and to discuss and sound each other out regarding solutions. They experience that they are indeed perfectly capable of putting together a convincing, substantiated solution to a complex case.

Attention, Relevance, Confidence and Satisfaction are the four elements of the ARCS-model (Keller, 2010) that can be used to identify motivational aspects of teaching concepts.

RESEARCH PROJECT

JOYCE VERMEER, MA



RESEARCH PROJECT

Collaborating on a themed collection of philosophical articles

Empirical experiments are not entirely suitable for approaching a philosophical problem. Philosophers need to use language. Using language, they analyse a problem, formulate a viewpoint and substantiate this with arguments. These arguments are often grafted on from other philosophers' texts. The outcome of the analysis of a philosophical problem is usually also a text. Therefore, to become a good philosopher you must be able to set out the arguments, and write these out in a clear, succinct manner. That demands practice and previously there was insufficient room left available for this type of exercise. The programme's staff felt that the quality of the final paper submitted in the Bachelor's phase was inadequate. In addition, for many students the writing just took too long, meaning they often exceeded the time limits. The Project course was designed for second year students on the Bachelor's programme to put a stop to this breaching of the deadlines, whilst simultaneously improving the quality of the written work. The course, coordinated by Joyce Vermeer, prepares students for writing their Bachelor's paper. In a seminar, they work on a number of individual papers on a joint theme. Within a time limit poured in concrete beforehand, they round off the process with a presentation of a collection of their papers.

The teaching concept

Four or five philosophical themes are made available every September, which each link to the various chairs within the programme. There is space for a maximum of ten students within each theme. The groups are set up on a 'first come,

first serve' basis, which means that students who make a selection in time have a good chance of ending up with the theme of their choice. Most themes are offered for two or three consecutive years. This frees up lecturers from having to prepare a new theme every year and also gives them the opportunity to try out a new theme, whilst sharpening it up over the following years.

For example, last year one of the themes was 'The everyday', referencing the British philosopher David Hume. Hume said that if a billiard ball hits another, you can only observe that the one stops rolling, whilst the other starts moving, but that you cannot actually determine that the one ball caused the other to move. A philosopher who wants to win a game of billiards will however take for granted that that is indeed the case. This tension between the philosophical and the everyday way of looking at things formed the heart of this theme.

The seminar usually starts with an introduction by the supervising lecturer, who frames the theme, whilst keeping it wide enough for students to select their own subject within the theme and set to work on this. During the course, students work in groups of four or five towards the end product: a collection of individual papers that have a mutual connection, which refer to each other and are provided with a joint introduction and an index. The route towards the end product is sliced into smaller steps. All the students are required to formulate their own research question.

"Despite the research questions being individual, each must express coherence within the group. And that must go beyond the indicated theme, but how they give form to

this is up to them.” Continuing on from the Academic skills course and the other writing assignments from the first year, students start this course by collecting literature on the theme. In the process, they need to assess the sources uncovered on their reliability and are required to indicate why one source is more valuable than another. They must find at least five relevant sources for their own paper and also one or two for their fellow students’ papers. Part of this research into the literature is also a bibliography assignment. “And provided you dot all the i’s and cross all the t’s, you will hit full marks for this part.”

A number of sessions take place between researching the literature and presenting the collection, in which the intermediate stages of the end product are fully discussed. “In all the intermediate steps, we first let the students write out what exactly it is they’re going to do. This ensures that the foundations are solid and that the building blocks are firmly in place before they move forward. The entire process is tightly organised with clear expectations and deadlines. For this one-off occasion only, we lead them entirely by the hand with the Project. This is how we prepare them for writing their Bachelor’s paper, a task which will also be organised in seminars.”

Much of the students’ time is spent reading. As well as the books and articles for their own paper, they also read each other’s texts. They need to know when and where they can refer to each other’s papers, and are also tasked with giving each other feedback. Giving feedback is always done in the entire group setting, and supervised by the lecturer. “We have developed guidelines for this. If they do not handle these very well, the lecturer will step in. The good thing about feedback in a group is that if students mention something negative, as a lecturer you can point out the positive sides of someone’s work.”

The course runs for an entire semester. In addition to the individual paper, students jointly write an introduction detailing the connection between their papers. They also need to add a list of contents, an index, and provide a cover. The collections are presented at the end of January during a

festive event. Each group presents their collection, telling the public the story of the content and the process. “Some groups really go to town and produce a wonderful printed booklet, but in principle, simple copies in a binder suffice. The best collection is published as a special edition of *Splijtstof*, the faculty’s magazine.”

The philosophy department uses the same rubric for assessing most written products, sometimes adding extra elements for a specific assignment. The weighting of the various elements per specific field may also differ. Vermeer really worked hard to get that to happen. “We experienced considerable resistance to using a rubric within the department at first. Until at some point there was a situation in which the first reader thought something was brilliant, while the second reader didn’t think much of it. At that point we had nothing available to reconcile the two views. I then proposed using a rubric. Between us we managed to fine-tune it and agree the various assessment criteria. Most lecturers can now see the advantages of having a tool that makes it possible to confer with each other. Everyone is still using it in his or her own way though, but accepts that these are the criteria. I just look upon it as a work in progress. I think I’ve now reached version number eight.”

In the final assessment, the bibliography assignment counts 10%, the individual literature research 20%, the individual paper 30%, an individual oral presentation 20%, and the joint collection also 20%. The written products are assessed following various assessment forms. Vermeer is still struggling with finding a way to assess the peer feedback. “I’ve yet to find a model for this which I think is honest.”

Reactions and results

Vermeer also coordinates the Bachelor’s paper and notices a significant difference between the written products of the regular students and those of the fast-track Bachelor’s programme who were not involved in the Project course, nor have worked on the many first year writing assignments. “You notice that the regular students write their papers in an entirely different manner. Much better structured. They also

get to see the same rubric every time they write something, so they know exactly what is expected of them. There are also students who experience the strict framework within which they have to write a paper as limiting, but most students are pleased with the rubric. The feedback is always given on the same criteria and weighted in exactly the same manner, which ensures that you know exactly what you're good at and the points that still need improving."

In the beginning, providing feedback on the quality of each other's work is often an uncomfortable task for students. Some hardly dare to criticise, others go for it full on. But during the course it gets better. They sometimes will remark on things that you as a lecturer had never even considered. It can be surprising."

Some students drop out because they find it too heavy going. They often then try again a year later, as the course is obligatory. "It's a course which sucks up a lot of time and effort. On top of this, it's also a group thing. Sometimes someone simply cannot find his/her place in a group; getting out of that can then be your best 'reset' option.

"Group dynamics are important in this course. It's imperative for students to work together. Philosophers generally don't really enjoy that. They find it irksome; they wish to focus solely on their own thing. Of course there is room for that too, but we also wish to encourage them to think about something with other people. If you want to be an academic, you must also acquire the skill to write papers with others."

The course receives positive evaluations and students are generally enthusiastic. "After the award ceremony for the best collection of papers, there's a get-together with drinks. I always try to get round and talk to every group then. They find the course pretty heavy going, but also truly educational and fun. Even within the tight limits of the framework they also get a fair amount of freedom; something they usually appreciate. As a lecturer, that's the part which requires the most investigation. How can you make certain that they can indeed do their own thing within the theme? These are

second year students, so they are capable of a considerable amount, but at the same time you cannot expect everything from them. So how much do you direct, and how much leeway do you allow? In the end though, it almost always ends well. It's superb to see the groups with a real product in their hands by the end of the course and it's also great to see friendships blossoming as the semester progresses."

<i>Course</i>	<i>Project (B2; 10 EC)</i>
<i>Programme</i>	<i>Bachelor Philosophy</i>
<i>Numbers</i>	<i>40 students</i>

ATTENTION

Challenge

The best collection is published as a special edition of *Splijstof*, the faculty's magazine.

Collaboration

Students must help and assess each other. They deliver a joint end product.

Responsibility

Students are required to submit regularly individual contributions essential to the group product.

RELEVANCE

Connection with interests

Students can choose their own subject within the frameworks as set out by the lecturer.

Insight into the professional field

The course's sub themes link with the chairs within the department.

Preparing for exams

Students experience all the steps expected of them when writing their Bachelor's paper.

Preparing for the professional role

The process students experience on this course prepares them for a career in academia.

CONFIDENCE

Adaptive teaching

The teaching consists of project-supporting sessions which discuss the intermediate products and feedback is given on the planned intermediate steps.

Structure

The research themes and the deadlines are fixed. There are guidelines for the feedback and supervision of the group process with a clear, programme-wide assessment framework. The road towards the end product is subdivided into steps.

Supervision

The lecturer guides the groups from the sidelines and only intervenes if a team is seen to be heading off in the wrong direction.

SATISFACTION

Experience

Students on the programme for the first time obtain intensive experience with working together, whilst preparing for the process involved in writing their theses.

Visible achievement

Students deliver a joint end product. They present their collection during a festive meeting.

Attention, Relevance, Confidence and Satisfaction are the four elements of the ARCS-model (Keller, 2010) that can be used to identify motivational aspects of teaching concepts.

BLENDED LEARNING

DR. JANA VYRASTEKOVA



BLENDED LEARNING

Practising mathematics in a personalised learning environment

Economists use economic mathematical models to describe and predict the economic behaviour of people, companies and governments. It is therefore imperative for Economics and Business Economics Bachelor's programme students to acquire a solid grounding in mathematics to handle the questions they will meet in their studies. However, like many other programmes, students here often view the mathematics and methods part of the programme as a trivial side issue; a stumbling block rather than something relevant and useful. In addition, a larger part of their knowledge of maths has ebbed away by the time they need to use it independently later on in the programme. Jana Vyrastekova, coordinator of the Mathematics in Business and Economics course, has been endeavouring for years to find a solution to this problem. She was awarded a Comenius Teaching Fellow in 2018 within the theme of 'personalised education'. She used it to take the next step: implementing a digital learning platform on which students can practise at their own level and at the same time receive personalised feedback with the help of this platform. It is her ambition to create an ongoing thread in the Bachelor's programme, which integrates the mathematics and methods education with the more content related economic subjects. "Intrinsically, my students are motivated by economics, not maths. Providing them with economic examples is insufficient to remove the aversion or even fear."

The teaching concept

Vyrastekova's quest to find a way to motivate students' enthusiasm for mathematics started a number of years ago.

She began by selecting a textbook in addition to which the publisher offered a digital platform called MyMathLab. The platform allowed students to practise at their own level with various assignments. Vyrastekova was able to keep a close eye on the students' progress via the lecturer's dashboard. Although this helped to make students more successful in the course, Vyrastekova also wanted to change the form of the teaching process, as students indicated they wished to spend less time on explanations, and more on exercises.

Vyrastekova immersed herself in alternative ways of teaching methods and decided to take a year to see if she could entirely 'flip' the course. Inspired by all the things she found online on the subject, she recorded a number of clips with her son's old iPad, in which she explains all the course's key concepts and subjects. From that moment forward, students were able to find the explanations and study these in their own time and at their own pace, which opened up space for more exercises during the lectures. Students made good use of both the clips and the MyMathLab digital platform, and only a third of the students still followed the actual lectures. "When I compared the exam results that first year with those of the year before I saw that the pass rate was considerably higher. The average result had gone up by half a point. And still the course wasn't very positively assessed in the evaluation. Strangely enough, the students now had the feeling that they weren't being provided with sufficient explanation and that they were left to do everything themselves."

Despite this disappointing evaluation, Vyrastekova felt that she was on the right track. She therefore invited the students

to come and talk about their experiences and collected ideas on how to develop the course further. The most important conclusion from these talks was that students didn't like the notion that the only explanation of the subject was solely available through clips and a book. To find a good middle way, Vyrastekova decided to redesign the course along the principles of 'blended learning'. To do so she had to find an alternative digital platform: one on which it would be possible to determine entirely the content, as well as provide the capability to lead students by the hand to a certain degree when going through and practising the subject.

The SOWISO platform has been able to fulfil Vyrastekova requirements exactly. SOWISO offers readymade mathematical models that lecturers – in part or entirely – can integrate into their teaching, whilst also offering the opportunity to build their own models. The learning environment analyses the answers students give, recognises where the mistakes lie and provides feedback on correct and incorrect intermediate steps. Thanks to a smart algorithm, the platform can endlessly generate new exercises for students, thereby providing the students with a personal learning path. The platform recognises which subjects they find easy or more difficult and then automatically takes larger steps or a step back as and when required. The students get personalised advice on matters they should take another closer look at. "Now, using the Comenius grant, I can pay a programmer to start building the course material exactly as I want it and integrate it into the platform. We also intend to experiment with various forms of personalised feedback, to assess what best works independently for the students' learning styles."

Vyrastekova now sketches the problems at play in the micro- and macro-economic context in her lectures. The exercises students make on the SOWISO platform link with these and are discussed in more detail in the seminars. Students take four intermediate tests that provide insight into their progress and count for 20% towards the course's end mark. The final exam counts for the other 80%.

Reactions and results

"In the past year I used the blended variant with the SOWISO platform for the first time. In the evaluations I now hear that students think I explain a bit too much and the pass rate has decreased when compared to the 'flipping the classroom' variety. Perhaps the students when working independently from home were actually working harder. However, the grade the students are now passing the course at has risen an entire point.

"I hear from students that they deeply appreciate the platform. Remarkably, they also commented that not everything dealt with in the course could be found on the platform. And they're right; I haven't yet been able to make about ten percent of the subject matter available on the platform. They regret that. Of course there were some teething troubles. Sometimes a certain result was marked as wrong, while it was actually right. I have excellent contact with the programmers, so we're trying to sort this out for the next time.

"Students like the ability with this platform to independently study whenever they want. The material is offered in small enough chunks that allows them to check for themselves how they're doing. They also appreciate the intermediary tests. That's a signal, a line in the sand: this is where you should be with this material for that particular week. You still find students don't come very well prepared to the work groups, however they do prepare well for the tests. The intermediate tests look exactly like the final exam, so of course they really work hard for that. It's a clear indicator of where they are."

Vyrastekova first wants to optimise the SOWISO platform in her Mathematics in Business and Economics course. She then hopes to create an ongoing line of method teaching to run throughout the entire Bachelor's programme, available at all times for students to practise with. She also wishes to create ongoing assignments, to allow students to practise with the mathematical side of a realistic problem and then later in the programme to study the same problem within the context of a different subject.

“It’s been some time since I discovered SOWISO and I now see it used more often at different universities. Apparently I backed the right horse. In Groningen and Maastricht they are miles ahead with blended learning. You see an enormous synergy emerging there because many lecturers and programmes are now using it. Unfortunately here we are not quite used to teaching in this manner yet. It’s taken me a great deal of time and energy to redesign my teaching methods and to find people to help me in the process. In future I hope to do this type of thing together with other lecturers, as a joint action.”

<i>Course</i>	<i>Mathematics in Economics and Business (B1; 6 EC)</i>
<i>Programme</i>	<i>Bachelor Economics and Business Economics</i>
<i>Numbers</i>	<i>150 studenten</i>

ATTENTION

Responsibility

The responsibility for practising with the subject and achieving the right level lies entirely with the students.

Self study

Students can study the material in their own time and at their own pace using knowledge clips. The exercises are offered in small portions and students receive detailed and automated feedback on their efforts.

RELEVANCE

Applying the theory

Problems and issues are discussed in the lectures that play out in the micro- and macro-economy. The assignments students make on the digital platform connect with this and these are discussed in detail in the seminars.

Preparing for exams

The intermediate tests are set out in exactly the same manner as the final exam.

CONFIDENCE

Adaptive teaching

Students practise with a digital learning platform at their own level and receive adaptive and personalised feedback. The platform generates endless new assignments for students to practise on. The lecturers experiment with various forms of feedback to assess what works best, depending on the students' different styles of learning.

Structure

The frameworks and deadlines are relatively tight. Students take intermediate tests that provide insight in their level and to ensure they are on course.

SATISFACTION

Visible achievement

Due to both the personalised platform and the intermediate tests, students have insight into their personal level relative to the required end level at all times.

Attention, Relevance, Confidence and Satisfaction are the four elements of the ARCS-model (Keller, 2010) that can be used to identify motivational aspects of teaching concepts.

LITERATURE

This booklet was inspired by, among other things:

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