Teaching Portfolio for Iver Bragelien, NHH, 1 March 2020

My ambition with this teaching portfolio is to demonstrate my interest in student learning, how I explore new ways of teaching, my development over time, and the way I work to improve teaching as a leader and a colleague. I start with a short biography, before I discuss my teaching philosophy and my teaching and assessment repertoire. These sections overlap, to show the link between my philosophy and my teaching. I comment on my supervision activities and the pedagogical materials I have developed. I explain how I plan programs and courses, and how I influence the teaching of others. Finally, I give some evidence of my students' learning and my dissemination activities.

Biography

I got my master's degree from NHH in 1991 (*Siviløkonom*). I then worked for an international management-consulting firm. I received my PhD at NHH in 2000, followed by a postdoc period. During my PhD and postdoc, I stayed two years at Scancor, Stanford University.

I have been associate professor at NHH since 2003. I was never required to follow courses in pedagogy at NHH, but I have taken part in many NHH, national and international seminars on teaching, I have participated in a one-day Case Teaching Workshop (which I organized), delivered by The Case Centre in 2010, and I took a 50 hours Teaching Portfolio course in 2019 (NHH-PED3).[1]

At NHH I have developed and been responsible for two MSc courses: Management Control (*BUS400N Styring av større foretak*) and Organizational Economics (*BUS428 Økonomisk organisasjonsteori*).[2] Since 2003, I have been program director for a two-year Executive MBA program in Management Control (*Økonomisk styring og ledelse*), where I also teach. I have given several guest lectures at the bachelor level (SOL4 *Strategisk ledelse*), in other executive programs, and in bachelor/master courses at other schools. Furthermore, I have taught parts of a PhD course in Management Accounting for the Nordic countries. I have thus teaching experience from all university levels. Furthermore, I have supervised around 200 master theses, in the MSc program and in the Executive MBA programs.

I was dean for the master studies at NHH 2005-2011, and for four of those years I chaired the National Disciplinary Strategic Unit for Economics and Administration (NRØA), which is part of Universities Norway (UHR). Before my period as dean, I was profile coordinator for the Business Analysis and Performance Management profile (*BUS - Økonomisk styring*).

Since 2018, I am deputy head of the Department of Business and Management Science (*Institutt for foretaksøkonomi*), responsible for teaching and supervision. I am member of the NHH committee for teaching (*Utdanningsutvalget*), and I am on the advisory committee for the BUS profile.

Teaching philosophy

I have always enjoyed teaching; as boy scout leader, as recruit school instructor in the air force, as substitute teacher for pupils age 7 to 18, as management consultant, and as business school professor. Other teachers I have met on my way have influenced my teaching philosophy. My primary school teacher taught me to care for those you teach, the scout leaders taught me to teach by example, the consulting firm partners taught me to tell a story (with self-confidence) when I

[1] See attachment 1 for a description of the case workshop and a diploma from the teaching portfolio course.
[2] BUS428 is now given by Professor Ola Kvaløy.

presented something and being a facilitator in change projects, and other professors have taught me that there is no "best way" to teach. It was for example a revelation to hear James G. March at Stanford use classical literature to discuss management practices. During the last 15 years, I have had the privilege to observe a large number of excellent teachers in the MBA program. Finally, I have learnt from discussions on pedagogy in seminars, courses, and meetings.

The way I see it, the students are responsible for their learning, but a teacher can facilitate the process. This resembles change processes in organizations, which I facilitated as a management consultant. Having given the students (employees) a platform for learning (change), by introducing them to theories, models, and techniques, the end result in form of learning (change) is much better if they early in the process start solving problems themselves, instead of the teacher (consultant) giving them the answer. In other words, I have always been familiar with the benefits of active learning, but I am more conscious about it now, and active learning is a much bigger part of my teaching, compared to 15-20 years ago, when my teaching was more "traditional".

The emphasis on active learning in the pedagogy literature (see for example Bonwell & Eison, 1991), was communicated to me by Arild Raaheim in meetings and seminars at NHH more than 10 years ago (see Raaheim, 2016a). I have, for example, looked to Biggs & Tang (2011) and Bruff (2010) for inspiration as to how to achieve active learning in practice. At a case teaching seminar in 2010, I was introduced to some techniques, that I have since used in practice, also in classes without case teaching. Following Mazur (2009), I have over time introduced more and more active elements in my teaching (instead of traditional one-way lectures). The active elements give more interaction among students and between students and teacher during the learning process, which I believe is important for the learning process, in line with the thinking of Lev Vygotsky.[3]

To encourage active learning, the students are offered mandatory and voluntary assignments between meetings. In meetings, we discuss large and small cases, the students do exercises, I ask questions, encourage questions from the students, allow students to discuss among themselves, let the students vote on alternatives, I write on the whiteboard, etc. During Covid-19, I have developed these methods further, by introducing even more case discussions and elements of flipped classroom teaching (inspired by my colleagues' use of this technique and Bishop and Verleger, 2013). I have also started using new applications, such as Explain Everything (whiteboard on the iPad) and Mentimeter (for Q&A, polls and comments) to facilitate learning. I now use less PowerPoint and more whiteboard, to make it a learning experience that happens there and then.

One effective active learning strategy is problem-based learning (Boud & Feletti, 2013), where the students are given a problem to solve, without being given a way to solve it. I usually allow them, first, to work on the problem in pairs/groups, before we discuss the problem/case together. The aim is to foster deeper understanding, not simple memorization (Craik & Lockhart, 1972). In this way, I introduce active learning *before* lectures, which stimulates deeper learning than activities after lectures, according to, for example, Brant et al., 1991. A few (especially older EMBA) students are frustrated by this method of teaching (as they tell me in their evaluations), but their exam results show that they learn more, which corresponds to results found by Deslauriers et al. (2019).

Combining different elements of blended learning in my courses, I attempt, first, to consider the pedagogy, and, then, to develop in-class and out-of-class materials, to stimulate effective student learning – using both new technology and classroom-based methods, as suggested by Benson et al. (2011). For my new cohort of MBA students, starting in September 2021, I have scheduled Zoom meetings between the physical meetings, to allow for more active learning, with case discussions and

[3] See https://educationaltechnology.net/lev-vygotsky-sociocultural-theory-of-cognitive-development/ for a short introduction to the thinking of Lev Vygotsky.

problem-solving under supervision. I use more and more prerecorded videos, to free up time when we meet for interaction among students and between teacher and students.

As discussed by Zakrajsek (2018), in many studies of active learning versus traditional lecturing, the active part can be as little as 10% of class time. That is, the benefits from active learning strategies shown by the meta-studies (such as Freeman et al., 2014), do not rule out the value of traditional lectures ("continuous exposition by the teacher"), as part of the classroom meeting. Hence, I have kept elements of the traditional lecture in many meetings with the students. But, I interrupt the traditional lecture with interactive elements to engage the student (Gagne et al., 1992; Biggs & Tang, 2011; Raaheim, 2016), or the lecture is followed by more active elements, which the lecture has enabled the students to do, going from "understanding" to "applying" and "analyzing" as learning objectives, in Bloom's taxonomy (Armstrong, 2010).

To develop a deeper understanding, I believe it is important to show how the different parts of a course or a program fit together (Biggs & Tang, 2011). I therefore spend considerable time to discuss this with the students. I have developed frameworks to show the bigger picture, and I use cases and business games where the students must combine insights from several fields, including ethics (Podolny, 2009; Weber & Englehart, 2011).

In an active learning environment, feedback to the students is important, as emphasized by Hattie and Timperley (2007). The students can then adjust their activities, working hardest in those areas where they are the weakest. I use teaching assistants to write comments on mandatory assignments, and, in my two-year program, I give one-on-one feedback after every exam. To provide prompt feedback, as emphasized by Chickering and Gamson (1987), I try to structure the meeting so that a student realizes his/her learning during the meeting, for example by using questions/polls and exercises/cases in class. I make sure to be available during breaks and after the meeting (also on Zoom) to answer questions and to discuss interesting issues that students raise.

I believe that thorough planning leads to better lectures. However, I also believe in adapting during the lecture, to the actual progress of the students. To get the necessary feedback to adjust my teaching, I encourage two-way communication. In more and more lectures, I ask the students questions anonymously (through Mentimeter), at the beginning of the meeting, to uncover their previous experience with the subject area and expectations for the meeting – and, at the end of the meeting, to find out what their take-aways are.

I base my teaching philosophy on the underlying principle that, in order to best stimulate student learning, I should adapt my teaching method to the student group (educational background, experience from practice, group size, etc.), the subject area (for example mathematical-based vs. discussion-based), the course/program structure (weekly vs. monthly meetings; one-semester course vs. two-year program), and my own knowledge and skills.

This strategy has developed over time, having observed the strategies of other teachers, and the evaluations of their and my own lectures. I have also been inspired by discussions in the pedagogic committee at NHH, where Professor in pedagogy Arild Raaheim told us that "there is no clear recipe for how to teach students" (Raaheim, 2016a, p. 45). Instead, teaching methods should be aligned with the specific learning outcome (Biggs, 1996). A model I find useful, is found in Brühwiler and Blatchford (2011), where teacher characteristics and classroom context and processes are important drivers for the learning process. As a formal leader, and as a mentor, I have encouraged my colleagues to adapt also their teaching methods to context, skills and their own preferences and competences. This way, our students meet different teaching methods both inside a course and across courses, which has a positive effect on student learning (Raaheim, 2016a).

I do the development of my teaching as small experiments, as discussed for example by Mike Astbury (2016).[4] Before I initiate a change, I try to understand how my current teaching works, and I consider (and discuss with others) how a change may affect the student learning. I then test it on the students. To evaluate the effect, I talk to the students, I ask them about the method in a questionnaire, and I look at the exam results, to reflect on how the change may have affected student learning, as suggested by Finlay (2008) and Cherasaro et al. (2015).

As already alluded to, I plan my courses/programs/lectures carefully to achieve deeper learning (Craik & Lockhart, 1972; Beattie et al. 1997; Biggs & Tang, 2011). In a business school, we teach to prepare students for 40-years careers. Our students must be able to do many different tasks, and face a variety of challenges, both in their starting jobs and throughout their careers. The students should be able to understand new management theories and tools that are developed, and they must be able to adapt the theories and tools to new contexts. I therefore introduce some concepts early in a program, and come back to them repeatedly, to allow the students to develop a deeper understanding of the underlying principles and mechanisms.

I make sure the content of the course is up to date, with respect to the research I refer to and most of the cases I use, I discuss theories from different academic fields, I show how empirical studies support the theories, and I try to stimulate an explorative learning environment, by involving the students in small experiments in the class-room, e.g. to uncover their risk preferences, and by asking them to develop hypotheses based on real-world cases.

To engage the students (Gagne et al., 2004, Raaheim, 2016a), I demonstrate my own interest in the area, for example by referring to my own relevant research, consulting work or appearances in the media. I give evidence of the importance for practice, by using real-world examples, guest lecturers and company visits. And, I challenge the students with questions that are difficult to answer, so that they realize that it is in their interest to learn more. To activate the students early in the course, I devote the whole second lecture in BUS400N to a case discussion. To incentivize everybody in the class to take actively part in class discussions, I base course approval on participation in case discussions (in BUS400N), and I grade students for class participation (in the MBA program).

The way I as a teacher communicate with students, and the way I give feedback, can be seen in relation to the transformational leadership concept in organization theory, which is about charisma, individualized consideration, and intellectual stimulation (Bass, 1985). Bolkan and Goodboy (2009) find that the degree to which a teacher scores on the leadership dimensions is positively related to the learning outcome, which is in line with the thinking of Albert Bandura.[5] These effects may be associated with how intrinsic motivation is stimulated (Bolkan et al., 2011). I believe in using both transformational leadership and transactional leadership (grades) to motivate the students, in the same way companies use both leadership styles to motivate employees (Judge & Piccolo, 2004).

Important parts of the learning process take place outside the lecture hall. I therefore strive to achieve what I call "an optimal level of frustration" when our meeting is over.[6] The students must have reached a level of understanding, so that they can continue the learning process on their own, but they must also be motivated (by some level of frustration) to learn more. If they feel they understand "everything" as they leave the lecture hall, they will not have that motivation. To stimulate the learning process between the lectures, I give the students voluntary exercises and small cases. The students are thus encouraged to apply theory to practical cases throughout the course.

[4] https://www.britishcouncil.org/voices-magazine/how-experiment-new-ideas-classroom.
[5] See https://educationaltechnology.net/social-learning-theory-albert-bandura/.
[6] This strategy has some parallels to the idea of "benign disruption" (Baker and Jones, 1979), and it aims to encourage what Raaheim (2016a) calls "etterlesning" (postreading).

Outside the classroom, I believe that working together with fellow students facilitates their learning process.[7] Allowing the students to work in groups on mandatory assignments is a way to stimulate such cooperation, but I also encourage the students to form informal groups (*kollokviegrupper*), where they discuss issues raised in the lectures, solve problems and prepare for exams.

The choice of assessment is important for the learning process. I follow the idea of constructive alignment (Biggs, 1996), adapting the assessment methods to the stated learning outcomes and the activities during the course/program. With the introduction of the Norwegian Qualifications Framework, I put more emphasis on explicitly stating the learning outcomes with respect to knowledge, skills and competences (autonomy and responsibility), and I map the wide range of assessment methods I use to the learning outcomes. The assessment methods should incentivize the students to become active learners early.

Teaching and assessment repertoire

I have already linked my teaching and assessment strategies to my teaching philosophy in the previous section. In this section, I reflect more on how my strategies have developed over time and discuss some examples in more detail. In table 1, I summarize the teaching and assessment methods in the two programs where I do most of my teaching. Please see the biography at the beginning of this document for my other teaching.

Course/Program	Role	Teaching Methods	Assessment methods
BUS400N Styring av større foretak	Course responsible & Lecturer	Lectures (with PowerPoint & whiteboard), problem-solving in and between meetings, case discussions, polls, pre-recorded videos & podcast, flipped classroom, guest lectures from practice etc.	2 mandatory group assignments (P/F) 1 mandatory case discussion (P/F) 5-hour home exam (A-F)
Executive MBA i økonomisk styring og ledelse (MØST)	Program director & Lecturer	Lectures (with PowerPoint & whiteboard), problem-solving in and between meetings, case discussions, polls, prerecorded videos & podcast, blended learning, flipped classroom, guest lecturers from practice, business game, consulting projects, company visits etc.	2 5-hour home exams (A-F) 2 5-days home exams (A-F) Class participation (A-F) 2 projects (P/F) 1 master thesis with oral presentation/defense (A-F)

Table 1. Overview of teaching and assessment methods in the two courses where I teach the most.

I intuitively started to actively involve the participants in the learning process as a recruit school instructor and substitute teacher for children and high-school students, and I developed it as a management consultant, where the interaction with the client management was key to a successful workshop or presentation. In my early MBA lectures (before I became a program director myself), I

[7] See the second principle of Chickering & Gamson (1987, p.2): "Good practice […] Develops reciprocity and cooperation among students."

continued to invite the students to two-way communication in the classroom. I remember Professor Tom Colbjørnsen commented on this after one lecture. He said that I had a "special way" of leading the two-way communication with the students. But, at the time, I was not conscious about why and how I invited to such two-way communication. So, when I started to teach MSc students more than twenty years ago, I kept to more traditional lectures. Not having many real-world examples, I prepared my lecture notes carefully, to make sure I had enough material for each lecture. I gave the students assignments to do between lectures, and I asked the students questions in class, but I did not have other tools to encourage active learning.

During the last twenty years, I have gradually introduced new elements, to make the students more and more active in their learning process, both in the classroom and between the meetings. In the MSc course, I took a big step in this direction in 2011, when I started to teach the course again after six years as dean. I rewrote the learning outcomes for the course, and I considered how my teaching and assessment should address those learning outcomes, adding more active elements to the course. I did a revision again in 2020 – to prepare for digital teaching in the Fall. For the MBA program, I have also added more and more active elements, and, after rewriting the learning outcomes, I plan for more blended learning, case discussions, and student projects for the next cohort.

In both programs, I have added more voluntary exercises / small cases between meetings. We discuss these in the meetings, and the students must do their «homework» to fully benefit from the sessions. Last Fall I started to ask the students questions about the exercises and the cases in Mentimeter, to allow everybody to test their learning anonymously before I start discussions in class. Inviting everybody to participate in this way, seems to motivate more students to prepare in advance. I plan to study this effect more formally for the cohort starting in the Fall. In the 7.5 ECT course BUS400N, the students now have 14 exercises/cases between our 19 meetings, including the three mandatory assignments. Furthermore, I make earlier exam questions available for the students, and I give them solutions for these, after we have finished the relevant module.

To evaluate the effect of having so many exercises/cases, I have studied what the students write in their evaluation, I have spoken to students in breaks, and I have considered how students do on their exams. There is less variation in grades now, which I believe is due to the larger number of exercises/cases during the course. Furthermore, the students are more active in the rest of the class, which I believe is a positive side-effect. The students like the exercises/cases, as two comments in 2020 illustrate: "Smart å legge ut øvingsoppgaver til neste forelesning. De jeg gjorde på forhånd, ga meg stort læringsutbytte!" and "Fantastisk å få konkrete oppgaver etter hver time som gjennomgås på neste time. Utrolig effektiv læring!"[8]

Inspired by the case course I followed in 2010, I changed one of three mandatory assignments of the MSc course from a written paper into a mandatory case discussion (lasting around 60 minutes). This seems to have been a great success, even though I have had 100-200 students participating. Even in Zoom, this works well, as I require the students to turn on their video. The students are extremely active during the discussion. While we discuss the case, I use a whiteboard to capture comments and to show calculations. I also ask questions to students who have remained passive so far. In the course evaluations, I have specifically asked the students about the mandatory case discussion, and the response has been very positive.[9] As the mandatory case discussion has been such a success, in 2020 I devoted another whole meeting in the course to a (voluntary) case discussion.

[8] The students write that it was smart to offer exercises to the next meetings. They learn a lot from them. It is a very effective way of learning.

[9] A comment from a student in 2018 illustrates this: "… caseforelesningen var veldig morsom og spennende, og jeg kunne ønske flere fag tok i bruk denne undervisningsmetoden." In 2020, a student wrote: "Den siste

In my evaluation of the new case I added in 2020, I noted the following benefits and challenges:

+ Students produced all the relevant arguments
+ A lot of student activity & High attendance
+ Everybody could contribute (in breakout rooms, polls, video/voice and chat)
+ Most students were happy ("Very good lecture!" in the chat afterwards)
÷ Students need to sit somewhere they can speak
÷ The administration of break-out rooms in large courses can be challenging
÷ Students must devote time for preparations (read, watch video, listen to podcast)

Inspired by my colleague Eirik Sjåholm Knudsen, I asked half the groups to argue for the introduction of a bonus, while the other half should argue against it. I believe this made the group discussions easier and the plenary discussions livelier. Of 102 respondents, 33% said their group discussions were "very good", 55% said the discussions were "good", and 10 % said they were neither "good" nor "bad". 2 % answered "Don't know". Nobody answered "bad" or "very bad". I plan to repeat the "experiment" for the next cohort of students and consider doing more such large cases.

When asked about how the teaching activities in BUS400N in 2020 contributed to their learning, the students rated (on a scale from 1 to 5) the smaller exercises/cases in the lectures the highest (4.0). The voluntary exercises between lectures (3.9) and the larger cases (3.9) are rated high too. The mandatory group assignments are not rated as high (3.63), but that result may partly show how "satisfied" they were and may not reflect the actual learning outcome (Borch et al., 2020).[10]

In 2020, I used four different types of cases in BUS400N: 1) Large cases of 75 minutes (with break-out rooms for 30 minutes and then group presentations, polls, chat and summary on PowerPoint); 2) Medium cases of 25 minutes (break-out rooms for 10 minutes and then poll, chat and a short PowerPoint presentation); 3) Smaller cases of 10 minutes (with or without break-out rooms of 5 minutes, and then poll, chat and whiteboard/PowerPoint); and 4) Mini cases of 5 minutes – with polls, chat and whiteboard/PowerPoint). It turned out that using break-out rooms for small cases did not work well, as many students could not speak where they were sitting. With online teaching, the big cases (with break-out rooms) and the smaller cases (without break-out rooms) worked the best.

Also inspired by the case course in 2010 and other pedagogy seminars, I have changed the structure of many of my lectures. One example is my lecture on financial indicators, which used to be a traditional lecture, where I gave them the definitions of measures and then explained why the definitions make sense. Now, I use a problem-based learning process. I show the students a profit-loss statement and a balance sheet, and then I simply ask the students to, first, forget any definitions they may have learnt in the past, and, second, to consider how they would measure performance. After discussions in groups, and a Mentimeter survey, we spend the rest of the session (2 hours) developing the measures together. I know how the whiteboard should look in the end, but the students' suggestions and comments decide the process to get there. See attachment 3 for an example of such a whiteboard. Student evaluations and exam results show that this problem-based learning process leads to deeper understanding than using a traditional lecture, where I asked them to "remember" definitions instead of facilitating "understanding" in Bloom's taxonomy.

In the MBA program, we have for a long time had many active elements, such as a business game, which was introduced 20 years ago. Another idea I adopted from a former program director is a

caseforelesningen var veldig lærerik. Den krevde at en satte seg inn i stoffet i forkant, samtidig som man høstet fordelene av å høre å andre sine tanker og meninger."

[10] Some students do write that they learnt a lot during the group assignments, as this comment in 2020 shows: "Jeg tror det å jobbe med innlevering 2, med en gruppe, var det som fungerte best i kurset. Det var utfordrende, men førte til at jeg lærte masse."

morning session we call "Reflection Corner". We start the day with a 30 minute session, where we discuss something not necessarily linked to the subject that day (such as negotiations by women, heuristics, something we have read in the media, a company's strategic challenges etc.), which is a way to warm up the students before the main session.

Over time, we have substituted several traditional lectures for more active learning methods in many of the meetings. For example, for capital budgeting (investment appraisal), the students used to have two full days of lecturing. Now I give a 15-minute introduction, before they do a case for 2-3 hours. The students then do several more cases over a two-month period, and we give them only a half-day lecture on the subject. Some of the cases I have developed myself, so that the cases build on each other. With this learning process, the students get the necessary time to understand the principles we use, instead of memorizing techniques. Judging by the (open book) exam results, it seems that the problem-based learning process (using multiple cases) leads to better results, and the students are happier than when we had two full days of lectures.[11]

We have also changed the way we teach business valuation. We used to have one lecturer teaching two days in a row. Now we have one lecturer teaching one day, and then I spend the entire next day doing a large case with the students. This way the students go through the whole process twice. First, from a theoretical perspective (illustrated with examples), and then from a practical perspective (based on theory and related to other examples). The student evaluations indicate that this is a very successful approach for teaching the valuation process. The subject is too complex for the use of a problem-based approach, without an introductory lecture, but this two-stage approach works much better than two days of traditional lecturing. Earlier we had to spend a lot of time on cases in addition to the two days. Now I give them only one more valuation case (to do before the next meeting). Furthermore, the exam results improved when we did the change. The A+B share increased from 60% to 84% for the cohorts just before and after the change.

Another, more general change of my teaching, has taken place gradually over time, but I did take it to a more extreme level last year. I use the whiteboard much more than I did earlier. The students write in their evaluations that the use of the whiteboard helps their learning process.[12] When I use the whiteboard, I slow down, and the students become more involved through questions and answers. This February I had a 5-hour online lecture for an MBA class, where I almost exclusively used the whiteboard (in addition to break-out rooms, plenary discussions, chat, and Mentimeter). I had prepared around 70 slides in PowerPoint, but instead of showing the slides, I discussed the most important issues with the students using the whiteboard (with a practical case as starting point). I gave them the slides afterwards for more details.

When teaching digitally, it is more important to stimulate active learning during meetings (Orlov et al., 2020). In the Fall of 2020, I therefore used more interactive elements in BUS400N. Answering a question about how they liked the Zoom meetings, a student wrote: "Utrolig godt, her har Iver Bragelien vært best av alle. Han har vært god på å bruke polls, oppfordre til spørsmål og innspill i chatten og bruke det aktivt, bruke breakout rooms der det er hensiktsmessig (men ikke for mye), og bruken hans av iPad har vært uvurderlig. Likte særlig godt case-forelesningen der han på forhånd oppfordret alle til å delta aktivt og ha på kamera hele tiden. Jeg skulle gjerne deltatt på den måten

[11] The last time we had a two-day lecture on this, the lecturer got a score of 3.2. The first time the same lecturer did only a half-day lecture, his score was 4.0 (on a scale from 1-5, with 5 as the highest).

[12] A student comment from 2018: "Det jeg likte best var at Iver aktivt tar i bruk tavlen, i tillegg til å ha en powerpoint i bakgrunnen, istedenfor å kun ha powerpoint som de fleste forelesere har på NHH. Dette gjør at forelesningene blir mer engasjerende og man husker bedre de viktigste momentene fra hver forelesning."

under hele kurset dersom han hadde oppfordret til det, slik at det var normen, og vi hadde fått varsel på forhånd så jeg alltid hadde vært stelt/presentabel."[13]

Not all students are happy with the active elements. Some did not like break-out rooms (because they could not take part where they were sitting or because the discussions in the group were uninteresting) and others did not like that I switched between whiteboard and PowerPoint online (because it was confusing and difficult to follow). Thus, as I have introduced more active elements in my teaching (in 2019 and 2020), my score on the student evaluations in BUS400N has fallen from 4.9 (in 2018) to 4.4 (in 2020). But, the exam results, and the comments in the student evaluations, indicate that they learn more, even though they are not as happy (Deslauriers et al., 2019).

Experimenting, I have discontinued elements which I thought (at the time) to be a good idea. For example, in the period 2012-2014, I sent out a questionnaire (electronically) to the students before the MSc course started, to uncover their thoughts on bonus pay before we had had any lectures on the subject. I then used their answers in several of the lectures to relate theory and empirical evidence to their opinions. I thought this would be a good instrument to engage the students. However, based on their reactions in the classroom, conversations I had with students during breaks, and student evaluations, I decided the questionnaire did not contribute that much to student learning. Thus, I stopped using it, albeit I personally found it interesting. Instead I now use polls in the relevant lecture, to shorten the time between the questionnaire and our discussion of the issues.

One area where I work constantly to strike the right balance, is my "energy level" in my meetings with the students. When should I add energy and when should I step back to allow for reflections (Raaheim, 2016a) and dialogues (Dysthe, 2001) among the students? In my experience, my level of energy should adapt to the activity level of the students. Sometimes, the students tell me (in the evaluations) that I have nailed it, but there are times when I realize I have been overly energetic. In other words, I must work on this aspect of my teaching. I believe, however, that I have become more relaxed over time, and that this has helped the learning of the students.

I use Canvas and E-mails to communicate with students between meetings, to emphasize what I expect the students to do, and to prepare them for the meetings. I have also recorded videos and a podcast. In my MSc course, I record most of the lectures (but not the introduction, case discussions, guest lectures and the summing-up of the course), so that the students can go back to the video, if there is something they do not remember or understand.

In different courses, I teach differently. Earlier, I have had smaller PhD and MSc classes where I did not have any traditional lectures at all. Instead, the students read articles, and we discussed the insights of those articles in the meeting, with me being a discussion partner instead of delivering a prepared talk. That learning process was much like the flipped classroom technique (Bishop and Verleger, 2013).

I use a variety of assessment methods, including mandatory group assignments (pass/fail), mandatory case discussion (pass/fail), 5-hour home exam (A-F), 5-day home exam (A-F), consulting-type projects (pass/fail), thesis with oral defense (A-F), and class participation (A-F). This way I can test skills, knowledge, and competences during the course/program, covering all the learning outcomes, in accordance with the principles of constructive alignment (Biggs, 1996).

In my MSc course (BUS400N), I used to have a 4-hour school exam. But, as I do not have any learning outcomes about factual knowledge ("remember" in Bloom's taxonomy), the assessment in that

[13] The student was happy with the use of polls, the chat, break-out rooms, the use of iPad and the large case discussions in the course.

course now consists of 2 mandatory group assignments (pass/fail), one mandatory case discussion (pass/fail) and a 5-hour home exam. The exam is linked to the opportunities and challenges in a real company. Last year, all questions in the exam were about Hurtigruten. Using a case like that ensures that the students can “apply”, “analyze” and “evaluate” their use of theory, frameworks, and models to the real world (to continue to use Bloom’s taxonomy). We thus assess the students´ deeper understanding of the mechanisms and their ability to reflect on a higher level. The students say the three mandatory activities are important because “it forces you to work actively throughout the course”.[14]

Most learning outcomes for “knowledge” are assessed both by an assignment/case and the home exam (e.g. to “understand how incentives can be used as a management tool”, or to “understand the motivation for transfer pricing and the principles that can be used”). Only one learning outcome is tested only by the home exam (e.g. the learning outcome to “understand how management tools, such as budgeting, rolling forecasts and balanced scorecard, can be used in organizations”).

I use group assignments to develop and test “skills” in two of the technical modules of the course (“use formal models to design optimal incentives” and “calculate financial performance indicators” which are two of the three learning outcomes for skills). This way I make sure the students can do comprehensive calculations using real-world data, and thus “apply” the knowledge in a realistic setting. The home exams are also used to assess these skills, but then we focus on how to “analyze” a case and “evaluate” the realism and usefulness of the results, models, and tools. The mandatory case discussion is used to develop and test skills in a third module of the course, on transfer pricing. Furthermore, the case discussion is used to assess how students “reflect critically on theories, methods, tools and data” and “reflect on how elements in a management control system affect each other” (which are two of four learning outcomes for “competences”). See attachment 9 for a mapping of all the learning outcomes and assessment methods in BUS400N for 2020.

In the Executive MBA program, I use 5-hour home exams (A-F) as well, but there I have the opportunity, in addition, to include 5-day home exams (A-F) to give the students more time to both “apply” knowledge and “analyze” real world settings, and to “evaluate” the results, models and tools. Again, I use real-world cases in the exams. Furthermore, for the next cohort, I plan two projects (pass/fail) for the students, in addition to a master thesis (A-F), allowing them to do in-depth work for real companies. For the second project, the students must use econometric techniques, to prepare them for the master thesis (A-F) in their second year. In the master thesis, the students are expected to show that they can produce new or original work (“create” in Bloom’s taxonomy), which is used to assess how students can contribute to innovation (which is one of the learning outcomes of the program under “competences”). See attachment 12 for a mapping of all the learning outcomes and assessment methods for the MBA program (for the cohort 2021-2023).

In the last half year of the MBA program, I grade the students’ participation in the classroom. This part of the program is more about reflection and integrated cases and business games, where it is crucial that all the students take actively part. I guide the students on how they should behave in the classroom (see attachment 2). To stimulate the right classroom behavior early on, I give the guidance sheet to the students at our first meeting (even though the grading starts more than a year later). That way, I set some expectations about classroom activity, to stimulate learning for the entire group of students. Furthermore, I give feedback to the students during the program, to enable them to adjust their participation.

[14] Comment in student evaluation of 2018: «Videre likte jeg veldig godt innleveringsoppgavene, og fant dem svært relevante i forhold til det som er læringsmålene i kurset. De var ganske omfattende, men dette er helt greit for da lærer man mest. Syns det er helt greit å ha tre innleveringer totalt, for dette gjør at man tvinges til å arbeide med kurset jevnt gjennom semesteret.»

I started grading participation in 2007, and I have asked the students about the use of this form of assessment in every program evaluation. The majority of the students like it, because it leads to more balanced discussions in the classroom (as more students take part), but there is also a minority of students who do not like to be graded this way (as they believe it disturbs the learning process). I have thus chosen not to extend the assessment method to the rest of the program, but I have kept it for the last half year of the two-year program, as it motivates active learning and I can assess one of the learning outcomes (to be able to discuss problems and analyses with specialists and others).[15]

To sum up my teaching and assessment repertoire, in some meetings the students are expected to be active all the time (case discussions, problem-based learning sessions or business games). In other meetings I use "interactive" lectures, where I combine teacher exposition with active learning elements (such as questions, exercises, mini-cases, shorter discussions among students, breakout sessions, polls etc.). I give the students mandatory and voluntary assignments between meetings, I communicate with them using Canvas and e-mail, and I organize company visits and business games. For assessment I use mandatory group assignments and case discussions, 5-hour and 5-day home exams, projects with oral presentation/defense, and class participation.

I do not believe I have reached the end point of my development as a teacher. The Covid-19 gave me a boost to explore how new technology can help the learning process of the students. I intend to continue experimenting with active elements and blended learning, also in a post-pandemic world.

Supervision

Annually, I supervise 5-10 groups of MSc students (1-2 students per group) and 7-10 Executive MBA groups for their master thesis. When I was dean, I developed the first guidelines for the supervision of MSc students at NHH. Building on these guidelines, I have developed a short document, which I hand out to the students I supervise, see attachment 4. There I suggest a possible structure for the thesis, general advice, and guidelines for the interaction between the students and the supervisor.

At the start, we have a meeting where we exchange expectations about the thesis and the supervision. I emphasize that the students are both project owners and project managers. They are also responsible for the supervision process and must make sure that we meet, or exchange e-mails, sufficiently frequently for their thesis work. To manage a large project, and to know when to consult others, is an important part of the learning process for the students. I also stress that what I say during the supervision sessions must be considered idea-generation and not instructions! The students know more about the project than I do, and they must decide to follow my advice or not. This approach allows a more open and creative process. The supervision process depends critically on how the students gather data and analyze them. I make sure to discuss two key questions thoroughly with the students: 1) What data to gather how (including the actual questions they ask), and 2) How to analyze those data. For some analyses (multiple regression analyses), we may have daily meetings during the critical phase.

To develop further as a supervisor, I consider attending the course "Fundamentals of PhD Supervision", organized by NHH, which starts in June.

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[15] From the evaluations of the MBA program, the students seem to be happy with open-book home exams, and the mix of 5-hours and 5-days exams. Furthermore, they learn a lot, they say, from the projects based on real-word company issues. They are the least happy with the grading of student participation (3.4 in 2019 on a scale from 1 to 5, with 5 as the top score). 5-days home exams and projects receive much higher scores (4.4 and 4.6 respectively).

Pedagogical materials

I have written several articles and book chapters to assist my teaching, particularly on incentives. I have written book chapters to give a general overview of the entire field (Bragelien, 2016; Bragelien and Kvaløy, 2016), and articles to treat a particular problem area, see Bragelien (2018), Bragelien (2012) and Bragelien (2005) for some examples. In addition to summing up relevant international research, the book chapters and articles provide Norwegian context and examples not found in the international literature (that the students are also required to read). Bragelien (2018) I wrote to complement other Norwegian literature, which, in my opinion, gave an incomplete picture of the international empirical evidence.

I have developed several frameworks, both to help the students get an overview of the subject area and to help them analyze a specific case. I enclose two examples in attachment 5. The first framework shows how different management tools are used. The second framework helps the students analyze the effects of a management tool in an organization. Furthermore, I have developed several cases to use in my teaching. Some of these are based on studies I have conducted in Norwegian companies, see attachment 6 for two recent examples. Finally, I have recorded several videos and a podcast, and this is something I will continue to do, albeit selectively, as it should not replace synchronous communication with the students.

Teaching planning and contributions in own department, at NHH etc.

Over the years, I have been responsible for the planning of many programs and courses at different levels. As chair of NRØA, I was in charge of the process to develop new national curricula (plans) both for the Bachelor and for the Master in Economics and Business Administration, after the introduction of the qualification framework in Norway in 2009. I also took part in the development of new national regulations (*forskrift*) for the Bachelor in Accounting and Auditing.

As dean for the master studies at NHH, I restructured the master program, discontinuing some master profiles and establishing others. I also developed new curricula for our master studies and worked to improve the teaching in the master courses, introducing the requirement to have learning outcomes in all courses etc.

At the master profile level, I headed the development work for the Business Analysis and Performance Management profile (*BUS - Økonomisk styring*) before we introduced the two-year master program in 2004. I am still on the reference committee for the BUS profile.

As Program Director for an Executive MBA program in Management Control (*Økonomisk styring og ledelse*), I work with Trond Bjørnenak to renew the content, to invite new lecturers and to develop the teaching and assessment methods (Trond and I run cohorts starting alternate years).[16]

At the course level, I have developed two MSc courses: Management Control (*BUS400N Styring av større foretak*) and Organizational Economics (*BUS428 Økonomisk organisasjonsteori*).[17] BUS400N I developed based on a previous course (*ROS322 Emner i økonomisk styring*), which I gave together with Terje Hansen and Frøystein Gjesdal. BUS428 I initiated, and then I worked together with Trond Olsen to develop the course.

[16] See attachment 11 for an overview of the MBA program 2021-2023.
[17] See attachment 8 for the course plan for BUS400N Fall 2020.

Education Management

As chair of NRØA, I took part in many national discussions on teaching and learning before and after the introduction of the qualification framework, and I helped establish national subject areas committees; who were mandated to develop and align teaching nationally, with respect to content, level, literature, assessment, grading, etc. As dean for the master studies at NHH, I implemented the national qualification framework, to strengthen the quality of teaching, and I chaired the NHH pedagogy committee. As profile coordinator for the BUS profile, as head of teaching and supervision at the department, and as program director for an MBA program, I have worked together with my colleagues to develop and improve teaching within our subject areas.

I have always encouraged experimentation with new teaching and assessment methods. One of the other participants at the teaching portfolio course I attended in 2019, recalled how he had talked to the dean ten years ago when he wanted to make some major changes in his course. The dean was very positive and asked how he could help, by providing resources. Only afterwards, the participant remembered that I was dean at the time. My philosophy has been to say "yes" to all initiatives from faculty, unless I had a strong reason to say "no". I want to encourage new thinking and entre-preneurial behavior, and to do that, we must be positive whenever we encounter it.

As a teaching coordinator, I have introduced short lunch seminars, where the department offers food to attract people (before Covid-19). In these meetings, we have discussed course planning, supervision, teaching, and assessment. The meetings have been well attended.

In my formal roles, and informally, I have had many conversations with my colleagues on how they can develop their teaching and assessment methods to increase student learning. I speak to them about how NHH can help them (relieve them of other work, give them assistants, send them to pedagogy courses, etc.), I discuss the teaching methods they use, and I give them examples from my own teaching to illustrate other ways to teach. Especially in the last year (with Covid-19 restrictions), I have had many such conversations – as I was an "early mover" using new technology (such as Explain Everything, where I was the NHH "test pilot", and Mentimeter).

The students at NHH evaluate every course they take, and I use these evaluations as a starting point for private conversations with my colleagues on how they plan and teach their courses, including the assessment methods they use. I speak both with those who do well (to show that we appreciate their good development work), and I speak to those with poorer performance (to trigger changes).

I was a mentor to Steffen Juranek, after we hired him to give my course in English. I have discussed the content of the course and teaching and assessment methods. I read the exam questions (and he reads mine), and we discuss what we can do to improve the courses we give. This year, I am mentoring Paul Pelzl, in the NHH mentor program, and I have already watched one of his lectures, after which we had an hour-long discussion on how he can develop his teaching further.

As program director for an MBA program, I attend all the lectures given by other faculty. Combining my own observations with the student evaluations of the lecture, I am in a unique position both to learn personally about new ways of teaching and to discuss with other teachers how they can improve student learning in their classes.

In 2019, I was member of the evaluation committee for excellent teacher practitioners in Social Sciences at the University of Bergen; reading the applications, interviewing select candidates and writing reports on the candidates, with recommendations to the board.

Evidence of Student Learning

See the table below for the students' evaluation of my teaching in the course BUS400N since 2004 (I did not teach the course 2006-2010). The score is 1 to 5, with 5 as the best. The average score has ranged from 4.4 to 4.9. In 2019, 190 students took the course. See attachment 10 for the complete evaluation in 2020.

2004	2005	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
4.5	4.6	4.4	4.5	4.6	4.8	4.5	4.8	4.8	4.9	4.4	4.4

Comments from students indicate what they appreciate: "Liker at det er en dynamisk dialog mellom foreleser og oss studenter i forelesning." "Forelesningene er gode, da Iver Bragelien bruker mye tid på tavlen og dermed regner grundig gjennom de forskjellige modellene og teknikkene. Det gjør det lettere for oss å følge hva som skjer. Innleveringsoppgavene og casediskusjonen var også meget nyttige og gav veldig mye innsikt i faget. Det var også valgt ut interessante gjesteforelesere, spesielt siden disse til en viss grad presenterte forskjellige perspektiver på faget og hvordan det kan anvendes." "Det jeg synes fungerte best i kurset var stadig bruk av case og smartboard for å illustrere de ulike temaene vi gjennomgikk. Dette gjorde det lettere å forstå temaene og pensumet, samtidig som man ser den praktiske anvendelsen av det." "Mye relevant fra næringslivet." [18]

In 2016-2018, the BUS400N students asked for more case discussions and exercises. Having introduced more such elements during the last two years (2019-2020), there are fewer such comments now, but there are still some students who ask for more. This is something I will consider for the next cohort, starting in August 2021.

In earlier years the students have complained about the book I used. Last year I revised the literature list, and I removed the book. Now the students complain that there isn't a book for the course, only articles and book chapters. When it comes to the literature, I do not necessarily follow the advice of the students, as being able to read relevant (and sometimes challenging) literature is a learning outcome in the course.

At the end of the two-year MBA program, the students evaluate how I as program director have planned and lead the meetings. See the table below for my score, ranging from 4.4 to 4.8.

2007	2009	2011	2013	2015	2017	2019
4,6	4.7	4.4	4.8	4.7	4.8	4.5

An (anonymized) e-mail from an MBA student received 22 May 2019 shows that the way we teach, enables the students to use the skills and knowledge in practice: "Da sitter jeg på Schipol etter å ha tilbrakt et par dager sammen med sveitsiske investorer. I tillegg til at møtene gikk veldig bra, var det nesten som en muntlig eksamen i MØST, og jeg fikk brukt mye av det vi har lært, samt en del fra prosjektoppgaven. Mitt mål med å være med på MØST var nettopp å kunne være med i slike diskusjoner og ha full forståelse for hva som blir sagt, og ikke minst å kunne bidra med gode innspill i diskusjonene."[19]

[18] The four students comment on the two-way dialogue, my use of the whiteboard, the assignments I give them, the case discussions we have in the course, the examples from practice I give, and the guest lecturers.
[19] The student (who was about to finish his MBA) explains how he has used what he learnt in the MBA program in a meeting with investors.

Although I do read evaluations carefully, and I follow advice I get (such as to slow down writing on whiteboards), I do not trust them blindly. As shown by Deslauriers et al. (2019), students in active classrooms learn more, but they feel that they learn less. My lower score in BUS400N in 2018-2020 and in the MBA program in 2019, as compared to earlier years, may reflect such a phenomenon.

In 2012, I received NHH´s teaching award (*pris for fremragende lærerinnsats*), see attachment 13.

Dissemination

I have given presentations and chaired discussions on teaching and supervision as head of NRØA, dean at NHH, chair for our pedagogy committee, and departmental coordinator for teaching. As program director for an MBA program, I have shared my teaching experience in our forum for program directors at NHH.

I have also given talks as an ordinary faculty member, for example in October 2015 at the Pedagogic Day at NHH, on the supervision of master students. In March 2017, I spoke at a NOKUT breakfast seminar on how to design Excellent Teacher Practitioner programs at Norwegian universities. And in October 2020 I held a seminar on Case Teaching Online.[20]

In May 2019, I became member of the new research group at UiB, TeLEd (Teaching and Learning in Higher Education). I have gathered data (using polls during BUS400N – and extra questions in the course evaluations) to write a paper on how the digitalization of last Fall seems to have increased the learning for some (24 percent) and decreased the learning of others (34 percent), and how this relates to active learning. The hypothesis is that Covid-19 gave more room for active learning for many students (working on assignments, exercises, cases etc.), but it reduced interaction among students outside the classroom. As already mentioned, I also plan to study how the use of Mentimeter in class can motivate students in large classes to do voluntary assignments between meetings.

Concluding remarks

It is important for me to stress that I have much I can improve in my teaching. I intend to explore how to stimulate even more student activity throughout the courses and programs for which I am responsible - to create an even better learning environment. To get more input on how to achieve student learning using cases, I want to attend another case course, at Harvard or elsewhere. To reflect more on my own teaching, I plan to write one or two papers based on my teaching. Finally, I am happy to contribute to better teaching at NHH, in any way I can.

[20] See https://www.youtube.com/watch?v=nZJl9530ivI&feature=youtu.be and attachment 7.

Attachments (in a separate document):

1. Description of Case Teaching Workshop 2010 and Diploma for Teaching Portfolio course 2019.
2. Guidelines for student participation in classroom (developed by Iver Bragelien).
3. Example of whiteboard in lecture on profitability measures (by Iver Bragelien).
4. “How to write a good master thesis” (by Iver Bragelien)
5. Examples of frameworks developed to help students get an overview of the subject area and to help them analyze a specific case (by Iver Bragelien)
6. Case – Fremsidige Forsikring (by Iver Bragelien) & Case – Noroil (by Iver Bragelien)
7. Presentation for seminar about case teaching online at NHH 2 October 2021
8. Course plan, BUS400N Styring av større foretak, Fall 2020
9. Learning outcomes and assessment mapping for BUS400N Fall 2020
10. Course evaluation (by students) BUS400N Styring av større foretak Fall 2020
11. Program overview, Executive MBA in Management Control 2021-2023
12. Learning outcomes and assessment mapping for MBA in Management Control 2021-2023
13. Diploma and description of teaching award 2012

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