

STINT teaching sabbatical at the Asian School of the Environment, Nanyang Technological University, Singapore, autumn 2022

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Introduction

I received my teaching sabbatical grant just before the COVID-19 pandemic broke out. Like most of the world, I did not realise how severe the pandemic was and how it would impact the world. In early 2020 I was planning my recognisance trip and started to discuss teaching possibilities at the Asian School of the Environment like the situation was normal and that the new disease starting to spread around the world was not more severe than the normal flu and would pass quickly without much consequence. How wrong I was. The planning changed quickly as the pandemic unfolded during the spring and countries started to close their borders. I had already booked flight tickets for the planning trip over Easter break, but this was cancelled as Singapore closed its borders, and the sabbatical was postponed.

Together with my contact at ASE, we continued to make plans for the sabbatical in the spring of 2021 which became autumn 2021, and spring 2022. Finally, Singapore lifted the border restrictions and the sabbatical finally happen in the autumn of 2022. Thankfully, I had an understanding head-of-department and director-of-studies at my home department who accepted that the plans changed again and again. And, maybe of more importance, it still fitted my partner's schedule, and she could join me for the whole sabbatical.

One unexpected effect of postponing the sabbatical through the pandemic was that I had the trip to look forward to, and this carried me through the frustrating years of online teaching, cancelled field trips and worries about getting seriously ill.

Planning and preparation

Planning for a half-year stay in a country far away from home, in a city you never visited, and working in a new department comes with a certain amount of uncertainty. On a rational level, I knew that none of these things was particularly difficult or couldn't be sorted out. But it is one thing knowing, another thing altogether feeling completely at ease with the uncertainty.

The first uncertainty was arranging the VISA for me and my partner. For me, it looked straightforward with the VISA and the work permit. But, to bring an unmarried partner we needed to show proof that we are living as "sambos", or in what is called a "common-law marriage". This is in principle the same as being "sambo", but how do you get a certificate showing you are "sambos"? Sweden doesn't issue official documents showing our status as "sambos" other than that we are living in the same house. The Singapore Immigration Authorities state that they accept a notarised *affidavit* certifying that we are living in a common-law marriage. I had no idea what an *affidavit* was, how to find a notary to sign it, or what the Singapore immigration really wanted. But my worries were largely unfounded. An affidavit was simply a written statement by us stating that we are living in a common-law marriage. To get it *notarised*, was easily arranged by visiting a *notarius publicus*, who signed it and made it look

very trustworthy with gold stickers and stamps. I am not sure if this is always as smooth, but for us worked without problems.

The application for the VISA was handled efficiently by the administration at the Asian School of the Environment. And the *affidavit* seemed to be all ok, and we received our approval to enter Singapore. My partner was not planning to be employed and work in Singapore, and for us, the normal accompanying VISA was enough.

We had decided early in the process that we wanted to live on campus and avoid commuting every day. We also expected campus housing to be more affordable than finding anything on the private market. Generally, housing in Singapore is expensive. And we learned while in Singapore that housing prices had increased during the last year and that there was a sort of housing crisis developing. The private market for rental apartments is also surrounded by regulations that make it more expensive to find short-term affordable housing. One additional complication to the housing situation was that a new subway station is under construction on the NTU campus. In the future, this will greatly increase the accessibility of NTU and make it easier to commute between the city centre and the campus. But the construction has forced NTU to close a large share of its campus housing and this has created a shortage of campus housing that affects both staff and students. For three incoming STINT fellows, NTU only offered one apartment on a first come first served basis. Since my partner and I had decided we wanted to live on campus, I responded directly when I saw the email with the offer and secured the apartment.

The apartment was on Tan Lark Sye Walk, or what was previously known as Nanyang Valley, and overlooked a pond and the President's house on the hill on the other side of the valley. The setting was a nice contrast to the busy city centre and an enjoyable place to live with its greenery and exotic wildlife including hornbills and a family of otters. The apartment was larger than we needed (and expensive), but the spare room came in handy when we had family visiting.

Teaching activities

Planning teaching as an incoming lecturer has its difficulties, a difficulty which probably goes both ways. When coming into a new department and teaching you want clear instructions and expectations, but as a receiving department, it is likely difficult to know what to expect of the person coming and therefore difficult to give clear instructions. The discussion about what I would actually do started with: "have a look at the webpage and see if any course would suit you". From the short course descriptions, it was not easy to see where I could fit in, what I could do, how the courses were taught or what the other teachers would think. It was also hard to do this without a clear idea of expectations. But, despite how hard and frustrating this might be, it is also very liberating and gives academic freedom I expect few university teachers are experiencing in their day-to-day working lives at their home universities.

Eventually, I was offered to teach one full course in Environmental Earth System Science open to all students at NTU. The reason I was asked to take the course was that the teacher who normally taught the course had left with short notice, and what they asked me to do was to be the head teacher and do all lectures, essays, and exams, for a course with 150 students. It was not without apprehension I agreed to this. I teach similar courses in Lund, and my research is also within this broad field. So, I was confident I could handle most of the course content without too much difficulty. But being responsible for a course with 150 students was a bit intimidating. The schedule

was not too tight with one three-hour lecture per week, two peer-marked essays and two multiple-choice question tests.

To accommodate for planning and preparing for the course we arrived in Singapore about two weeks before the start of the semester. I met with the very helpful administrative staff and my academic contact. This was about all the introduction I got. I was handed a folder with all the course materials from the previous teacher and told GO. After that, it was up to me to handle the course, or that was at least how I felt.

Looking back, I am happy I took on the course and all the responsibilities. On the subject matter I was within my field and mostly within things I feel reasonably confident in teaching. I was from the start attracted by the idea of doing a full course from start to finish, and I got to see the students every week and I could develop my teaching throughout the course and see the students developing.

Since the course was open to the whole NTU and all levels, I had students from early stages in their bachelor's program to PhD students. Because of the teaching style with a big weekly lecture that was also recorded automatically and distributed to the students through the learning platform, many students took the course as a side subject to their other studies and normally I had 50-100 students in the class. The only times I had all students in the lecture hall were for the midterm exams.

Assessment of the course was through multiple choice questions and essays. The multiple-choice questions were very well designed and forced the students to be active and apply their knowledge. I was told by one exchange student that the questions demanded more of an application of their knowledge than what he had seen in other courses. I can't say if this represents a general feature of courses at NTU or if this was an isolated impression from one student. But big courses on a basic level tend to gravitate towards more static learning and memorising, and I think the course material I had inherited had taken the multiple-choice question format a long way towards also testing how well the students could use and apply their knowledge. To me, this showed that it is possible to construct very good multiple-choice exams that test different aspects of the students' knowledge and abilities.

The essays were constructed as topical discussions. One on the role of plate tectonics for Earth's environment, and one on natural disasters in Asia based on information from Gapminder. The students were to write two pages and cite relevant literature. The most interesting part for me was the grading of the essays. This was done entirely as peer marking. The students had to read and mark three essays, meaning that the grade was based on three students' markings. As a way of forcing the students to do proper peer marking, the students were also asked to grade the peer marking of their essays. The grading was based on detailed criteria specifying what they were supposed to base the grades on.

As a learning exercise, the essays were brilliant. Having the students read other essays and relate the text to grading criteria forced them to reflect on what makes up a good essay and what is needed to get a good grade. And it also prepares students pursuing a career in science on the concept of peer review of their work.

Most students understood the point of the peer marking and did the exercise very well. But it also created anxiety and frustration among the students. Some students expressed that they thought it was unfair that their grades were in the hands of other students. This is a relevant and important criticism of this way of grading. I handled this by explaining the reason I did the exercises this way (the added learning outcome from reading and grading essays), and I also made it clear that it was still the examiner (me) who had the ultimate responsibility for the grading, and that I would overrule

any student grade if I thought it was not done properly. This triggered some students to ask me to review the peer marking, but in every case, I agreed with the students' peer markings. In general, the students made an effort to do the peer marking well. It is likely that the students graded the essays softer than I would have done, I think this is normal and also acceptable in most cases. I was very impressed with the level of their writing which was at a very high level in the essays I did read.

The final grading was based on the sum of the two essays and the MCQs. One difference in the grading was that the final grades were reviewed first by the director of studies at ASE and then by a grading committee at NTU, to make sure that the grades followed the NTU guidelines. Coming from the Swedish higher education system where grades follow the criteria and the examiner has the last word, I experienced this as a very different way of setting grades.

I also did guest lecturing on one master's course, joined field trips with a course in Tropical ecology, participated in sampling in mangrove swamps for a PhD student project, and gave a talk about my research. During the autumn, the social events also started to come back, with pizzas and drinks with PhD students and staff on Fridays.

Lessons

The sabbatical was a boost for my confidence as a teacher and gave me a renewed joy of teaching basic geoscience to diverse groups of students. I could draw on my experience from teaching geoscience and environmental science students on different levels in Sweden, and transfer this to a different course in a new setting. Many things were similar, we used, for example, a similar textbook as the ones I have used previously and the previous teacher on the course was also from Europe. The host department was in general very international, as a consequence of being a very young department and the staff has been recruited internationally, which also made me feel at home. This meant I could get into teaching easily.

Some things were different and forced me to step out of my "comfort zone" and deal with things I am not very used to. One example is that one of the first lectures on the courses had a section on the difference between science and religion. This is maybe not such a strange topic to bring into a course in Earth System Science as it might appear at first. The subject, and the ongoing climate and environmental changes have a clear existential dimension that is for example recognised in the religious world, with Pope Francis' encyclical from 2015 as maybe the best example, and it is also recognised within academia with the work of Bruno Latour as one prime example. In my teaching in Sweden, the existential aspect of geoscience is very rarely made explicit within courses or course material, if at all, and I think this is especially true for basic introductory courses. If the existential aspect of geoscience is taught, it would mostly be in specialised courses on the topic of religion and science, and not as an integrated part of an introductory course. I did feel less secure, or outside my 'comfort zone', lecturing about this, although it was only a short section in one of the first lectures. One of the aspects that made me feel insecure, was that I was lecturing for a larger group of students who were likely to have stronger religious beliefs or at least come from or live in communities with strong religious traditions. In my teaching in Sweden, I have rarely, if ever, reflected on my students' religious beliefs or how this would influence the learning situation. I do think I handled this part of the course well, and I had one student coming up after the class towards the end of the course asking about my religious beliefs and we discussed this topic at length. For me, an atheist with only limited religious schooling, this was an eye-opening discussion that showed me that our subject has a true existential dimension that deserves to be taken seriously. It really shows how important it is to be

exposed to different outlooks on life, and how we can benefit from taking a genuine interest in and showing respect for other people's beliefs and thoughts.

In my teaching in Sweden, I will try to bring some of the things I learnt during the sabbatical into my own practice. Implementing peer marking to a larger extent is something that I think can benefit the learning outcomes from courses and can be used as a tool to improve essay writing.

I also think that the existential aspect of earth and environmental science is an area we as science educators should not shy away from. In my view, it is apparent that the understanding of how our earth functions and how it is threatened today by our actions can both inspire and scare us. And when we are facing the really big existential questions, like why are species appearing and disappearing, or if we make new fundamental discoveries in the future, such as finding life on another planet, or maybe even more difficult: finding evidence of life that has gone extinct on another planet, we who are educated in the sciences better be prepared for the deep questions about ourselves this will raise. I think we, who in some sense do research and teach about the big existential questions of Earth from a scientific perspective can benefit from also discussing this with our students.

The stay at NTU also spurred research collaborations on the environmental evolution of Singapore island and sea level changes in the mangrove forests of Pulau Ubin. The projects are small-scale pilot studies that can potentially grow into larger projects and collaborations that I hope to pursue in the future.

The sabbatical was, if not the best trip I have ever done, it was the best and most rewarding trip I have done as a university teacher.

Opportunities for dependent partner

On arrival at NTU, the international exchange coordinator Mrs Wanda Preiser held a short introductory meeting about the university for us incoming STINT fellows. When Mrs Preiser learned about my partner's profession as a teacher she arranged contacts with faculty staff at the National Institute of Education – NIE, which developed into a series of activities.

My partner's profession is a teacher in Biology and Science for upper secondary school (16-18-year-olds), and she holds a PhD in Geoscience and has ten years of experience in research and teaching at university (basic, advanced, and graduate level). She has an interest in Science Technology Engineering and Mathematics (STEM) education in general and more specifically in the sustainable development perspective.

The contact with NIE developed into a series of diverse activities together with several faculty staff at NIE including an international conference and contact with the Science centre of Singapore. She was also invited to give a lecture on a PhD course for educational science research students from Indonesia about the Swedish educational system. The activities and contacts that were established during the stay were very rewarding and gave an international and South East Asian perspective on STEM education. The contacts with researchers within educational science have led to future collaboration opportunities, and the willingness of the NIE to accommodate a visitor in their activities made the stay professionally rewarding.