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# TEACHING SABBATICAL 2015

National University of Singapore

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## National University of Singapore

National University of Singapore started out as a medical school in 1905 with 23 students, became King Edward VII College of Medicine 1913, and National University of Singapore (NUS) in 1980. Today NUS is one of two large universities in Singapore, the other is Nanyang Technological University (NTU). NUS is a leading global university with approximately 38 000 students from 100 different countries, 28 000 are undergraduate students and 10 000 are graduate students. There are 16 faculties comprising art, business, computing, medicine, music, law, and engineering. NUS is a campus university with three campuses; Kent Ridge, Outram and Bukit Timah. In 2015 NUS was ranked as number one in Asia (QS University Rankings: Asia) and number 12 among the leading universities in the world (QS World University Ranking 2015/2016).



*Yong Loo Lin School of Medicine, NUS*

### Alice Lee Center for Nursing Studies

The medical faculty, Yong Loo Lin School of Medicine, consist of 18 departments among one is Alice Lee Center for Nursing Studies (ALCNS), where I had the honor to spend the autumn semester of 2015. ALCNS started in 2005 and have today 55 employees (30 academic staff, eight research assistants, and 17 administrative staff). Head of the department is professor Emily Ang. ALCNS educate nurses, during the autumn semester of 2015 there were 400 undergraduate students, 33 master of nursing students, and 43 postgraduate students (six master of science students and 37 PhD students). Every year ALCNS accept 130 new nursing students, starting in August. Yong Loo Lin School of Medicine is located at the Kent Ridge campus.

## Preparation and planning

I did not know very much about STINT when the leaders at Linköping University asked if they could nominate me as a candidate for a STINT fellowship. I read about STINT and realized that this was a fantastic organization and a great opportunity for me, so I said yes. However, I was pretty sure I was not going to be one of the lucky ones so I kind of forgot to ask my husband before I gave my consent. Eventually the application was prepared and during that time my family and I decided that if I would receive the fellowship I had to go by myself because our youngest daughter wanted to continue school in Sweden. This was because she had just taken a year of for an exchange programme in New Zealand and was just about to return to Sweden.

### Visiting week

It turned out that I was one of the lucky ones! I went to the first STINT seminar in February and found that to be very valuable. A lot of questions were answered, good suggestions provided and I felt really happy after the seminar. Just a few weeks later I checked in at NUS for my visiting week. The administration staff



*Kent Vale*

at ALCNS where really helpful and booked an apartment for me at Kent Vale, which is an apartment complex for employees at NUS. I got a time-table for my scheduled meetings of the week and was introduced to some of the staff members. It was a very welcoming week that encouraged me to come back. I was happy with my choice to go so early because it felt good to be prepared and to know where I was going to live and work. On the other hand, it was a long waiting until I finally left. However, it turned out to be good that it was a long waiting because of the unexpected preparation of paper work I suddenly faced.

### Singaporean Nursing License and more

In order to teach nurses in Singapore I needed to be registered with the Singaporean Nursing Board as well as hold an employment pass. The employment pass went pretty smooth; I completed the papers back home and went for a booked meeting at the Ministry of Manpower when I arrived in Singapore. The difficulties for me were to gather all the information needed for the registration with the Singaporean Nursing Board. This was because they requested certificates of education sent directly from the universities as well as from me. Since I have my education from three different universities (Lund (RN), Gothenburg (Nurse Specialist), and Linköping (MSc, PhD)) and some degrees were taken before the entrance of the computer and before certificates were written in both Swedish and English, it made everything a little bit more difficult. However, I finally got everything settled thanks to an authorized English translator and some visits at the office of the Notarius Publicus. Another important paper to prepare in advanced turned out to be the Claim for Exception from Singapore Income Tax.

I could not have managed these registrations without the outstanding help from Ms Hanom.

## Tasks and responsibilities

My goals with the visit at ALCNS were to learn more about the nursing education system in Singapore, to compare how pedagogical methods are applied and utilized at ALCNS and Linköping University (LiU), and to initiate research collaboration.

### Teaching

In order to learn more about nursing education and pedagogical methods I was invited to participate in both the undergraduate programme and the Advanced Practice Nursing (APN) program. During the autumn semester there was no module focusing on pediatrics in the undergraduate programme. Instead I have been following two different PBL groups, I have been participating in several different simulation activities and in assessments at the Centre for Healthcare Simulation, and co-supervised one honor student. I have also joined several Inter Professional Education (IPE) sessions.

In the APN program there was one pediatric student group of seven students. I have followed them through two different modules; Advanced Health Assessment (Pediatric) and Foundations of Advanced Practice Nursing. I have been co-teaching, given lectures and participating as an observer during classes and seminars. The two modules have been very different from each other, the Advanced Health Assessment (Pediatric) module was focused on lecturers provided by pediatricians from the hospitals and out-reaches to the hospitals while the module Foundations of Advanced Practice Nursing was more focused on student participation and therefore included more seminars given by the students themselves. In order to learn more about blended learning I signed up for two different seminars ('Flipped Classroom' respectively 'Developing e-learning resources using Camtasia Studio') provided by the NUS Center for Development Teaching and Learning. Seminars like these are provided continuously for NUS staff and are free of charge.



*Students from the APN program*

To learn more about the clinical practicum, I have been participating in education for preceptors about assessment of students, read research produced at ALCNS about the clinical practicum and enjoyed discussions with the module coordinator for the clinical practicum. I have also performed study visits at the pediatric clinics at the National University Hospital (NUH), KK Women's and Children's Hospital, and the Khoo Teck Puat Hospital. Moreover I was invited to the neonatal intensive care unit at NUH to give a lecture for the staff.

### Research

I found ALCNS to be an environment where several researchers share interests with me. Therefore, some common projects have been started, three grant applications have been made, and some research projects are under planning for the future. The research collaboration will hopefully give me a chance to come back to ALCNS in the future.

To stay at NUS housing apartments Kent Vale among hundreds of other researcher from around the world also gave opportunities to meet people from other departments at NUS. Thanks to that, a research project between Sweden, Singapore, and Canada has been initiated.

During my stay in Singapore one senior lecturer at ALCNS who is registered as a PhD student at Jönköping University had her 90% seminar. I had the honor to be in the review committee. I also had the opportunity to participate in two PhD defenses at ALCNS.

The PhD program at ALCNS involves an elective module called Independent study (4 credits). It is an individual program of study undertaken in conjunction with an overseas university. During my stay at ALCNS one PhD student has become interested to perform her independent study at Linköping University and to, among other things, visit the student driven IPE wards. Therefore, we have arranged for her and her supervisor to visit LiU during two weeks in May 2016.

I was also invited to write a book chapter for an international textbook in nursing and to speak about my research at the Honor Society of Nursing, Sigma Theta Tau International. [http://www.upsiloneta.org.sg/wp-content/uploads/2013/05/Stress\\_friend-or-foe-write-up\\_Final.pdf](http://www.upsiloneta.org.sg/wp-content/uploads/2013/05/Stress_friend-or-foe-write-up_Final.pdf).



*Me and the President of the Honor Society of Nursing Singapore*

## Activities during the semester

Year 2015 happened to be the year when Singapore celebrated 50 years as an independent country, Yong Loo Lin School of Medicine celebrated 150 years as a medical school and ALCNS celebrated 10 years as a university nursing department. And, Singaporeans know how to celebrate; a lot of food, activities, food, happenings, food, performances, food, music, food, and sales in the stores.

In November ALCNS arranged the 3rd NUS-NUHS International Nursing Conference. The three-day conference attracted researchers from Asia, Australia, New Zealand, and Europe. I participated with an oral presentation and in the committee for nominating best poster. Also, one of my PhD students came to the conference from Sweden and presented some of her research. In July 2016 there will be another conference held in Singapore, 4<sup>th</sup> Annual Worldwide Nursing Conference and I have been assigned to the program committee for the conference.

## Comparison between the foreign university (NUS) and the home university (LiU)

### The nursing education system

#### Bachelor of Science (Nursing)

The NUS Bachelor of Science (Nursing) degree is a three year full time modular-based undergraduate programme. The first year focus on Foundations of healthcare and nursing, the second year focus on Increasing complexity of healthcare and nursing, and the third year focus on Implementation and application of healthcare and nursing. Two of the degree requirements that differ from Sweden are that 8 out of 120 credits must be read outside the student's faculty, and that the requirements for fulfillment need to be completed within four years (unless under extenuating circumstances). Upon successful completion of the programme the former students can register with the Singapore Nursing Board to practice as a registered nurse. Thereafter the nursing registration need to be revised every year. The Bachelor of Science (Nursing) program offers 28 different short modules and students usually enrolls in four modules each semester. Another difference is that in Sweden it is required that the student complete an independent research project in order to achieve a Bachelor of Science (Nursing) degree, while NUS have made that an option for high performance students during a fourth year.

If the NUS student achieve a minimum of cumulative average point<sup>1</sup> of 3.5 (range 0-5) at the end of the three year nursing programme they can apply to proceed to a fourth year, which is the honors programme, leading to the award of the Bachelor of Science (Nursing) (Honors) degree. The focus of the honors programme is evidence-based nursing and science. During this year the honor student is required to complete an independent research project comprising 16 credits.

The grading system at NUS comprises 11 levels while the nurses at LiU only receive fail or pass. Also, the NUS has a Bell shape system which means that only the top of the tops can get the highest grade.

#### Master of Nursing

The NUS master of nursing programme is a two year full-time module-based programme. The programme is established to meet the need to equip nurses with advanced knowledge and skills for clinical management of patients and to enhance the use of research findings as the basis of effective practice. The master of nursing programme has four tracks: acute care, adult care, mental health, and pediatrics. However, several of the modules included in the master of nursing programme are common for the students irrespectively of what track they have chosen. There are also several modules of choice. Because the education is focused on clinical work there is no independent research project. To be eligible for the program the registered nurse need to have a diploma and two years of experience within the track applied for. Upon successful completion of the programme the former students are eligible to apply for certification as an Advanced Practice Nurse (APN) with the Singapore Nursing Board.

A master of nursing programme focusing exclusively on clinical skills (not research) is not available at LiU. Most of the magister programmes (nursing) in Sweden are one-year full-time programmes focusing on clinical skills as well as research. They are a combination of Singapore's Advanced diploma in nursing,

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<sup>1</sup> The Cumulative Average Point is the weighted average grade point of all the modules taken by the student.

Master of Nursing, and Master of Science (nursing). To achieve a magister degree at LiU the student has to complete an independent research study of 15 credits. There are currently 11 different magister care tracks to choose between in Sweden: anesthesia, district, elderly, intensive, medicine, mental health, midwifery, OT, paramedicine, pediatrics, and surgery.

Normally there is a tuition fee of S\$ 38 720 over four semesters for the master of nursing programme at NUS and a registration fee of S\$ 20. However, because there is a need for more APNs in the health care system the Ministry of Health are currently financing the studies.

### Master of Science (Nursing)

The master of science programme at NUS focuses on research. The two-year full-time programme comprises 20 credits and one independent research thesis of 40 000 words. The maximum time for completion is three years. This is similar to the general two-year full-time master of science (nursing) program at LiU where the student has to complete one independent research study of 30 credits.

### Doctor of Philosophy

The Doctor of Philosophy (PhD) at NUS is somewhat different from Sweden. It comprises 28 credits, one independent research thesis of 80 000 words, and an oral defense. The maximum time for completion is five years. 12-24 months from the start of the PhD candidature the student must pass the PhD qualifying examination in order to continue the PhD candidature, if the student fails the student will be asked to downgrade to the master of science (nursing) programme. Each year the student has to attend a PhD symposium and during their education give at least one presentation. Every student has a Thesis Advisory Committee comprising three members. The thesis advisory committee is responsible for monitoring the student's progress, make recommendations on the thesis, and submit a progress report to the programme coordinator twice a year. There is one intake per academic year to the PhD programme.

Another difference is that the students in the PhD programme (nursing) at LiU receive credits for participation and presentations in seminars and international conferences. However, this is not structured as a module as it is at ALCNS where there is a special module called the graduate research seminar module.

### Pedagogical methods

The pedagogical methods used at ALCNS are problem based learning (PBL), inter professional education (IPE), simulation practicum, and clinical practicum. It is recommended to practice flipped classroom and blended learning with 50% face-to-face teaching and 50% web-based learning.

### Problem Based Learning

ALCNS conduct PBL in the undergraduate programme. The PBL process is applied in a different way compared to LiU. For each scenario in the undergraduate programme at ALCNS, the group meets twice. At the first meeting (90 mins.) the students arrive prepared; they have already read the scenario so they can immediately start to discuss important facts from the scenario and agree on hypothesis and learning objectives. ALCNS have larger groups, 16-17 students





compared to 6-8 in each group at LiU. So when they have agreed on learning objectives they split in to smaller groups and divide the objectives among the smaller groups. Next time they meet (90 mins.) each of the smaller groups give a presentation that answers to the learning objectives they were given. They use power point, you tube, and other internet sources to present the new knowledge to their peers. At every meeting there is one student acting as the leader during the whole session and who also summarizes and conclude all the findings at the end of the meeting. The teacher is involved during the entire meeting asking questions and clarifies potential misunderstandings. In all cases they include differential diagnosis and a nursing care plan comprising nursing interventions with rationale and how their interventions might be measured. They discuss the scenario from a general as well as specific point of view.

The ALCNS model differs from the model used at LiU where the students usually have not seen the scenario before they join the group, the groups are smaller, and all students in the same group work with the same learning outcomes. In average all sessions at LiU (90 mins.) starts with a discussion about the scenario the students have studied for the present week and ends with a new scenario and agreement for new learning objectives for the next week. This means that the students at LiU are approached to more scenarios during one semester with little time in-between for reflection. Another difference is the evaluation after each group session that is common practice at LiU while there is no evaluation included in ALCNS. The evaluation at LiU is usually arranged so that each student can think aloud about their own contribution to the group session and how the group performed at large. This way the students practice to reflect and comment on their own and others achievements as well as on the group process and progress.

### **Inter Professional Education**

Inter professional education (IPE) is a rather new learning method at ALCNS. The undergraduate nursing program at ALCNS has one IPE session about advanced care planning together with the students from the program for social workers. This session was half a day and started with a lecture about advanced care planning with a special focus on how to initiate communication with the patient and their next of kin about end of life and advanced care planning so the next of kin will be prepared and know what decisions to make if the patient loses consciousness. The students also had group discussion and practiced to initiate a conversation about advanced care planning.

The undergraduate nursing program at ALCNS also has a whole day with focus on patient safety together with students from medical school and pharmacy. They learn together about how to prevent medical errors and practice safe care through lectures, group discussions, and hands on training. Moreover, during year three the nursing and medical students do simulation based IPE with the aim to develop communication and teamwork skills in caring for patients with physiological deterioration.

ALCNS also have IPE between different nursing professions. The APN students have some modules that are common irrespectively of what track they are enrolled in.

Linköping University has worked with IPE for twenty years. In the current IPE curricula all undergraduate students at the Faculty of Medicine and Health Sciences meet at least three times during their education. During the first semester they take one module about health, education, and learning together. Half way through their education they gather in small inter-professional student groups and perform hospital- or primary care based projects about health care improvement. During their last year they are divided into small inter-professional student groups again, this time with the aim to run a ward together as a team. For the time being the IPE wards are located at two (Linköping and Norrköping) of the three hospitals in the

region of Östergötland. At LiU there are also inter-professional sessions and lectures performed within the magister programmes (nursing). Depending on the subject, some or all of the 11 programmes get together and learn together. However, there are no modules that are common for all students in the magister programmes (nursing).

### Simulation-Based Learning

The Yong Loo Lin School of Medicine has a large Centre for Healthcare Simulation for the provision of simulation-based learning. The simulation centre comprises eight clinical wards, 60 consultations room, and two procedural rooms. On top of this there is one emergency room, one operating theatre, one intensive care unit, one labour ward, and one pediatrics acute ward. In the Centre for Healthcare Simulation the



students practice their clinical skills on high fidelity simulators (simulation mannequins) and trained standardized patients. All rooms are facilitated with a video camera, which makes it possible to watch the activity from a video screen outside the simulation rooms, and during assessments it is possible to record the session for later review.

Several of the modules provided at ALCNS' undergraduate programme adopts a simulation based learning approach. For instance, they use standardized patients to practice objective and subjective data collection and assess common health problems and to practice communication and teamwork. They use a multi-mode simulation (patient, relative, nurse, nurse-student) to practice skills as admitting a patient, preparing a patient for surgery, transfer of a patient, discharge, and performing death procedure. And, they use simulation mannequins as well as standardized patients to practice clinical decision making skills in rescuing patients in deteriorating situations. In the RAPIDS (rescuing a patient in deteriorating situations) program they use an evidenced based approach based on research performed at ALCNS. The simulation based learning approach is also integrated in the APN programme but to a smaller extent.

The main difference between LiU and NUS is that the Centre for Healthcare Simulation at NUS is bigger. Another difference is that NUS have a large pool of trained standardized patients. The use of standardized patients is a considerable cost, which has decreased the use of the same in favor of simulation mannequins and early clinical patient contact through clinical practicum at LiU.

### Clinical Practicum

The clinical practicum in the Bachelor of Science (Nursing) program at ALCNS comprises five modules ranging from three to five credits and one transition to practice module of nine credits. The amount of clinical practicum studies are similar between NUS and LiU. However, one major difference is that theory and clinical practice is integrated in the same module at LiU while there are separated modules for clinical practicum at ALCNS. The clinical practicum modules at ALCNS are given at the end of each semester, after the assessment period is completed.

Another difference between LiU and NUS regarding the clinical practicum, is that LiU pay the hospitals for providing clinical education to students while students in Singapore are payed by the hospitals when they perform their clinical practicum.

Otherwise are evaluation and assessment of students very similar between the two universities.

## Action plan

### Undergraduate programme

The undergraduate programme (Nursing) at LiU is big since it comprises two classes, one in Linköping and in Norrköping, with intake every semester. PBL groups of 8-10 students with one tutor is an expensive approach. However the model at ALCNS, to make larger PBL groups is probably not the very best solution. My take home message for the undergraduate programme (Nursing) at LiU is therefore to incorporate some of the ideas of Team Based Learning (TBL) and combine that with Problem Based Learning<sup>1,2</sup>. The purpose for that would be to trigger learning (because of a test that is included in TBL), to lower the cost of tutors since the groups can be much larger, and at the same time keep the problem solving pedagogy.

I also believe that students as well as teachers and coordinators at my division spend too much time in relation to the length of the nursing education, to complete the mission of independent research projects for all students in the undergraduate program. I think LiU need to look at alternative ways to receive a BSc in Nursing that still are compatible with the Bologna process.

Moreover I believe we can work more with the organization and administration of courses and timetables for both teachers and students in order to find more clean and slim processes. That also includes a more developed IT-structure in order to increase web-based learning and to lower the amount of travels between the two campuses in Linköping and Norrköping.

### Magister programme

The magister programme at LiU is much compromised and could easily be prolonged to a two year master education (nursing and sciences) with common modules across the different tracks.

As described previously<sup>3,4</sup> the magister programme (nursing, pediatrics) would be ideal for a two-year master of science programme (nursing, pediatrics). This is because of several reasons: increased evidenced based knowledge in neonatal and pediatric care since the start of the programme in the 70ies, the mandatory integration of an independent study, and the effort to cover primary health care as well as advanced hospital care for children from zero to eighteen years.

One program from ALCNS that could be modified to a Swedish pediatric setting and incorporated in the magister programme (nursing, pediatrics) is the RAPIDS (Rescuing a patient in deteriorating situations). I do also believe that much more class room sessions within the magister programme (nursing, pediatrics) can be flipped and performed as distance learning and web-based learning in the future.

Several potential students apply to start the magister programmes at LiU but eventually they do not show up (because they have applied to several different universities, do not get time off from work, or change their minds). There is a lot of administration in relation to the starts of the programs every year because of

that and it usually take some weeks before the new student class is finalized. Maybe it would be beneficial with for example, a symbolic registration fee in order for potential students to show their seriousness.

## Important lessons

To visit a nursing department in a completely different context has been very interesting and valuable in many ways. There are differences between ALCNS and my own nursing department but there are also similarities. The most striking similarity might be the stress arising from demands within the academic milieu. In both departments I can see how the teachers emphasize to do good teaching and develop their modules in order to provide the best education to the students. At the same time the academic staff need to produce good research because it is necessary for promotion as well as for salary development.

At ALCNS they have pronounced that there is one educational track and one tenure track for academic employees. The academic staff at ALCNS are currently expected to produce a certain defined amount of scientific publications in journals with a certain defined impact factor each year. The demands are similar in my department. However, to enable a high research production for academic staff at ALCNS there are several different grants provided by NUS and easier to temporary employ research assistants. There is also a large pool of administrative staff that do administrative work such as timetables, booking of lecturers, and marking of multiple choice question (MCQ) examinations. Within my own division I believe it is important that we in the future make sure that the right person do the right task in order to lower stress an increase the research production.

The academic staff in ALCNS seems to be very goal settled and focused, and they work many hours a day to reach their goals. The Singaporean lifestyle with high availability of a variety of food to low prices allows them to work more hours and decrease potential stress from grocery shopping and cooking. In my own division a lot of stress may arise from the second “work” (i.e. cooking and cleaning) that is waiting back home.

My challenge when I end this fellowship will be to go back home and as the new head of the Division of Nursing Science find ways to decrease potential stress and at the same time increase the production.



*Picnic and concert by NUS Yong Siew Toh Conservatory Orchestra at the Shaw Foundation Symphony Stage in Singapore Botanic Gardens.*

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