THE GEORGE ALEXANDER FOUNDATION

HAPPY AND HEALTHY LEARNERS

What Australian educators can learn from the Great Danes.

An International Specialised Skills Institute Fellowship.

HAYLEY DUREAU

Sponsored by The George Alexander Foundation

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1. Acknowledgements

The Fellow would like to thank the following individuals and organisations who generously gave their time and their expertise to assist, advise and guide her throughout her George Alexander Foundation Fellowship.

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The Fellow sincerely thanks The George Alexander Foundation for providing funding support for the ISS Institute and for this Fellowship. In 1972, George Alexander AM (1910 - 2008) set up an independent philanthropic Foundation as a way of sharing his wealth and giving back to the community. Today, the main focus of The George Alexander Foundation is access to education for promising young people, particularly students with financial need and those from rural and remote areas.

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2. Executive Summary

Why Denmark?

When applying for the George Alexander Foundation Fellowship, I reached out to people in my network and asked a simple question – 'If you could go anywhere in the world to see best practice in education, where would you go?'. New Zealand and Canada were common suggestions; however, the overwhelming response from educational experts (both from within Australia and abroad) was 'Denmark'.

Denmark is located on Scandinavia's southern edge, and is a safe and secure country with a very low crime rate. The Danes are relaxed, informal, and most Danes can speak fluent English.

The Corruption Perception Index (CPI) ranks 180 countries and territories by their perceived levels of public sector corruption according to experts and businesspeople (Transparency International, 2018). Using a scale from 0 to 100, where 0 is highly corrupt and 100 is very clean, the average score of all 180 countries in 2018 was 43. In 2018 Denmark was ranked as the #1 (least corrupt) country with a CPI of 88. In 2017 Denmark was ranked second behind New Zealand, and in 2016 and 2015 Denmark and New Zealand were shared #1 place with a CPI of 90 in 2016 and 91 in 2015.

The 2018 World Happiness Report ranked Demark the third happiest country out of the 156 countries surveyed (Sachs, J. D., Layard, R., & Helliwell, J. F., 2018), and for many years Denmark has ranked amongst the happiest countries in the world (Kingsley, 2014). In addition to having a stable government and low levels of crime and public corruption, Denmark has one of the world's best education systems. While they pay more in tax than almost any other country in the world, the vast majority of Danes happily pay for what they believe creates a better society - access to high-quality education and health care (Helweg-Larsen, 2018).

When speaking with a colleague about education in Scandinavia, she said to me "Everyone knows that the Scandinavian education system is amazing!". It made me think… why? Why is it amazing? What about it makes it amazing? Surely, if it is just a matter of higher taxes and more money being poured into education then surely other (wealthy) countries would have followed suite?

I set about investigating the Danish Education system with a focus on Science, Technology, Engineering and Mathematics (STEM) Education as well as Student Voice. I visited schools in Denmark and crossed the 16km Øresund bridge from Copenhagen into Malmo where I visited schools in the south of Sweden. I met students and educators, and learned that education in Denmark is about a love of learning, the joy of living, and a focus on building positive relationships. When I set out to investigate best practice in STEM education, I had expected to find revolutionary teaching facilities, state-of-the-art science laboratories, or perhaps high level mathematics being taught to late primary or early secondary school students. What I found instead was an abundance of highly trained teachers, who all absolutely loved teaching, the subject that they teach, and their students.

One key finding was the discovery of a country where teachers are highly skilled, highly regarded experts who have studied for years to master their subject and who are never expected to teach out-of-field. This means that Danish students are taught only by experts, in all subject areas. This led to one the key recommendations – that every effort should be made to attract people who are passionate about their subject and are prepared to pursue excellence in the teaching of that subject,

and that raising standards for people entering the teaching profession should be in combination with ongoing support for pre-service and in-service teachers throughout their training and career.

Other findings include that a component of physical movement was embedded into each lesson in primary and lower secondary school, and many schools had purpose build facilities and resources to accommodate this. Technology was used effectively and innovatively to enhance teaching and learning, and learning spaces were designed to maximise comfort for both students and teachers.

The whole approach to learning and education, from the concept of assessment – which in Denmark often involves oral exams in Mathematics! – to homework (which students are rarely expected to complete), exists on the premise that the most important outcome is that students are happy and healthy, and that they develop into young adults who are able to contribute positively to society. The resounding lack of stress about school or the future was another key finding of the Fellowship, which led to another recommendation – that we must re-think the purpose of education in Australia and ask ourselves why we do what we do. If it is, like the Danes, to help children develop into healthy and happy life-long learners who contribute positively to the local and wider community, then perhaps we need to take some advice from the Great Danes.

3. Fellowship Background

The Fellowship is in the area of Education, and investigates Science, Technology, Engineering and Mathematics (STEM) education, as well as Student Voice and its potential to improve student outcomes. Through enhancing student engagement in both STEM and genuine student voice, we have the potential to empower the youth of Australia to create change, and become le aders and global citizens who will go on to deliver the needs for a future Australia. Confident and competent young people with leadership skills and advanced knowledge in the areas of Science Technology, Engineering and Mathematics, who are ready to take their place in society and make a contribution for the better, can enhance Australia's success in the future global world.

The State and National Governments in Australia are currently investing ways to improve STEM education in schools. There is an identified need to lift student engagement and attainment in STEM education and to support teachers to improve student outcomes. As a national priority, the National STEM School Education Strategy (Education Council, 2015) was developed by the Council of Australian Governments (COAG) in 2015. The report states that a renewed national focus on STEM in school education is critical to ensuring that all young Australians are equipped with the necessary STEM skills and knowledge they need to succeed. The strategy is set to be implemented from 2016 – 2026.

At the time of publication, then Chief Scientist Professor Ian Chubb AC said in regards to the National STEM School Education Strategy, and in particular the call to increase STEM teaching quality, that 'confident, well-prepared STEM teachers are the ones who can inspire students and sustain their natural curiosity in the world around them'. There is a lack of expert teachers in STEM in Australia. The Australian Curriculum, Assessment and Reporting Authority (ACARA) released the ACARA STEM Connections Report (ACARA, 2016) in 2016, which aimed to investigate a range of teaching approaches in STEM and found that overall there was a need for a higher degree of commitment and expertise from the staff involved, both during the planning and implementation phases of teaching.

The Victorian Department of Education released the Education State Framework in 2016 which includes a Framework for Improved Student Outcomes (FISO). Within FISO there is a renewed focus on STEM. A report prepared by the Department of Education (DET, 2016) states that 'quality learning opportunities in STEM disciplines will ensure Victoria has a strong supply of world class professionals with the specialised skills necessary to compete in the global knowledge economy', and that 'Victoria's economy and labour market are shifting towards higher-skilled, knowledge and service-based industries, new and emerging technologies, and the opening up of global markets'.

The Framework for Improved Student Outcomes also encourages schools to make Student Voice a priority and to empower students to fully and proudly participate in school life. The Victorian Education Department acknowledges that students have unique perspectives on learning, teaching, and schooling, and that students should have the opportunity to actively shape their own education.

It is believed that enhancing student voice opportunities will allow students to actively participate in their schools, communities and the education system and make a contribution to decision making processes. This is not unique to Victoria, or to Australia. There are many amazing examples of Student Voice in action around the world, and evidence that Student Voice enhances teaching and learning outcomes and allows students to engage, participate, lead and learn.

In 2016 Dr. Russell Quaglia from the Quaglia Institute released the School Voice Report (Quaglia Institute, 2016). Data collected from over 48,000 students in the USA identified trends in Student Voice and examined the impact of Student Voice on student wellbeing and educational outcomes. Research found that enhanced Student Voice results in enhanced student learning outcomes.

Through my work as a Mathematics educator I have seen firsthand how teachers can inspire students to be passionate about their studies in these areas. Many of my own students have pursued further studies and undertaken careers in the STEM areas. My Fellowship pursuit of best practice in STEM will allow me to further investigate how we can build the capacity of more teachers to deliver passionate STEM education and outcomes to meet the developing needs of the Australian education community. Knowledgeable teachers have the power to inspire and ignite this passion in their students. Teachers lacking experience and passion have the potential to disenfranchise their students.

I believe that it is our responsibility as educators and educational leaders to provide opportunities for young people to develop their leadership skills, so that we are supporting, creating and mentoring the leaders for the future. Through my work in Student Voice and Student Leadership I have demonstrated that empowering students to be confident and responsible individuals and members of their college and local community leads to the development of responsible global citizens. Widespread genuine student empowerment leads to significantly improved educational outcomes for the young people of Australia, and for the wider community. I intend to investigate best practice in the area of Student Voice to see how this can improve opportunities and outcomes for Australian school students, and to bring these findings back to the wider Australian educational experience.

Through this Fellowship it is my intention to combine these two skill enhancement areas to address the emerging needs of a future Australia. By engaging young people in the study of Science, Technology, Engineering and Mathematics, we develop young leaders with the confidence and competence to lead, collaborate, innovate, and contribute to the emerging needs of future Australia.

Fellowship Methodology

The research on which this report is based was conducted primarily through lesson observations and face-to-face interviews with students, parents and educators in schools, both primary and secondary, universities and local municipalities. When meeting with students and educators schools and educational institutions, I did not use a standard interview template.

I had scheduled meetings by reaching out to contacts in my network, and in some cases directly contacting the school or organization. I had provided details of the purpose of my visit and aims of my fellowship. I prepared questions for each interview but these were used mainly as prompts. I took handwritten notes, and the interviews generally unfolded in an unstructured, conversational manner.

Fellowship Period

This travel component of the Fellowship was April – May 2018.

Fellow's Biography

Hayley Dureau is a Leading Teacher (Head of Student Voice) and Mathematics Teacher at Mount Waverley Secondary College in Victoria, Australia. Dureau has been a member of the teaching staff at Mount Waverley Secondary College since 2009. She has been recognised at state and national levels as a passionate and forward-thinking mathematics teacher and educational leader. Passionate about enhancing student learning by improving relationships between staff and students, Hayley introduced the Victorian Student Representative Council (VicSRC) 'Teach the Teacher' program at Mount Waverley Secondary College, giving students the opportunity to provide professional learning for staff, drive elements the school's

strategic plan, and design feedback tools which teachers use regularly, allowing students to provide feedback and discuss their learning with their teachers. Hayley has presented to pre-service Mathematics teachers at the University of Melbourne and Deakin University and, as a National Texas Instruments Teacher Trainer, she has presented at various Mathematics conferences including the Mathematical Associations of Victoria and Western Australia conferences and at the 2015 T3IC conference in Dallas, Fort Worth USA.

In 2015 Dureau won the VicSRC Teacher Advisor Award in recognition of her experience and achievement in the area of Student Voice and Student Leadership. In 2016 she was awarded the Australian Council for Educational Leaders (ACEL) New Voice in Educational Leadership Scholarship, and was named the Victorian Department of Education and Training (DET) Outstanding Secondary Teacher Award, allowing her to travel to the United States of America (USA) to undertake studies at the Harvard Graduate School of Education. While in the USA Dureau was a keynote speaker at an International Student Voice conference at the University of Vermont.

Dureau is a founding member of the Victorian Department of Education and Training's Education State Guiding Coalition, which was established at the end of 2016. The purpose of the coalition is to provide critical advice and feedback on the delivery and implementation of the DET Education State in Schools, to identify trends, good practice and evidence of success, to develop positive communication strategies promoting successful highlights from the Education State in Schools, and to work on constructive problem solving on matters arising throughout the implementation of the Education State in Schools. Dureau joins school principals, students, academics, professional association leaders, departmental staff and other community partners and leaders from across Victoria who meet regularly to discuss how we continue to build a high performing public education system and progress the Education State in Schools agenda.

Dureau was further recognised in 2017 with the International Specialised Skills, George Alexander Fellowship to undertake applied research in the area of Science Technology, Engineering and Mathematics teaching, and Student Voice in Denmark.

Throughout 2018 Dureau continued to share her work in the area of Student Voice in numerous forums, including the Canterbury West Coast Principal's Association in New Zealand, the Australian Select Entry Network School's Conference, and for the University of Melbourne Network of Schools.

In 2018 Dureau was named as the Australian Mathematics and Sciences Institute (AMSI) Secondary Mathematics Teacher of the Year.

Dureau is currently completing a Masters of Instructional Leadership at the University of Melbourne Graduate School of Education, and is completing a research project on the area of student feedback to teachers, and how it can be used to enhance teacher practice.

Abbreviations / Acronyms / Definitions

ATAR – The Australian Tertiary Admission Rank. A number between 0.00 and 99.95 that indicates a Year 12 student's position relative to all other graduates.

DET – An abbreviation for the Victorian Department of Education and Training

Efterskole - a unique Danish independent residential school for students between 14 and 18 years old, typically attended by students following their 9th Grade education at a Folkeskole. There are 250 Efterskoles throughout Denmark and approximately 28,5000 Danish students attend an Efterskole each year.

Folkeskole / Compulsory schooling - Compulsory Danish education for children aged 6 to 16, encompassing pre-school, primary and lower secondary education.

Gap Year – The term Gap Year has become more common in Australia and is generally defined as a year's leave from study between finishing High School and embarking on further education. In Denmark some students take a Gap Year between finishing compulsory schooling and beginning gymnasium. Most Danish students also take a Gap Year (at least one) after completing Gymnasium and commencing tertiary or vocational studies.

Gymnasium - academically-oriented three-year upper secondary school program. Gymnasium education follows Compulsory schooling, with many Danish students attending an Efterskole or taking a 'gap year' before attending gymnasium. The three years of gymnasium must be taken in sequence.

IGCSE – An abbreviation for the International Certificate of Secondary Education

OECD - The Organisation for Economic Co-operation and Development is an intergovernmental economic organisation with 36 member countries, founded in 1961 to stimulate economic progress and world trade.

STEM – An abbreviation for Science, Technology, Engineering and Mathematics.

4. Fellowship Learnings

Fieldwork Findings

FREDERIKSBORG GYMNASIUM

Frederiksborg Castle

Frederiksborg Gymnasium is a secondary school situated in Hillerød. The school sits on a hill overlooking Teglgårdssøen, a lake in the old royal forest district approximately 40 km north of Copenhagen. Founded at Frederiksborg Castle in 1630 by the renaissance king Christian IV, Frederiksborg Gymnasium is now one of the largest schools in Denmark, with more than 1300 students aged between 16 and 20 years, and over 130 teachers.

At Gymnasium schools in Denmark, students complete their final years of secondary school over three years, after which they are qualified for admission to university or vocational training. The teachers at Frederiksborg Gymnasium all have a master's degree from a Danish or foreign university and are qualified to teach at least two subjects each. The school year commences in the first week of August and closes by the end of June with both written and oral exams. Lessons are 95 minutes, and students take approximately 17 lessons a week for 35 weeks.

Frederiksborg Gymnasium is a democratically run institution, which places great emphasis on student and teacher participation. Teachers and students alike have committees in which matters of importance to the school are discussed and agreed upon. The committees advise and put forward proposals to the headmaster and the board in their management of the school.

Students choose from a wide range of subjects and have access to a wide range of after-school activities such as volleyball, bands and choirs, painting and drawing, photography, debating clubs, cultural events, café evenings, and school parties.

Frederiksborg Gymnasium encourages international and cultural awareness through student exchanges, field trips, and visits by guest teachers and students.

All students at Frederiksborg Gymnasium travel abroad, mostly in Europe, at least once in the course of their education.

Gert Schomacker & Frederiksborg Castle

In the early morning frost on the morning of April 26, Dureau watched as hundreds of students crossed the bridge from Frederiksborg station to the school. Rugged up in their warm jackets on the cool spring morning, the students appear happy and spritely, as they chat to their peers. Dureau was met by Mathematics teacher Gert Schomacker, and they followed the mass of students across the bridge towards the school building. Upon entering the school building Dureau was struck by how warm and cosy it was. She was led by Schomacker to a cloak room where staff hung their coats and scarves, and then to the staff room. To Dureau's delight, low hanging lights over long wooden benches gave the impression of a cosy cafe. Small groups of teachers sat with cups of coffee, reading over class notes or chatting before the morning assembly.

In the main building, students and staff wandered through corridors full of student artwork, and collected songbooks as they calmly entered a large tiered theatre space for the morning assembly. The third-year students have the privilege of sitting in the stalls. As Dureau looked in wonder at this beautiful building, the students, appearing happy and relaxed, some eating their morning snack, began to sing together with staff, a song in Danish to the tune of Mozart.

The staff room at Frederiksborg

The staff cloak room at Frederiksborg

School Assembly at Frederiksborg

The student-led assembly included the viewing of a student made video about a sausage eating competition, and a student dance performance. Dureau asked if students were disciplined for being late to or absent from the assembly (it did not appear that attendance was being recorded). Schomacker almost laughed as he explained that attending the assembly was entirely optional. Dureau looked around at the crowded auditorium and it occurred to her that these students, hundreds of them, wanted to be there, laughing and singing with their friends. At Frederiksborg assemblies like these are scheduled twice each week. The weekly timetable is made up of 95 minute modules, and is flexible depending on other programs running at the school at the time. This means that students start and finish at different times each day depending on their schedule, and depending on the week, a teacher may see their class twice a week, or three times, or sometimes not at all.

Fruit and coffee is served to teaching staff over morning tea back in the cosy, and typically Danish staff room before a highlight of Dureau's visit to Frederiksborg - a meeting with student leaders of the school's Student Representative Council. Students Asger and Signe, along with several of their peers explain to Dureau that their student council consists of 90 students (roughly two from each class) who are nominated by their peers to be the class council representatives.

Students from the Student Council Frederiksborg

The student council meet each month. During the timetabled meeting the representatives are given ten minutes to return to their respective classes to communicate relevant information from the council meeting with their class, and to seek their classmate's input and feedback. The teacher in the room can be asked to leave; however, Asger and Signe explain to Dureau that they have never had to ask a teacher to leave, as the teachers have always just left the room on their own accord out of respect for the student council representatives and the other students. After the ten minute class meeting the student representatives return to the council meeting.

The council has sub-committees which focus on various areas of the school, such as the facilities sub-committee who have recently addressed issues such as lighting (how very Danish!), new classroom tables and chairs, and the toilets. In recent years another sub-committee had advocated to introduce a limit on the amount of homework and number of assignments that could be given at any given time, and this had resulted in a limit being set by the school administration. The students had at other times advocated for teachers, because they felt that "it is in the students' best interest to fight for the teachers' wellbeing". What became apparent during Dureau's conversation with Asger, Signe and their peers was that they felt a genuine sense of respect and a mutual understanding between the students and their teachers.

The students explained to Dureau that the school uses a Teacher feedback survey, and that all teachers must use the survey with each class every year. Asger explained that some teachers do it more than once, and that some teachers frequently use the survey , as they take pride in their results.

Every three months the school council leaders attend a staff meeting, at which they are allocated time to give a report to staff, and then they are invited to stay and observe the rest of the meeting. According to Asger, "Mutual understanding equals mutual benefit. There are no barriers between teachers and students, there's no point having barriers".

Signe and Asger recently travelled to Norway to investigate how Norwegian students run their student councils, and are now considering reducing the number of representatives from each class to one, in order to increase accountability and productivity. The students were interested to hear how school is different in Australia. They asked Dureau if teachers are present in the student council meetings in Australia, after finding it strange that teachers attended student council meetings in Norway. The idea of having adults present in student council meetings seemed foreign to Asger and Signe who explained that one of the things that they most enjoy about being involved in the student council is the opportunity for genuine student leadership and responsibility. They share with Dureau the example of a school party that they recently hosted from 4pm to 10pm at the school. There are no teachers supervising the event, and Asger and Signe had been responsible for collecting and returning the keys to the building and for the planning and organisation of the event. Signe explains that at the start of each new school year the school council leaders are in charge of organising a training camp for all council members. This includes planning the agenda for the camp and organising the travel, itinerary and the camp's budget.

According to Asger and Signe, key to the success of the student council at Frederiksborg Gymnasium is "trust and respect... both ways". They explain that their principal Peter Kaulman (who they affectionately refer to as "Cool Man") is a visible presence at the school, always has his door open, and is willing to meet with students to discuss any concerns. As a result, there are rarely any disciplinary issues at the school.

When asked how they manage to balance their role on the student council with their school work Asger and Signe explain that their teachers are very understanding and aware of the commitments and responsibility that comes with their role. They tell Dureau that if the student is having difficulty completing their work on time, they can simply discuss the situation with their teacher. It is common for teachers to give extensions for work that was overdue. When the students hear that in Australia students can in some cases lose marks when work is submitted late,

they are astounded, Asger claiming “I would be stressed out of my mind if that was the case in Denmark!”

At Frederiksborg Gymnasium if a student is going to be absent from school then the student (not their parent) is required to notify the school. As in most schools in Demark, students address their teachers using their first names, and the students at Frederiksborg are amused that Australian students refer to teachers using their surname “like in British or American movies!”. According to Asger and Signe Danish student-teacher relationships are about mutual respect. They don’t like boring teachers and agree that most of their teachers are very passionate about their subject, down to earth, humorous and extremely knowledgeable. They share the recent example of a teacher who had taught the same class for three years. In the lead up to the students’ final exams this teacher gave each student in the class a book. The teacher had selected a book individually for all 28 students in the class. One of these students had been Asger, who was astonished at how well the teacher knew each student in the class, and how this was reflected in his choice of book for each student.

Class 3M

The students explained that not only is tertiary education free in Denmark, but students are actually paid by the government while they study. The government payment is usually enough to cover rent, should they choose to live out of home. These students are looking forward to taking a Gap Year and travelling before commencing tertiary studies. Signe explains “My parents want me to do the best that I can do…. but the most important thing to them is that I’m happy, and NOT stressed. Any pressure we feel, is the pressure that we place on ourselves.”

Schomacker later explains that the school’s funding depends on the students passing, so there is an extra incentive for the school to make sure that the students pass. There are school counsellors available to students whenever they need support, and a students’ time with the counsellor does not count as an absence from class.

Dureau is told that students at Frederiksborg are allowed to use computers, and access the internet in their exams. Schomacker explains that students can access any webpage they have previously accessed, but cannot do a Google search.

Teachers at the school need to be at school for their class but can work from home otherwise. There are no allocated staff desks, just shared working spaces throughout the building. Classrooms are left unlocked and students have the freedom to enter all classrooms without the teachers’ permission. Students are also allowed to eat in class.

In an English class with a teacher named Lotte, two students, both in their final year of gymnasium, presented to the class ‘Britain in the World’. They spoke in English (except for when they occasionally asked one another in Danish what the correct word for something was) about British colonisation and British rule. Dureau is informed that this is the ‘Music Class’. Students come to Frederiksborg after completing their final year of compulsory schooling (Year 9) and study at Frederiksborg for three years. Many students have spent the year before their arrival at Frederiksborg as an optional gap year, at an Efterskole, or on an international exchange. Some students have completed an optional Year 10 in order to achieve

the grades required for entrance to a gymnasium school. In their first year at Frederiksborg the students are split into classes based on their academic stream, for example, Maths, Science, or Music. Students remain in these classes for the full three years, with the exception of a handful of students who choose to change streams. This means that the students in each stream are in all of the same core classes, and take just one or two elective classes in which they are mixed with students from other classes.

When the students graduate after their three years at Frederiksborg they have a full day celebration during which they travel to the home of every student in the class. At each house a mini party is held for the graduating class and the family provides food and drink for the group. Each class takes a trip around town on a large decorated open-backed truck known as a studenterkørsel, blaring horns and music as strangers on the street cheer and shout congratulations to the students (Barrett, 2016). The students explain that it is very common in Denmark for students to take a gap year (or two) after completing their final year of gymnasium schooling to discover who they are, and what they want to do. There is little pressure on them while they are at school to decide what they want to study in the future. When students are asked by Dureau "what do you want to do in the future" most students casually explain that they hadn't really decided yet and weren't worrying about it until after their gap year, during which they planned to work and travel.

In Schomacker's Level B Mathematics class two students present, one at a time, to the class. They explain (for the most part, in English) solutions to questions that were on a recent assignment – the first student presents the solution to a problem on exponential growth, and the second, the constant factor theorem in differentiation. After a short period of teacher instruction, the students break into groups and some leave the room to find spaces in available rooms down the corridor. They work in small groups to practise for their upcoming oral Maths exam. Schomacker explains that the students have not yet been told whether they are completing a written or oral exam, or both. For the oral maths exam, students are given one question that they need to explain to the examiners, and they have half an hour to do it. Three weeks prior to the oral exam the students are given access to all 15 possible oral exam questions. They are told, one hour before the exam, which of the 15 question they will have to answer, and they then have access to all of their notes for one hour to prepare for actual exam. Their Mathematics teacher is one of the examiners, and during their presentation the students can use technology, such as a slideshow or calculator, to assist in their solution and explanation of the problem.

Students teaching students at Frederiksborg

Two of Schomacker's students who Dureau recognises from the Music class explain that Maths is considered an elective for students in the Music stream students. These students took Level C Mathematics in their first year of gymnasium and then went an entire year studying no mathematics at all. Students in this class have approximately four hours of assignments to complete each week. When asked how much homework they have to complete the students seem confused. They do not get homework, and they do not see the assignments as homework. They explain that rather than sitting at home completing questions from their book for hours on end, they work with their peers, in and out of class time, to help each other understand the work. Students also have access to weekly after school Maths help sessions which they can attend if they need extra support with their work.

At the end of the Maths class a student stays back to tell Dureau about his success in a recent Business competition. His business idea had been to import guitars from China and sell them in Denmark at an affordable price to schools. With the support of his teachers at Frederiksborg, including his Maths teacher Schomacker, the student had entered the competition and made it to the finals. He says “it all starts with a dumb google search… like ‘how to import something from china. Seriously! That led me to a page ‘made in China’ and from there I found a middle-man who helped me to arrange for the production of a guitar… it went from there”.

Students at Frederiksborg have access to class notes and resources on an internal system, and can also access notes and resources from previous years. Students are expected to have a computer with them in class at all times, and have access to financial assistance if their family cannot provide a computer.

A teacher’s face-to-face teaching allotment is dependent on the subject(s) that they teach, as well as the amount of marking that they are required to do.

At the end of her time at Frederiksborg, Dureau meets with an English and Latin teacher in her third year of teaching. When asked ‘what are the challenges you have encountered as a teacher so far?’ she responds “Transport is an issue. I travel here from Copenhagen each day”, and pauses for a minute before adding “Oh, and sometimes the photocopier doesn’t work”.

The library at Frederiksbog

On the train from Copenhagen to Malmø Dureau overhears a conversation (in English) between two strangers who just had met on the train. One was explaining to the other that he had recently done a tree climbing instructor course.

Stenkulaskolan - Malmø

After a one-hour journey from Copenhagen, Dureau arrives at Stenkulaskolan, a Foundation – Year 9 school with approximately 560 students in Eastern Sorgenfri, Malmø, Sweeden. Dureau meets Stenkulaskolan Principal Tomas Strand and Principals' Coach for the City of Malmø Claes Jeppsson. Strand and Jeppsson invite Dureau into their conference room where a large diagram of the Coherence model, based on the work of Canadian Educational Researcher Michael Fullan, is stencilled on the wall. They pour coffee into Stenkulaskolan branded mugs.

Stenkulaskolan Wall stencil

Dureau comments on the mugs, which also have quotes about education on them, and is told by Strand that they are in the process of installing an 11 metre by 5 metre mural in the school grounds. The mural will display the faces of eight influential Swedes (famous scientists, historians, etc.), selected by a student vote after the initial list was narrowed down from 100 people. Initially the eight people chosen comprised of six men and two women, until the students decided that the mural should be gender balanced – and so now the mural will comprise of four famous men and four famous women.

There are 530 students aged between 6 and 16 years old, as well as 60 teachers and 43 administration staff at Stenkulaskolan. Administration staff run before and after school programs such as chess, dancing and baking, which are available to students from the time the academic school day finishes at 2pm until 6:15pm. Students whose parents or carers work full-time (some as far away as Copenhagen) can be dropped off at the school from 6am. Of the 530 students at the school, 98% speak Swedish as a second language. Approximately 50 students had arrived in the country in the last 18 months, and another 150 students had arrived in the last four years. The school runs specialised programs for both Autistic and Hearing impaired students. Most of the students in these programs are integrated into regular classes for at least some, or all of each school day. Inclusion is at the centre of Strand's core values, he explains.

Stenkulaskolan wall stencil welcome

Approximately half of Stenkulaskolan's staff are Swedish, and Strand explains that there are quite a few Arabic staff. Face-to-face teaching time is between 1050 and 1220 minutes per week. The school is an Apple distinguished school and has a focus on robotics, programming and STEM. Staff and students (even those in the younger years) make use of many Apple Apps. Designated No Direction classrooms are surrounded by whiteboards and have no 'front' of the room where the teacher might stand in a more traditional classroom. Between 75% and 80% of Stenkulaskolan students continue their education at a Gymnasium school.

Jeppsson was a school principal in Malmø for 15 years, and tells Dureau that in those 15 years he never met a student with two Swedish parents. Jeppsson explains that Malmø's very multicultural demographic is attributed to the many refugees who come to Malmø from Syria and Afghanistan. Many of the Syrian refugees arrive in Malmø having experienced a formal school system; however, many of the refugees from Afghanistan have never attended school before. Refugees from both countries have often suffered horrendous trauma, such as witnessing their parents' murder.

Jeppsson has been supporting Strand to implement the Coherence Model, based on the work of world renown Educational researcher Michael Fullan.

Strand explains that the framework begins with having a higher common purpose among leaders and teachers. The higher common purpose is that they are there to make the world a better place. Next is considering the goals for each student. Failures are seen as learning opportunities for both staff and students, who learn together, and from each other. Staff and students strive to improve input and impact.

As the Principal of Stenkulaskolan Strand has focused on closing the 'organisational gap', which he explains can arise between any group where there is a hierarchy. "How do I speak to my teachers? What is my body language? What leadership actions will I take? We are never a victim of our culture, we can always impact it with our leadership actions" he says.

Tomas Strand Stenkulaskolan Principal

Strand and Jeppsson, together with a group of Lead teachers at the school are leading this work at Stenkulaskolan through their involvement in a network of three schools, known as SAK. The Lead teachers meet for three hours every Tuesday afternoon, and all teachers across the three schools are involved in professional learning every Wednesday afternoon. Leaders and teachers from the three schools work together to consider, for example, why is grade 3 writing higher at one school than the other when all three schools have a similar demographic of students. Is it the teacher? If so, what can this teacher teach the others? How can that teacher work with the teachers from the other schools? For sixteen weeks of the academic year teachers spend the Wednesday afternoon professional learning time taking part in sessions led by the Lead Teachers from the three schools. The teachers themselves identify what it is they need to focus on in their teaching practice in order for their students to be more successful, and choose from a range of programs on offer. Each four-week program is based on OECD research, and gives teachers and leaders an opportunity to analyse qualitative and quantitative data, including pre-test data and interviews with students and staff. Strand explains that the model is 'data informed' rather than 'data driven'. "Data driven suggests we do what the data tells us to do. Data informed means you use your professional judgement" says Strand.

As part of the SAK network of schools teachers are involved in peer observations. Teachers are graded by Lead Teachers against criteria on a 1-4 scale, and a second observation measures if growth has occurred in the identified area. Network meetings with staff from all three schools are built into the Stenkulaskolan meetings schedule.

Strand talks about Leading Actions, and credits leadership actions for enabling him to improve the culture at Stenkulaskolan. He strives to talk the talk and walk the walk. He encourages his teachers to use the Why, How, What cycle of enquiry by modeling it himself, focusing on what it is that he needs to do so that his teachers can do their very best. "The teachers are the key. Our teachers are driven by making a difference. Everything is part of the broader vision" says Strand.

Crucial to Strand's vision for high quality teaching, learning, leading and improved student outcomes is courage. He believes that having the courage to show the staff that you are learning, involving them in the learning, sharing the learning, and learning together, means that his staff are more open to learning and improving student outcomes. Strand and Jeppsson have seen improvements in the organisational culture at Stenkulaskolan. When asked if there are any staff at Stenkulaskolan who are not on board with the Coherence Framework, Strand replies "Yes! But you need to decide… who do you focus on? The teachers get on board when they see how the coherence model can change the lives of their students. The model strengthens purpose and direction… our teachers choose to be here" says Strand.

When asked about his greatest challenge as a Principal leading this change, Strand mentions balancing the operational and strategic demand of the job, and adds that his greatest challenge is "Connecting the person to the profession. It's not just about subject knowledge. There are lots of different elements, including relationships and how you speak to students". He believes that teachers are challenged by deepened learning, and that teachers are motivated to make changes when they see that their teaching makes a difference to the lives of the kids they teach.

In Sweden students complete national testing in Grades 7 and 9; however, students are not given any formal grades before Grade 6, and teachers have a lot of freedom to adjust the curriculum. Dureau visited a Grade 2 class and observed a Maths lesson. At the beginning of the class the students from two classes combine into one large group before breaking into four smaller groups, with each group working on a task related to telling time. Three of the groups are facilitated by an adult (a teacher or pre-service teacher), while students in the fourth group play a time game on an iPad App. One group uses model analogue clocks to display the time as requested by the teacher, another completes a worksheet related to an activity in which they predicting how long it would take to complete tasks and then testing their hypothesis, and the fourth group work in

pairs to practise reading sentences (off laminated cards) about time (for example, the number of days in a month).

Stenkulaskolan Maths Student

Stenkulaskolan Maths class

Grade 2 student Georgina speaks to Dureau in fluent English. When asked how she learned to speak English, Georgina tells Dureau that she listened to a lot of music, such as that by American music artist Katy Perry. A boy approaches Dureau with an iPad, and wants help with an English game he is playing on an App. The teacher later explained to Dureau that this (approaching Dureau and speaking to her) was a huge step for the boy, who has Autism. The teacher explains to Dureau, “I focus on teaching and learning. If the children know what to do and how to do it, and have the right support, the rest falls into place”. She adds “I speak to the parents a lot. I contact them regularly about their successes. For example, I might call and say “he learned how to say (sentence) today!” I don’t just contact them about the things that don’t work”.

Bellevue gymnasium - Malmø

Bellevue gymnasium in Malmø was opened in 2006 and is a specialised high school for students who are at risk. Dureau arrives at the school, which is situated in an old office block. Inside the clean, neat, and cosy building, Dureau met with Vice Principal Johan Hellström, who explains that the students who attend Bellevue gymnasium have often suffered trauma in their lives. In some cases this has led to behavioural issues, and in other the students have been incarcerated. These circumstances have often prevented the student from obtaining the level of education they require to enroll in further study at a gymnasium school, or to commence vocational training or employment.

Johan Hellström Bellevue

Hellström explains that a team of 30 highly trained staff (15 teachers and 15 coaches) support the school's 140 students to reach their full potential by creating an environment in which the students feel safe, valued, and able to achieve. Bellevue staff visit the previous school of any newly enrolled students and learn about the students before they arrive, and spend the summer getting to know the students. "We know exactly what they've been through" says Hellström.

A Google account is created for each student when they arrive at Bellevue. The student owns the account, and owns all of the resources in their Google Drive, which means that they will have access to all of their resources even after they have left the school. In their Google Drive, and with assistance from their mentor teacher, each student creates an individual learning plan, which sets individual learning goals and which they review every two weeks with their mentor. Also in the Google Drive folder is a Google Sheet which each student and their teacher can access. At the end of every lesson teachers access the Google Sheet and give each student a green, red or amber grade on a google sheet, as well as a comment, providing instant feedback to the student. "At any time throughout the week a teacher can ask a student to 'show me your program' and will see a sea of green, or amber of red. We need these small wins", Hellström explains.

Classes at Bellevue are small, with approximately 10 students per class and 8-12 students per mentor group. Mentor classes are timetable every Friday afternoon. Teachers at Bellevue teach approximately 16 hours a week. Students and teachers eat breakfast and lunch together in a shared cafeteria, and classrooms and offices are integrated throughout the building. While Hellström and Dureau talk, his office door is open and students wander in and out to say hello to Hellström and his guest. The immense mutual respect between Hellström and the students at Bellevue is evident from the moment you enter the building.

Bellevue cafeteria

According to Hellström, the key to helping these students is the relationships you build with them. He builds trust with the students through his relaxed and friendly manner, and tries to use humour where possible. “We don’t get angry”, he says, and adds “The relationship between the teachers and the students’ needs to be genuine. You have to see every individual every day”.

In the last five years Bellevue has been rated by students as 1st or 2nd school in the region in terms of happiness. “They like it here. They can stay here as long as they want. The students return after they’ve left and tell us how much we meant to them”, says Hellström. Recently a new student walked into Hellström’s office and said to him “You guys are so weird! You walk around here, there’s no trouble, and it feels like your teachers like you!”

Hellström’s mobile phone vibrates when he receives a text message. It is a selfie of two students who wanted to leave school to attend an Arabic celebration. “I said they could go, as long as they sent a selfie so I knew that they were there. I did the same thing the other day when a student asked to leave to attend a dentist appointment”. He quickly types something back… in Arabic. Stunned, Dureau asks “You can write in Arabic!?”, to which Hellström responds “Yeh, a few years ago I thought it might be useful to learn… so I took classes”.

Earlier that day Hellström had met with a student who had been suspended for two days after presenting at school under the influence of drugs. He explains to Dureau that there were six adults in the meeting, and that they told the student “We care about you, we are here for you, no matter what you do, and we are here to help you”. A plan that was put in place so that if that student feels angry or like he is “about to rage”, he is to send Hellström a text message. “I told him, no matter what time it is, you text me, and I will make sure someone is there within a few minutes to sit and have a coffee with you”.

Every four weeks the students at Bellevue complete a teacher evaluation survey. The data is analysed at the individual teacher level, class level, and whole school level. Hellström presents the data to the staff every two weeks as a snapshot. “I can say, here’s what the vibe is here at the moment, this is what we need to focus our attention on…” says Hellström.

When asked about his greatest challenge, Hellström does not hesitate to answer, “Funding. We spend half of our money on staff who don’t teach. The other challenge is that students start to really like this place, and it is difficult to get them to move on to the next stage. Sometimes they will leave to go to Gymnasium and then call us and say “Can you come and teach these guys how to teach!?” We’ve spent so much time working with them to change their perception of school, and themselves, then we build on their academic skills and they’re ready to leave. Don’t think the work here is easier, we meet the Swedish standards”, he says.

Hellström and his team are currently working on establishing stronger community partnerships, for example, with local sporting clubs. “We had a great relationship with a soccer club. I called them and said “Come and pick up my boys”. Last year we had a girls’ team coached by a woman who was in the national Icelandic team. We like to think outside the box”.

Hellström asks Dureau, “Did you see the big guy who was here before for the student meeting? He was a student here back in 2009.” Akmed had been one of Bellevue’s most challenging students. After leaving Bellevue Akmed had been in trouble with the law and after completing a four year youth program he had contacted Hellström asking for work at Bellevue. He was six weeks from finishing his course and desperately needed work. Despite knowing that there was no money in his budget, Hellström told Akmed “Call me back in 6 weeks”. When Akmed arrived at the school six weeks later, Hellström had a six month contract drawn up. He had somehow found the money in the budget. Some of the Bellevue staff questioned Hellström’s decision, but he had said to them “Trust me, wait until you see him now. Whatever he was when he was 16 is not what he is at 23 years old. We all grow up”. Akmed has become one of Bellevue’s most valuable staff members. “Not a single staff member has said anything negative about him since he arrived. He understands these students like no one else can”, he adds. Hellström hasn’t told him yet, but he has secured funding for a two year position for Akmed, smiling while he adds, “I just can’t wait to tell him”.

Danish School of Education - Aarhus University

Of the 40,000 students who study at Aarhus University, approximately 6,000 of them attend the Danish School of Education (DPU) at the Copenhagen campus in the suburb of Emdrup, where education and pedagogy is taught and researched. The staff include 155 scholars and 90 PhD students, making it one of the largest education research environments in Europe. DPU offers postgraduate courses in preschool, compulsory and gymnasium education.

Dureau visited DPU and met with Tomas Højgaard, Associate Professor, Ph.D. On the frosty April morning the university campus was almost entirely void of students. Højgaard explains that the normal class schedule had ceased for the academic year as students prepare for their upcoming exams. As they walk to Højgaard’s office, Dureau talks about her visits to schools, to which Højgaard instantly responds with a smile, “I imagine the Danish students asked lots of questions, like why certain things happen the way they do? They love to ask questions and question things… that’s what they do.” He had summed up perfectly what Dureau had noticed most about Danish students – that they were incredibly curious and not afraid to ask questions.

Tomas Højgaard

Højgaard had travelled to Australia several times, and was interested in the differences that Dureau had observed between Australian and Danish students. When he last visited in 2016, Højgaard spent six months working at The University of Melbourne, and his children, then 11 and 16 years old, attended school in Melbourne for two terms, which had given Højgaard incredible insight into the differences between the Danish and Australian systems. His son, who had finished grade 5 and begun grade 6 in Australia, had a mostly positive experience. One of the first differences they had encountered was that unlike in the Danish system where students remain in the same class for the first ten years of their schooling, students in the three Australian grade 5 classes had been split into three new groups for grade 6.

Højgaard's daughter found her experience of high school in Australia to be quite confronting. The Australian teachers, according to her, did not care about the students as much as they cared about their grades, the subject, and discipline. She moved from class to class, without a core group of peers or a class to follow, and found it difficult to make friends. Adopted from Columbia, and of African descent, she had ended up becoming friends with the African students at lunchtime, and had told her father that never before had she experienced being divided in a school yard by race.

Dureau shared with Højgaard that the most obvious difference she had noticed so far was the nature of the relationship between teachers and students. Højgaard agreed, and described the relationship between Danish students and their teachers as "respectful, but not hierarchical", in an environment in which he believes "creativity is fertilised". He explains that Danish teachers don't need to be strict, because they gain respect with their presence. When quizzed more on this and asked how Danish teachers do this and whether it is something they are taught, he explains that a Classroom Management subject was introduced to the curriculum at the university about five years ago, in which prospective teachers are explicitly taught skills such as how to guide group work, or how to teach students to take turns presenting to their peers. Højgaard explains that in Danish classrooms a lot of the time is dedicated to group work. "It's not productive to have 23 students quiet while one is talking". It occurred to Dureau that it is even less productive to have 24 students quiet while one teacher is talking. He goes on to explain, "In this way, it is the students who give feedback to one another. The teacher can listen."

In Denmark, it is most common for students to remain in the same class, with the same group of students, from Kindergarten until Grade 9. The teachers of grades 1-9 (compulsory schooling) have completed a Bachelor Degree in special teacher training. A recent change means that anyone wanting to study to be a compulsory school teacher needs to have completed at least B Level Mathematics at gymnasium. Compulsory school teachers train to specialise in four subjects, including at least one of either Danish or Maths. Typically, each class has 3-4 teachers who between them teach the class for all of their subjects. Two of those teachers would be the "primary" teachers, and it is these primary teachers who communicate with the parents when required, and conduct parent-teacher interviews. The primary teachers are able to discuss the child's learning across multiple subject areas.

Teachers who teach at Gymnasium (post grade 9 education) have usually completed a 5 year Master's Degree in their specialised field, for example in Mathematics, and are usually qualified to teach at least two subjects. After this training they are able to be employed as a teacher, and they complete their teacher training as part of an internship while employed by a school. During their internship, which is considered to be "co-training" program, they are mentored by a teacher at the school. They are paid a full teaching salary, but teach approximately half of a regular teaching allotment. The remaining time is used to observe expert teachers, participate in mentoring sessions, and complete pedagogical studies. After completing this training, they are considered to be a fully qualified gymnasium teacher. Most teachers begin their training at 19 years old, often after taking a gap year after completing gymnasium themselves, and so teachers are generally around 24 or 25 years old when they start teaching (slightly younger than other

Danish professions where work usually begins at 26 or 27 years of age). According to Højgaard there is no shortage of Maths teachers in Denmark.

Compulsory School training and Gymnasium teacher training is quite separate, and any teacher who wants to change from teaching at one type of school to the other must return to complete the necessary study, keeping in mind that anyone wanting to be a Gymnasium teacher must have a Masters degree. There is some debate in Denmark currently about possibly combining the Bachelor teacher training with the university degree, however according to Højgaard both teacher training institutions are resistant to the idea.

Danish School of Education

A compulsory school teacher who is training in teaching mathematics (as one of the four subjects they are qualified to teach) will choose to specialise in K-5 mathematics, Grade 4-9 mathematics, or both (this would count as two of their four subjects), and these teachers become Maths specialist teachers. At compulsory school (Grades K-9) it is common for staff to work in teams (Grade 1-3, 4-6 and then 7-9), like sub-schools, in which they work closely with colleagues to plan teaching and learning. Often a teacher within a teaching team will follow the class up through the year levels, teaching them for three years, establishing a three-year cycle. This means that teachers know their students very well, and are also very experienced in teaching the content at that level. Another benefit of this model is that the students, who remain in the same class for their compulsory schooling, get to know the other students in their class, and their families, very well. Højgaard explains that in Denmark it is very common for the parents to make a huge effort to get to know each other in the early years of compulsory schooling. The idea is that if the students and their families know each other well, it enhances the learning of the whole class. The parents go to great lengths to arrange social events and spend time together with the children. “The parents must invest time in getting to know one another” he says. Most (80-90%) of the parents are actively involved, with 10-20% of parents choosing to be less involved. Recreational activities such as hiking, going to Tivoli Gardens, swimming or meeting at someone’s home are organised with the whole class and their families. The parents who are actively involved make an effort to include the children of those who less involved. “People have realised that this is an important way of supporting the students” says Højgaard. His daughter has been with the same class for the last ten years, something Højgaard considers to be a major advantage of the Danish system. He explains that having formed a relationship with the other parents has allowed them to deal with issues that have arisen throughout their child’s compulsory schooling. When the children are older, the parents don’t see each other as often (because they don’t go everywhere with their children) but if there is an issue, for example some bullying or teenage drinking, we know that we can contact the other parents and resolve it.

When Dureau said to Højgaard that she had noticed the relationship between parents and their children also appeared to be less formal, and less hierarchical, than it is in the Australian culture, Højgaard agrees. “That’s very much the ideal Danish way. We speak to them like they’re adults. If they do the wrong thing, we tell them, without raising our voice or hitting them. The relationship is based on “hey we understand each other, and I respect you and you respect me””.

Approximately 15 years ago after Programme for International Student Assessment (PISA) tests indicated that Denmark was falling behind in Grade 1 reading, a focus on reading became a national initiative. The government committed money to enhance resources and trained teachers as reading specialists, who supported teachers, tested students and worked one-on-one or in small groups with students who needed additional support. “It worked amazingly well. Now all students can read when they get to grade 2, and Denmark is now looking to take a similar approach to improvement Maths” he says. Højgaard’s work at the moment involves working with teachers who want to take an extra course and become a mathematics specialist teacher, known as a Maths Guidance Counsellors.

Danish teachers are relatively well paid and can live comfortably on a teachers’ wage, but Højgaard admits that in Denmark you can pretty much live comfortably if you have any job. A teacher’s face-to-face teaching time is typically around 1200 minutes per week (26 x 45 minute periods). In 2013 a government reform saw changes introduced, which left many teachers feeling as though they had lost a lot of their autonomy. Prior to the reform, as long as they prepared for and taught their classes, teachers were mostly left to their own devices, and could come and go from the school as they pleased. Since the reforms teachers are required to be at school for the entire school day, which is from 8am until 5pm. School principals have the discretion to allow staff to go home earlier if there are no meetings. Teachers work a 42 hour week (a standard Danish working week is 37 hours) to account for the school holidays.

Oral exams, which had been used from 1997 – 2007 before being abolished, we also reintroduced as part of the 2013 reform by the Ministry of Education. An oral exam at Year 9 in compulsory school might involve two or three students working together in a group. They are given a mathematical problem, and two hours in which to solve it. The task is often an open-ended task involving mathematical reasoning or modelling. For example, it might be about where light posts should be positioned in the school, or involve designing a box in which to fit tennis balls. Højgaard explains, “I’ll give you the example of the tennis balls in the box. A teacher who isn’t doing it properly might hint to the students that they need to use the formula for the volume of sphere. A teacher who is doing it properly will let the students work out that they can’t measure the length of a tennis ball, but they can measure the circumference and divide by pi. Less able students might just guess the length of the box, and that’s fine, if they can reason it. They’ll just get a lower grade”. Students can access any resources they like, including the internet. The task is graded by the teacher and an external examiner, and is based on how the students reason, not what they write. The teacher and examiner visit the group every half hour (four times in total) and base their grade on the discussion with the students. They usually give a group mark but they can give individual grades. Students have some choice in which other students they work with, however the teacher has the final say.

Højgaard says that most teachers are very fond of the oral exams as it allows them to teach modelling and reasoning, and to teach in a more open way, rather than ‘teaching to the test’. Teachers can create their own tasks, or access standard tasks online. The tasks do not have marking rubric, as the teachers are not assessing arithmetic, but rather the students’ modelling and reasoning skills. Of course this requires the teacher to have an excellent understanding of modelling and reasoning themselves. The oral exams are very expensive to run and so there is a national lottery to determine which classes will sit an oral exam. Teachers and students are notified in May, just a few weeks before the exam. Every second class in Denmark does an oral exam, which can cover anything that they have learned in Grades 7, 8 or 9. Students who do not do an oral exam will complete a four hour assignment.

Højgaard beams with pride as he shares his work in teacher training.

"In Denmark, being a teacher is a well-respected job, like being a priest or a doctor. Historically Denmark has become very wealthy by educating its population and investing in education"

he says.

Danske Skoleever – The Danish Students' Association

The Danske Skoleever national board comprises 26 students from 17 regions across Denmark. Most of the students on the board are in Grade 7, 8 or 9. Dureau met with board members Mathias, Jakob and Chili at the Danske Skoleever headquarters, located in Risskov, an industrial suburb of Aarhus.

Jakob is the president of the organisation, and has been involved in Danske Skoleever for two and a half years. He is one 16 fulltime volunteers aged between 15 and 17 years old who live onsite at Danske Skoleever. These students have completed grade 9 at compulsory schooling, and are taking a year off school before commencing Gymnasium or other further training. The organisation finances one trip home per month. The team of 36 workers at the Danske Skoleever offices is made up of the 16 volunteers and 20 paid employees. The organisation represents the 700,000 students aged between 6 and 16 years old in Denmark. Four times a year Danske Skoleever hold National General Assembly events which attract 300-400 students. Students from all Danish school are invited; however, they can only vote if they attend a member school. Dureau starts to realise that this is serious business as Jakob explains that each of the 17 regions in Denmark have their own local board. These regional boards are made up of 11 students (two leaders and 9 others) and each represents between 20,000 and 70,000 students in their region. The National Danske Skoleever board consists of the 34 regional leaders (two from each region), the two Vice Presidents and the President – 37 young people in total.

The board meet every 6-7 weeks for a whole weekend when the 26 board members travel to Risskov and stay at Danske Skoleever headquarters for the weekend.

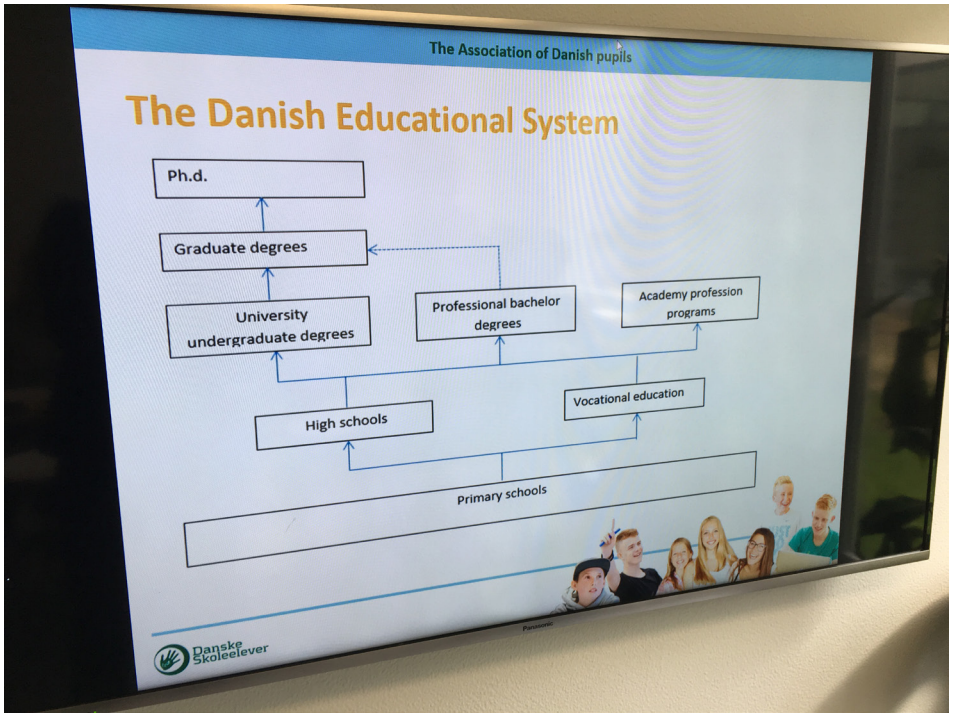
Danske Skoleever

Dureau is told by Jakob that Danske Skoleever is part funded by schools who pay for a school membership (currently 940 of the 2000 Primary schools are members, which accounts for around 60% of the students in Denmark), and part by philanthropic organisations, the Ministry of Education, and by the profits that the government receive from gambling. Danske Skoleever provides services for schools across the country, including courses for teachers and students in how to set-up and facilitate student councils, or how to increase and student engagement. In Denmark it is mandated that all schools must have a student

council, and is common for two students to sit on the school board. Danske Skoleever also run a student telephone support line. Students from all over the country can call and access support from trained volunteers who man the phones. Volunteering to work on the support line requires additional specific training, and Chili admits to Dureau that not all of the volunteers decide to do it. “Some find that they’re not able to deal with it emotionally, for example if they were bullied as a student. There is a policy in place for what happens in an emergency, for example, if a student says that they want to commit suicide. Luckily that hasn’t happened this year”, she says.

Danske Skoleever National Board

Dureau is surprised by how incredibly insightful and mature Mathias, Jakob and Chili seem as they discuss everything from their experience being educated in Denmark, taxes (“While some Danes might advocate for lower taxes, it is never debated that education shouldn’t be free”, says Jakob), bullying, stress and anxiety, the 2013 teacher reforms, PISA results and the Danish culture (“Equality, democracy, and freedom of speech is rooted in the Danish culture”, says Chili).



Danish system Danske Skoleever

Mathias, Jakob and Chili explain to Dureau that as students they weren’t given any formal grades before Grade 7, only feedback. Grades are introduced at Grades 7 - 9 so that students are familiar with grades in Gymnasium (approximately 80% of Danish students continue to study at a Gymnasium). While a students’ grades at the end of Grade 9 somewhat qualify them for admission to Gymnasium, there are other pathways for students who want to go to Gymnasium if they did not achieve the required grades. All education in Denmark is free, and Danes can take a course (for free) at any age. Mathias explains, “It doesn’t matter if you’re 40 years old. You’re encouraged to study. The welfare system encourages education”. Most students attend public school, with a minority attended private schools (often these are also religious schools).

When asked about the kinds of issues that are discussed and addressed in schools and at a national level at Danske Skoleever, Mathias, Jakob and Chili tell Dureau that they support students to address a whole range of concerns, from toilets and facilities, to organising events such as the Prom, or addressing the growing issue of stress, anxiety, or bullying. Recently a national wellbeing measurement found that 1 in 5 students had been bullied and 1 in 3 had witnessed bullying. Other issues include motivation at school. Students want to be outside of the classroom, doing more physical activity, using technology, making videos, experiencing different teaching methods. They also wanted more support with the transition from compulsory schooling to gymnasium.

Mathias, Jakob and Chili felt that some of these issues had been addressed by the recent education reforms, which has seen schools make more of an effort to connect learning to the broader community. Jakob gives the example of a Maths class who might learn some theory, and then the local bank manager might come in to the school or the students might go to the bank. Although the school day is now longer, afterschool care is provided at all compulsory schools, and many schools now offer free tuition after school and have extra courses that students can take after school, such as learning Chinese, or yoga. The reforms also mandated that all compulsory school students do at least 45 minutes of physical activity each day, and that there is time for students to complete assignments at school, so that students whose parents are not educated are not disadvantaged. Dureau is told that no compulsory schools would give more than one hour of homework per night, and that even this amount would be considered a lot (there is more homework at Gymnasium). The students are positive about the reforms, which they admit are expected to take between 5-15 years to implement.

Mathias, Jakob and Chili confirm what Dureau has been told (and has seen) in regards to teachers being proud of their profession, and highly respected by their students and the broader community.

Jakob adds, “PISA data shows that Denmark does well with the bottom and middle students. Students who struggle are very well supported, for example, if they are dyslexic. The flipside is that high achieving students can get bored, and can sometimes become like a second teacher in the classroom, helping the other students, which is good… but not all the time”.

None of the three know exactly what they want to go on and study, or what they want to do as their “occupation”, but they didn’t seem stressed about that at all. Dureau left Danske Skoleever feeling absolutely marveled at the skills and experience these young people were developing through their involvement in Danske Skoleever, and incredibly inspired and impressed by the young people’s awareness of political and cultural issues, national policy and education in general.

Søndervangskolen

Søndervangskolen

Søndervangskolen is a compulsory school in a suburb of Aarhus. The school's 40 staff support the 330 students, 96% of which are bilingual. Deputy Principal Anne Katrine Nielsen Kusk explained to Dureau that prior to 2008 the school had very low data and a lot of attendance issues. Kusk arrived at Søndervangskolen as a teacher (with 16 years teaching experience) five years ago, and after 18 months she was appointed to the leadership team, which coincided with a restructure of the leadership team and the 2013 education reforms. A plan was developed for the school, which included new included building new learning spaces. The reforms mandated that teachers and students spend more time at school, and so the aim was to create nicer spaces for the teachers and students, and spaces that would bring students, teachers and leaders together. The Principal's office is the only office in the school that has a door. The door is glass, to match the office's transparent glass walls. Aside from two small glass-walled meeting rooms (available for staff to use for parent meetings, if needed) all other administration staff work in open spaces close to the teachers.

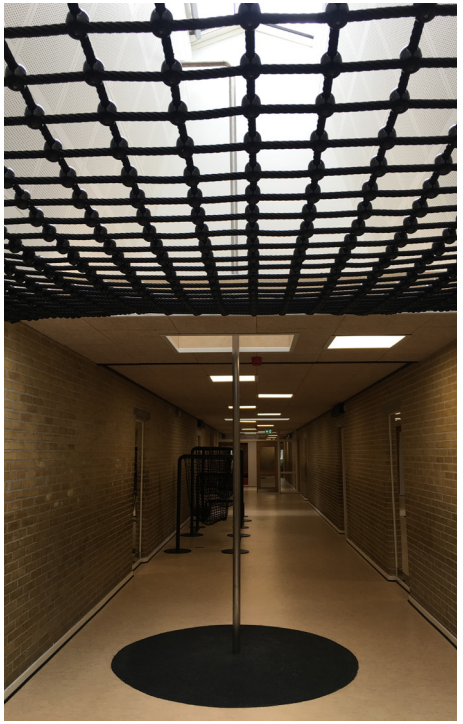
Søndervangskolen.Anne Kusk

Kusk led Dureau through the library space, where a giant piece of artwork hangs from the high modern ceiling, and reads SUCCESS IS AHEAD

The library is the centre of the school and is accessible to all staff and students. Kush leads Dureau through the building, in and out of classrooms, each space provides surprise after surprise. Each teaching space is named after a significant place in the world, such as a city or monument. The furniture in each room is styled to match the room's name. There are cafeteria style benches in San Francisco, theatre seating in London, tiered seating shaped like a mountain and painted green in K2, and a boardroom table underneath hanging pendant lights in Honolulu. There's a teacher's lounge named Hyde Park, a teacher workspace named Washington D.C, a conference room called The Senate, and a green room named Silicon Valley. The design of the building and of each classroom is incredible. An obstacle course runs through the hallways of the main building. Various equipment and sculptures encourage students to climb ladders or poles, swing on monkey bars or crawl over ropes throughout and around the lower, middle and senior sections of the building.

Breakfast served in the cafeteria each morning at 7:30am, and is provided at no cost to students, and their parents and siblings. Kusk tells Dureau that whole families come and have breakfast together there.

Classroom



Staff space

Physical activity course

A local youth club use the school building from after school until as late as 10pm. The space has a foosball table, full kitchen, television and couches, and do trips off site and can be accessed by students from as young as grade 4.

Youth Group space

Students at the Apple distinguished school all have access to iPads and Apple Mac computers. The school has plans to create a state-of-the-art Maker Space. Kusk explains that students are involved in the design of all of the spaces.

"We don't stand still", says Kusk, who explains that the school's results have improved from 3.6 in 2009 to 6.5 in 2018, making it the school that has demonstrated the most growth out of all 52 schools in Aarhus.

Søndervangskolen have worked for two years with James Nottingham and Martin Renton from Challenging Learning. It has allowed them to develop a shared language around learning for students, staff, parents, leaders. With such incredible improvements in their results, Kusk explains that one of their current challenges is maintaining their momentum, and that they are looking at what other high-achieving schools around the world are doing.

The school has a formal process for teacher coaching and observation. The five members of the leadership team conduct classroom observations twice yearly. Two days after the observation they meet with the teacher to discuss what they observed and provide feedback. Ten Champion Teachers on staff teach one less hour per week, and are trained to mentor and coach 4-6 other teachers.

Kusk explains that common language (such as the use of the Learning Pit or ASK – Attitudes, Skills, Knowledge models) have helped to tackle her greatest challenge in leading this change – consistency. "You have to be clear about your expectations, offer support, and give them time. You need to be organised, and have dialogue… it's about coherence", she says.

Associate Professor Kevin Perry

Dureau first met Associate Professor Kevin Perry at a conference in Melbourne in 2016. Perry has since returned to Melbourne to conduct some research in the area of how relationships between teachers and students can enhance learning and wellbeing. In 2017 he visited Dureau at Mount Waverley Secondary College. Currently working at the University of Greenland, Perry returned to Denmark to meet with Dureau in his hometown of Sorø, where he and his wife have raised their children.

He had arranged for Dureau to visit two schools in the Ringsted district, Vigersted Skole and Campusskolen, and to meet with Gitte Løvgren, the Director of Schools for the Ringsted Kommune.

Vigersted Skole - Ringsted

Vigersted Skole is a K-9 compulsory school with 296 students. All but two of the families who attend the school have two parents of Danish descent. All students at Vigersted Skole meet with a guidance teacher for 15 minutes at least eight times per year. Students can see their guidance teacher at any time throughout the year for support with social, wellbeing or learning issues. Each teacher at the school is a guidance teacher to approximately 13 students. Parent-teacher interviews are scheduled twice per year during which the parents and student meet with two of the students' teachers together for a 15 minute meeting.

Each class has a scheduled class meeting for half an hour each week. During the class meeting, which is facilitated by the teacher, the students reflect on how the class is going. Students have an opportunity to discuss the class rules, and can give feedback to, and get it from, the student council. As a UNICEF certified school, each class is required to develop a class charter at the beginning of the year, which is reviewed and referred to throughout the year. UNICEF certified schools are also required to establish a rights council, comprising students, parents and staff. There is a rule that there must be more children than adults on the council.

Jessie Johansen teaches Physics and Chemistry at Vigersted Skole, and also oversees the physical movement program which was introduced under the school reforms of 2013 mandating a minimum requirement of physical activity for all students each day. As Johansen takes Dureau and Perry on a tour of the school, she explains that this physical activity can be in the form of five minute 'brain breaks', or could involve running around the school, using outdoor equipment, searching for QR codes, or organised relay races. All teachers incorporate between 5 and 20 minutes of physical activity per 50-minute lesson.

Jessie Johansen

Dureau met with a group of students and asked three boys what they liked most about their school. They tell Dureau that they like the outdoor spaces, the basketball courts, and playing with their friends, but they would like to see their classroom facilities updated.

Vigersted Skole runs an enhancement program which enables advanced students to travel to and participate in classes at the local gymnasium school, for example, in science classes. There is also a specialised program for Autistic students. The afterschool program offers different courses in advanced English, Danish grammar, and a homework club. Students are assessed at the end of year 8 for their readiness for year 9. If they are not ready, then they are given extra support with their learning until they are ready. Students are not held back.

Johansen, clearly passionate about teaching and her students, explains that the staff at Vigersted Skole have "flex-time" of up to five hours per week, allowing them to grade papers from home. Teachers do not have allocated desks in the school building, but use shared office spaces. According to Johansen, the biggest challenge faced by most teachers at Vigersted Skole, who teach approximately 1250 minutes per week, is the lack of time to do planning and preparation for their classes.

Campusskolen

The structure at Campusskolen is different to most Danish schools. Its 700 students are in Grades 7 -10, unlike most schools which have K-9. The school has operated in this format for 6 years. Approximately 20% of Campusskolen students are bilingual, and many of the students live in social housing.

Dureau and Perry met with Anne Catherine Sund and Rasmus Aage, both passionate about improving student outcomes at the school. Sitting in Sund's office in a recently refurbished building Sund and Aage explain that at Campusskolen students select a particular stream from options such as the International stream (where classes are meant to be taught in English) or the Sports stream. Sund and

Aage are currently looking to revise the stream options for the next academic year, and are hoping to include a Culture and Media, and Art and Performance stream. The typical pathway for a graduating Campusskolen student is to move on to a gymnasium, a specialised Year 10 school, or to pursue vocational training.

Campusskolen Anne Rasmus Kevin

There are 56 staff at Campusskolen, where teachers typically teach between 19-21 on hour lessons per week. In addition to this they are required to attend up to three hours of meetings and do yard duty.

Sund spoke about her passion for education and her firm belief in the Grundtvig ideologies. She believes that class time is most productive when students learn together, working small groups. “This way, there is a lot of learning going on. If I am speaking to a whole class and really only talking to the 2 or 3 academic students, there’s a lot of day dreaming going on” she explains.

Like all other schools Dureau has visited, physical movement and brain breaks are an integral part of the school day at Campusskolen. “When you’re happy, a lot can happen” says Sund. “The kids are the customers… and they should be happy. Not in an ice-cream and “we sit on Facebook all day” kind of way… in an “I feel safe, both socially and academically” kind of way”.

Like many Danish schools, the students at Campusskolen stay in the same class during their time at the school and form strong relationships with their peers and teachers.

Sund is excited to hear about the work that Dureau has done at her school in the area of student feedback to teachers. She admits that while the school board at Campusskolen, which includes some students, is very active, the student council has not been so effective, and that feedback from students to the student council, and then back from the student council to the students is not really happening. Sund is also interested in learning more about the Teach the Teacher program, which sees students giving feedback to teachers. “Often the people who most need the support are those most reluctant to have someone support them or observe them in the room” she says.

“The kids are the customers… and they should be happy. Not in an ice-cream and “we sit on Facebook all day” kind of way… in an “I feel safe, both socially and academically” kind of way”.

Gitte Løvgren – Director of Schools, Ringsted Kommune.

Dureau and Perry meet with Gitte Løvgren, Director of Schools in the Ringsted Kommune and the Town hall in Ringsted. Løvgren’s role is to oversee, and improve, teaching and learning at the 15 schools in the municipality. While most of the 15 schools are quite autonomous, Løvgren is tasked with helping school

leaders and teachers to implement policy and strategy in their own context. Her aim is to help teachers to take more responsibility for student learning, and to see more progression in student achievement. The principals of the schools that Løvgren oversees recently attended a three day coaching seminar. “We help them to consider what is needed at this school” she says.

Ringsted Kommune

Mette Bundgaard – parent on school board

Mette Bundgaard’s 15-year-old son is a student at Campusskolen, and Bundgaard is the Vice Chairperson of the School board. She is also the secretary to the Mayor of Ringsted. Mette’s son is very happy at the Campusskolen. Bundgaard believes that her son and the other students thrive in an environment which sets high expectations and encourages responsibility. She explains to Dureau that the school board discuss items on an agenda which set by the school leaders, and also discuss the school budget. Students and parents on the board have the power to prioritize some resources over others when it comes to managing the school budget. She describes the students as being “very forthright” about issues, including school trips, budget concerns, facilities and bullying. In some instances, the students on the board may be asked to leave the room, for example, if a particular student or teacher is being discussed; however, the students’ position on the board is far from tokenistic. Bundgaard explains that the school leader must consult with key stakeholders, parents, staff and students, before they can make any decisions.

Martha Perry – student (Year 9) Kevin’s daughter.

Over dinner at Perry’s family home, Dureau speaks with Perry’s daughter, Martha, about her experience as a Grade 9 student. Martha has been in the same class with 23 of her peers since starting at the school ten years ago and has formed excellent relationships with her classmates and teachers. Martha describes a good teacher as one who knows how to communicate with students, is attentive to all students, doesn’t shout, who seems in control and confident, and can calm the class without having to raise their voice. She describes her relationship with most teachers, who she refer to using their first names, as down-to-earth and relax, and tells Dureau that it is normal for the class to visit their teachers’ home and have a meal on the last day of school. While she has had different specialist teachers for various subjects, Martha’s class has had one main teacher, Finn, since the 4th grade.

In just a few weeks’ time Martha will complete Grade 9, and hopes to attend gymnasium and eventually study drama or psychology. She has been preparing for her final exams, and says that oral exams require students to have a deeper understanding of the material than written exams do.

Martha likes to feel like she is learning, and that her teachers believe in her ability and won't give up on her. "Teachers are quite 'chill' about grades. Here it's more about how much you say in class. It's the relationship between the student and the teacher that counts. Grades are more about what the student is capable of, not how they perform on the assessment task" she says.

She adds that Danish students generally feel comfortable speaking to their teachers, or parents, about any problems they encounter, and that in both relationships the respect is mutual.

At Martha's school the school council had advocated for new bathrooms, which the previous Headmaster had "slammed down", claiming they were too expensive. She smiles as she tells Dureau that the New Headmaster has listened a lot to the students, and based on feedback from the students he is helping them to plan a school ball, and they are also getting new student bathrooms.

Skals Efterskole

At each of the Danish schools Dureau had visited, students and teachers had spoken about the uniquely Danish concept of an Efterskole, which dates back to 1850 and Grundtvig's philosophy about educating the children of Denmark by the spoken word. Although optional, many Danish students take a gap year between compulsory school and gymnasium, during which they can travel, do an international school exchange, attend an Efterskole, or even work. More than half of the students in Denmark attend one of the country's 250 Efterskoles. Each has their own unique program, such as sport, music, or the arts.

Skals Efterskole

Dureau visited Skals Efterskole, located near Viborg in central Jutland, a five hour train journey from Copenhagen. Students who attend Skals live on campus for the duration of the academic year, and reside in mixed-gender 'houses'. In each house there are four bedrooms, each with room for eight students to sleep, a kitchenette, two bathrooms, and a common lounge area.

Skals' unique focus is on academic study and international experience. The 150 students choose from six separate 'streams', or classes:

» Year 9 Danish system

These students complete a Year 9 course in the Danish system.

» Year 9 Danish & IGCSE class

These students study Danish, English, Maths, Physics in both the Danish system and the Cambridge IGCSE system, and sit twice as many exams as those students who choose one system of the other.

» Year 10 Danish System – Culture

These students study core subjects and also complete a project course 'culture'. The project enables them to develop skills in the area but is not assessed with an exam.

» Year 10 Danish System - Science

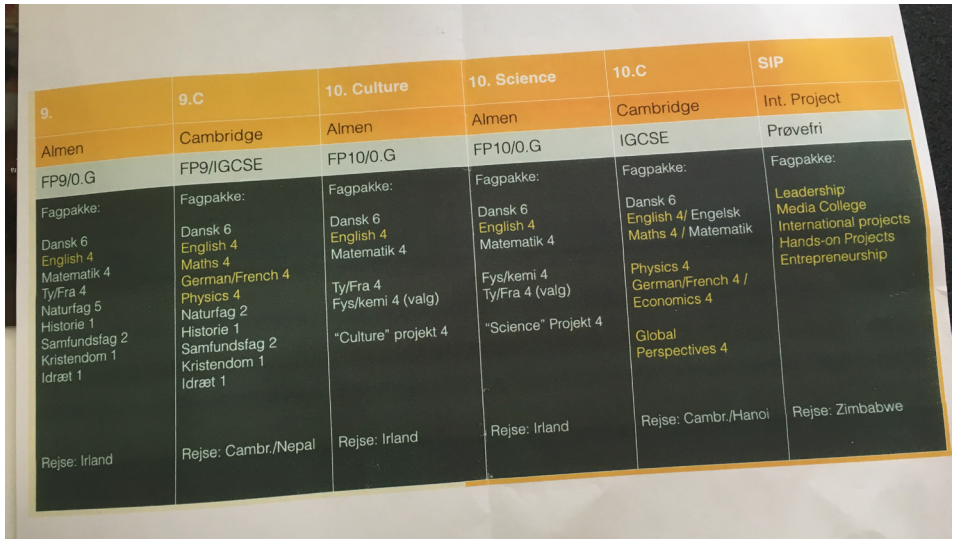
These students study core subjects and also complete a project course 'science'. The project enables them to develop skills in the area but is not assessed with an exam.

» Year 10 IGCSE class

There are two Year 10 IGCSE at Skals, which is considered to be a highly academic stream. Students who successfully complete the course are able to attend an IB school anywhere in the world, and can complete their IB (graduate) within two years.

» Skals International Project Class (SIP)

Only Year 10 students are eligible for the SIP class, and students wishing to do SIP must have achieved a high standard of academic results in Year 9. For the SIP class, the entire academic year is based on project work. The SIP students do not attend any formal classes, but learn skills throughout the year through project work. For example, they may produce a video as part of a project. The class focuses on teamwork, leadership, project management, and community.



9.	9.C	10. Culture	10. Science	10.C	SIP
Almen	Cambridge	Almen	Almen	Cambridge	Int. Project
FP9/0.G	FP9/IGCSE	FP10/0.G	FP10/0.G	IGCSE	Prøvefri
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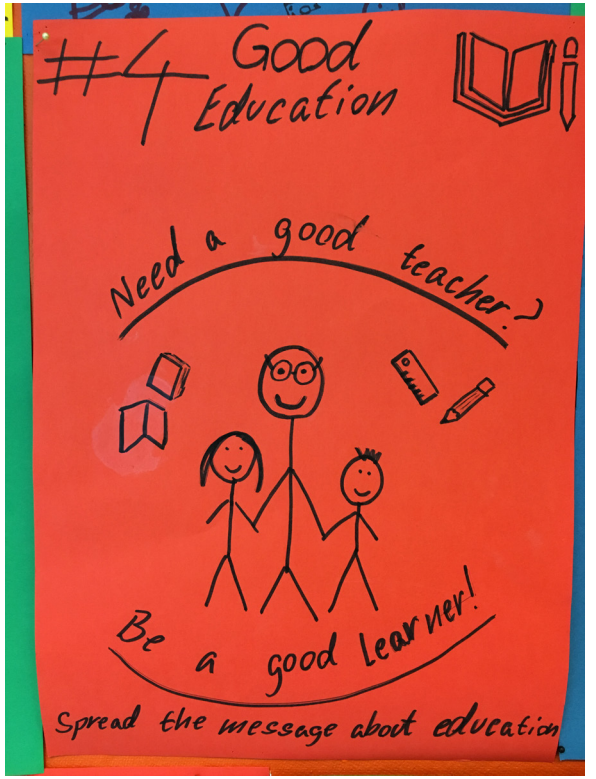
Skals streams

The Vice Principal of Skals, Lars Mouritzen, explains that class sizes range between 20 and 25 students, and that each of the six streams participate in at least one international trip throughout the year. The Cambridge classes go to Cambridge, as well as either Nepal or Hanoi, and the SIP class recently travelled to Zimbabwe to complete a community project there. According to Mouritzen, most Skals students go on to pursue further education at a gymnasium after one year at Skals (a small number of students stay for two years), and students choose to come to Skals because they want to learn with other highly capable and engaged students. Mouritzen explains that for the teachers at Skals, the school is like a second home. A typical class will involve a mix of direct-instruction and students working in pairs or small groups. Skals students set goals for themselves and give frequent feedback to their teachers and peers. Recently students ran workshops on bullying and social media for other students and teachers based on data from a survey Mouritzen had conducted.

Peter Sloth has been a teacher at Skals for 20 years and oversees the SIP class. Sloth and Dureau had been in touch since Dureau met Sloth's cousin, Signe Daly, at a conference in Vermont USA in 2017. Sloth kindly arrange for Dureau to visit and stay at Skals, to learn more about the Danish tradition of an Efterskole, and in particular the unique SIP program.



Poster education

A typical day at Skals begins with students and staff eating breakfast together in the communal dining hall at 7:30am. Students sit at designated tables, and leave the hall only when everyone has finished eating and the teacher in charge

dismisses the students. After breakfast, the students enter a large auditorium for 'News' between 8am and 8:30am. News, a daily ritual, takes various forms. Some days the group watch the actual news, often international news, on television, followed by a discussion about news items, such as world politics. Other days News is in the form of a presentation by one of the teachers or a student, who might talk to the group about a life experience that they have had.

After News the students attend their first 80 minute class for the day. They break at 9:50am for morning tea, which is followed by designated time during which students must clean their dorms and the rest of the school building. The rest of the day involves more classes, scheduled between lunch, afternoon tea and dinner, all served to the group in the communal hall. Dinner is served at 5:40pm, and between 6:15pm and 7:15pm the students have one hour assigned to complete 'homework'. They spend the rest of the evening at their leisure. Some play cards, play board games or computer games, others work-out in the gym, play foosball or table tennis, or watch television or a movie. The teachers, who are rostered on to sleep at Skals several nights each week, join in and play card games and trivia with the students.

Dureau noticed how relaxed and happy the students seem, laughing with friends over a game of trivia, despite the students having their Cambridge exams scheduled for the following morning. The students are required to be in their dorms by 10pm. Teachers check each room between 10:30pm and 11pm, and lights are turned off by 11pm.

Mathias, Alex, and Mad, from one of the Cambridge classes tell Dureau that they chose the Cambridge stream because the challenge appealed to them. Unlike the Danish system, which has both written and oral exams, students completing the Cambridge course sit only written (and standardised) exams. The boys, who have become close friends since meeting at Skals when they started there almost a year ago, have been preparing for their upcoming Economics exam. The three boys are not sure what they hope to study after completing gymnasium, they are not too concerned. "In Denmark there is not a huge difference in pay for doctors, teachers, truck drivers, fashion designers… there are pathways for those who don't want Gymnasium too, for example if you want to be a truck driver. There's no stigma attached, you just do what you want to do", says Mathias. Alex tells Dureau that the students at Skals all want to be here, and have very positive relationships with their teachers and peers. Although the boys sometimes get "lots of homework" (sometimes one hour per night), they don't mind the work because they enjoy what they are studying. Mathias, Alex, and Mad recently travelled with their class to Cambridge in the UK, and then to Hanoi, where they stayed with host families. When asked about the biggest differences they noticed between Danish and Vietnamese students, the said that they noticed that the Vietnamese students seemed quite stressed about homework, and that many of them had up to 6 hours of extra work or tuition classes outside of class time. They also noticed that the Vietnamese students' relationships with their teachers and peers seemed less personal, and that the Vietnamese students did not get as much choice in the subjects they study. "We have a lot of choice… I guess that can be stressful in some way too" says Mads.

Dureau spent two days with Sloth and the SIP class at Skals. One the first day, half of the SIP students worked together to finalise plans for the activities they were running the following day for a group of visiting kindergarten students. The visit had been organised in conjunction with the local library as part of a national initiative to focus on literacy. The rest of the class finalised plans for a parent evening the following night. Their parents and extended families had been invited to visit Skals to hear about the group's recent trip to Zimbabwe. Sloth explains to Dureau that these are examples of the kinds of class projects the SIP students work on. Sometimes the projects run for just a few days, and others span a few months. Students develop communication and teamwork skills. They prepare presentations and resolve conflicts, all under the guidance of Sloth. There is no formal assessment processes, and no exams.

Skals SIP class

While the SIP class run activities for the kindergarten students, Dureau meets with the kindergarten teachers who tell Dureau that in Denmark it is not uncommon to allow kindergarten children to play with sharp knives, or climb tall trees. Surprised, Dureau asks “But what if they cut themselves, or fall from a tree?”, to which one of the teachers replies, “It only happens once”. The teacher adds “we let the children go outside in the snow, to learn that it is cold and they can handle the cold. They’re outside in nature most of the time… unless there’s thunder and lightning”. Dureau learns that it is common for parents to let their babies sleep in prams outside in the cold because “they sleep better that way”. The kindergarten teachers, clearly amused at how Dureau is processing what she’s hearing, add that in recent years a Danish zoo invited children to see a chopped-up giraffe being fed to the lions. “You should google it” she says. “We could not believe it made headlines around the world… that’s what we do in Denmark, we teach the children about life”.

“We could not believe it made headlines around the world… that’s what we do in Denmark, we teach the children about life”.

Skals SIP class with kindergarten students

Reflecting on their time in school, the SIP students tell Dureau that most Danish children enjoy going to school because they like being with their friends, and that most teachers in Denmark are very relaxed. “For example, in the oral exams, the teachers want you to do well, they want to help you to show home much you know. They might ask questions to help you to show what you know. It depends on the teacher of course”. In regards to incomplete homework, one student says “If you often don’t do your homework then they will contact your parents and say “hey, what’s up?” But there’s no punishment, you won’t get in trouble… they want to help you! You’ll get help!” Another student adds “It’s just not normal to be

strict. The teachers don't want us to be stressed, and if students don't like the teacher they won't work. But if you like your teacher you won't want to disappoint them. Learning is better this way, it is way easier and more fun when you like the teachers". When asked if students in Denmark seem more relaxed than students they met on their international exchange, a student responds "Here, there's not a lot of anxiety, even with exams. We go in, we're relaxed, we do our thing and it's done".

"If you often don't do your homework then they will contact your parents and say "hey, what's up?" But there's no punishment, you won't get in trouble… they want to help you! You'll get help!"

Ørestad Gymnasium

Ørestad Gymnasium is located just 10 minutes by train from the centre of Copenhagen. The school was founded in 2005 and moved to its award-winning purpose-built building in 2007. There are no traditional classrooms at Ørestad Gymnasium. From the ground floor of the main building a huge timber staircase winds up throughout the atrium, giving the impression that it is floating down from the sky. From any vantage point on the staircase you can see a new and exciting view of the building's light-filed and modern teaching and learning spaces, which look more like something you might find at Google headquarters than classrooms.

Some students sit on couches or in beanbags, others sit in café-style seating or work in groups at tall workbenches. The building is almost entirely open-plan, with the exception of a small number of areas enclosed by glass walls that can be written on with special markers. Despite being filled with students the building is quiet and calm. A Maths class are completing a test in an open-learning space, with a French class being conducted just a few meters away.

Dureau met with Mathematics teacher Thomas Birch at the main reception on the ground floor, where administrative staff sit in an open-plan office space, complete with kitchen facilities, couches, coat racks, pigeon holes and unisex toilets. Birch walked Dureau to his first class for the day, held in another equally modern building 200 meters from the main building, which the school recently occupied due to increasing enrolments.

The class is 2B Level A Maths class (the "2" is because the students were in the second of their three-year course and 'B' because they were the Biotechnology stream). Birch comments that many of these students attended an Efterskole before coming to Ørestad, and that often the students who come from an Efterskole seem more mature and committed to their studies. The classrooms in the building are named after famous movies, and the 2B class is taught in a room named 'The Sixth Sense'. Birch's lesson is on Statistics, and his students use TI-nspire calculator software on laptops, which Birch tells Dureau the students can use in their exams. Students follow Birch's instructions, which he projects using

the TI-nspire emulator onto a screen at the front of the room, and create their own files on their laptops. Students access the software via a school license, so it is at no cost to them. Students at Ørestad do not use the handheld calculators. Birch, who had outlined his learning intention at the beginning of the class, occasionally stopped his explanation to walk around the room and check that the students were on track.

The students at Ørestad use Google Drive. Each student has two folders for each of their subjects, one folder can be accessed by the entire class, and includes class notes uploaded by the teacher. The other is their own private folder for that subject, to which they can upload resources and keep class notes. Dureau noticed three girls sitting together, all collaborating on the one Google Document. One student was taking notes as Birch was talking, the second was adding and annotating screenshots from an online version of a textbook, and the third was adding screenshots from the calculator software. One of the students tells Dureau "Sometimes, when he's talking, it's hard to get everything down… this way there are three of us and we work together to make sure our notes are thorough".

These students will not sit Maths exams this year. Instead, their assessment has included mini tests, handouts, assignments and even creating videos. When asked if Birch is required to write a formal report for the students' parents he says "No, we don't really have a lot to do with the parents". Aside from assignments, Birch does not set a lot of homework for his students, and is he tells Dureau that he is in the process of rethinking his assessment strategies. "In Denmark, the choice of assessment methods is up to the individual teacher. At the moment I set an assignment, they take it home, they can call each other, or cheat, or get their parents to help them… then I'm marking someone's work". Between 3:15pm and 4pm each day teachers can run additional help classes, and Birch makes use of that time to assist students with their work when needed. He is thinking of using the time for assessment too. "This way I can help them to produce the work and give them instant feedback. This way I can give them live feedback. I can ask them "did you know how to….", or "did you understand that…", and I will actually know what they can and can't do", he says.

Like at compulsory school, students at Ørestad Gymnasium are expected to be physically active, and all students are required to take a course in Physical Education every year. All Ørestad are also expected to study a science.

Teachers at the school are experts in their field and do not teach subjects outside of their specialist area. They often follow a class through the three years of study in a particular study. A teacher's face-to-face teaching time depends on the subject they teach and the amount of grading they are expected to do. Teachers are allocated almost the same amount of time to prepare for their classes as they spend teaching them. Teachers log the number of hours that they spend working at home on an online system and have access to 'Flex Time'.

Dureau meets Lis, a teacher in her first year of teaching which has includes a one-third teaching allotment, one-third observation (of experienced teachers), and one-third pedagogical studies. Lis has been observed three times throughout the year by a representative from the Ministry of Education, and describes her greatest challenge as "combining theory and practice".

When Dureau asks Birch about the concept of 'Student Voice' (which she has discovered does not directly transfer into Danish, perhaps because listening and responding to young people is so embedded in Danish culture) he seems amused. "We listen", he says. "We really listen. It's not about "what did I teach?" it's about "What did they learn?"".

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6. Personal, Professional and Sectoral Impact

I am a forward-thinking and passionate educator, and am very grateful for the leadership opportunities I have had early in my career. I am determined to learn and get better at what I do, and I continue to challenge and extend myself professionally. My role as an educator and educational leader gives me joy and personal satisfaction. I am excited about my work and about improving outcomes for my students. I seek opportunities to share my passion with other educators, and enjoy seeing the impact of my leadership extend beyond the students that I teach.

This Fellowship has enabled me to take my work to a new level and has given me opportunities to build international network and learn from and collaborate with fellow educators to drive positive change in education. I am passionate about improving education and spend a lot of my own time reading about best practice in education around the country and the world. I enjoy learning from others and about how to adapt and improve current practices in education. The Fellowship has provided a platform for my international research in the STEM Education and Student Voice.

On a professional level this Fellowship has added significant substance to the work that I am currently practicing in the areas of Mathematics education (specifically engaging students in the study of Mathematics) and Student Voice. Sharing my findings with fellow educators through networking, writing papers, and presenting at conferences, will further enhance my profile in this area and further develop my skill set.

For Australia to remain a leading country in a rapidly advancing global world, a serious investment needs to be made into both of the areas of my proposed Fellowship. I have a strong desire to see Australia remain at the forefront in these areas and I truly believe that I have the capacity and the skills to be a leader, and make a positive contribution to development in these areas.

The Programme for International Student Assessment (PISA) is a worldwide study by the Organisation for Economic Co-operation and Development (OECD) of 15-year-old school pupils' scholastic performance on Mathematics, Science, and Reading. In recent years Australia has seen a decline in our results in Mathematics and Science, indicating that Australian standards are falling against international benchmarks. It is intended that my Fellowship investigation will impact the Victorian Education Department positively by enabling me to access international training and experience in best practice in these areas. The National Assessment Program – Literacy and Numeracy (NAPLAN) annually tests Years 3, 5, 7 and 9 students, covering Reading, Writing and Language Conventions and provides a standardised measure of student achievement comparable within the country. Recent NAPLAN and PISA results indicate that Australian stand are decreasing nationally and internationally. My Fellowship studies in best performing education systems will inform the Australian experience.

At the invitation of the Secretary of the Education Department in 2016 I became a member of the Victorian Department of Education's Education State Guiding Coalition. This group of key stakeholders and partners in education in Victoria meet to generate ideas on accelerating delivery and implementation of the Education State in schools. They also provide the Department with critical feedback about the Education State, obstacles or impediments to traction on the ground, and identify trends, good practice and evidence of success with a focus on outcomes. My Fellowship investigation findings will be shared with the Education State

Guiding Coalition, thereby having a direct impact on the Education sector through key stakeholders in the Department including the Secretary of the Education Department.

I am a National Teacher Trainer for Texas Instruments and attended the International STEM Conference in Dallas Fort Worth at their invitation in 2015. I was able to share my knowledge and skills with Maths Educators from around the world. This important group of educators will also be the beneficiaries of my Fellowship findings. I have been invited to present at the 2020 Texas Instruments Conference in Dallas Fort Worth.

The benefit of learning from the global educational experience, and bringing these learnings back to be implement in Australia will benefit the nation. The sharing of knowledge across international borders is one that I am proud to have supported. International researchers have visited me at my school to learn from my experience, including Kevin Perry (Postdoctoral researcher with the Department of Learning and Philosophy, University of Aalborg, Denmark) who visited to immerse himself in the student focus group program that I established; Judy Walton (Chief Innovation Officer at Forest Hills Public Schools in Michigan USA) who visited from the USA to research Student Voice at MWSC; Dr Russell Quaglia who visited MWSC in 2017; and more recently educators from New Zealand and the Netherlands.

In June 2019 I presented at the Melbourne Graduate School of Education's Improving Student Agency, Voice and Participation Conference. In November 2018 I was a keynote speaker at the University of Melbourne Network of Schools (UMNOS), and in July 2018 I ran a Masterclass session - Leading a Culture of Student Voice and Agency at the BASTOW Emerging Leaders Conference.

I continue to seek opportunities to share my work with other educators. My Fellowship investigation will continue to positively impact my sector by allowing me to investigate, adapt and apply best international practice in education across Victoria and Australia.

7. Recommendations and Considerations

Before diving into my recommendations, it is worth acknowledging two significant differences between Australia and Denmark. Firstly, Australia is approximately 180 times larger than Denmark in terms of land size; however, the population of Australia is just over four times that of Denmark.

Secondly, it is well known that people in Denmark pay some of the highest taxes in the world. Of the OECD countries Denmark is in the top six countries in terms of the amount of taxes paid as a portion of the economy, with a rate of 51.6%. The OECD average is 37.1%. Australia's rate was 35.3% of GDP in 2018, putting Australia in the bottom six of 33 OECD nations.

Left: The size of Australia, relative to Denmark. Source: https://www.mylifeelsewhere.com/country-size-comparison/denmark/australia

Right: The size of Denmark, relative to Australia. Source: https://www.mylifeelsewhere.com/country-size-comparison/denmark/australia

Teacher Training in STEM Education

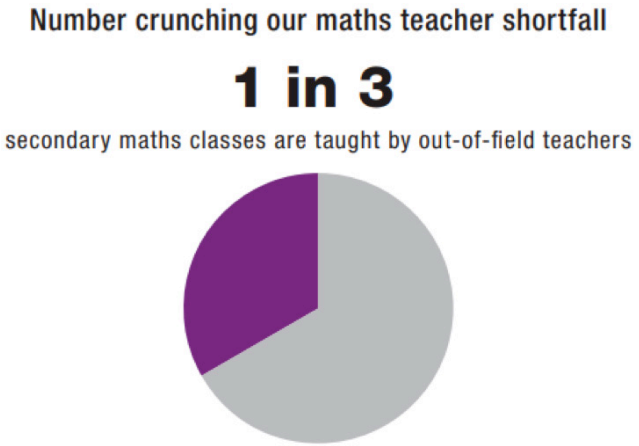
In most Danish classrooms, students refer to their teachers (and even the Principal) using their first names, and Danish teachers dress quite casually compared to many Australian teachers. Despite their casual appearance, teachers in Demark are very highly regarded by all members of the community – students, parents and the broader community. They are highly regarded and respected for their knowledge and skills. Danish teachers have spent years studying to be a teacher, and the quality of Danish teacher training is considered to be among the best in the world. Gymnasium teachers have completed at least a five-year Master's degree in their field of specialty, before completing a sixth year of study as part of their first year of teaching in a school. Danish teachers are not asked to teach out-of-field (i.e. They are not asked to teach a subject that that they are not experts in), which means that Danish students are taught only by teachers who are masters of their subject knowledge.

The fact that all Danish science and mathematics teachers are highly trained in Science and Mathematics may sound to some like common sense; however, as we know, this is not the case in Australia. The fact that all Danish students are taught by highly skilled Mathematics and Science teachers is sure to contribute greatly to Denmark's exceptional student outcomes in the fields of Science and Mathematics, and also the fact that many Danish students go on to pursue these areas of study at a tertiary level. In Australia there are an alarming number of students who are being taught Mathematics and Science by teachers who are not specialists in these fields. In a paper released in November 2018, Professor Geoff Prince & Michael O'Connor of the Australian Mathematical Sciences Institute stated that between 21 percent and 38 percent of Year 7-10 Maths classes across

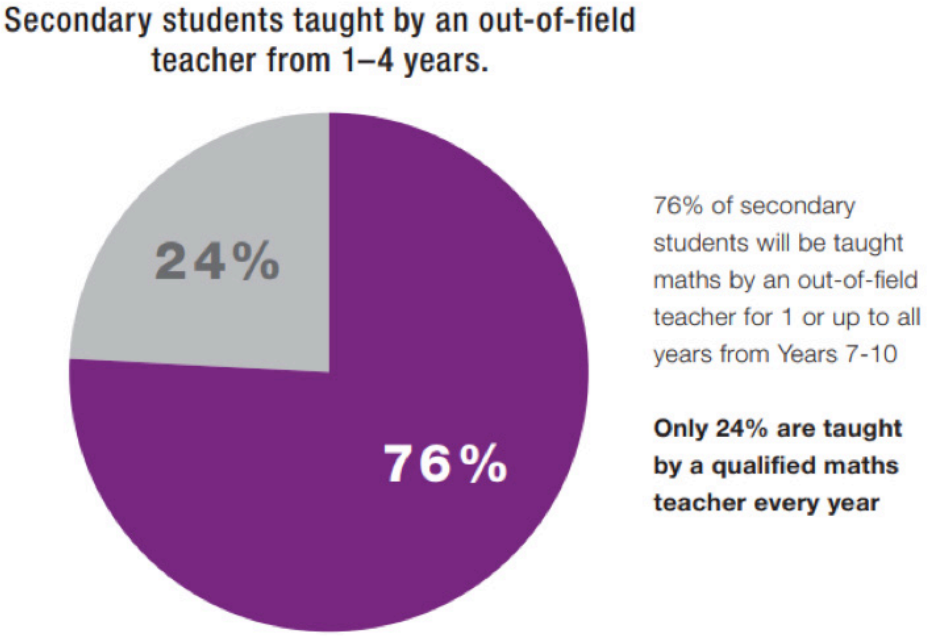
the country are taught by out-of-field teachers.

According to Prince and O'Connor, out-of-field teaching in mathematics not only affects the learning outcomes of students, but also limits a schools' ability to offer the more advanced subjects at Years 10 through 12 which lead to degrees in fields such as science, engineering, and medicine. They also note that this problem is worse in regional, remote and mid to low SES communities across Australia. In a 2019 OECD publication, Balancing School Choice and Equity AN INTERNATIONAL PERSPECTIVE BASED ON PISA, Australia has the 4th highest degree of social segregation amongst OECD countries, and only Mexico, Chile and Hungary have greater social segregation of disadvantaged students than Australia (OECD, 2019).

Prince & O'Connor raise the issue of declining numbers of graduates entering the Maths teaching profession. Their paper, Crunching the numbers on out-of-field teaching in Maths, Prince and O'Connor used an algorithm to estimate how long it would take to halve the out-of-field problem if recruitment of freshly trained graduates matched retirement of in-field and out-of-field Maths teachers. Their calculation suggested that it would take 13.5 years.



(Prince & O'Connor, 2018)



(Prince & O'Connor, 2018)

It is reassuring to know that both state and federal governments have been working towards improving teacher training in Australia. In recent years the Victorian Government, under the leadership of Deputy Premier and Education Minister James Merlino, has sought to raise teaching standards, lift the profile of the profession, and attract the best and brightest into the profession. The ATAR entry requirement for teaching degrees in Victoria has increased from 65 to 70, and the average ATAR required for education degrees has jumped to 76.2 - up from 62.7 in the past three years (Push to raise teaching standards adds up, 2019). The Victorian government has also introduced a test to screen aspiring teachers for resilience, ethics and empathy. A recent federal government initiative is a literacy and numeracy test which aims to ensure that Australian teachers are in the top 30 per cent of adults in terms of reading, writing and performing simple maths equations. From mid-2020, every jurisdiction will be compelled to ensure

newly registered teachers have passed the literacy and numeracy test (Push to raise teaching standards adds up, 2019).

While these are all positive steps in the right direction, more can be done to encourage more young Australians to pursue a teaching career. Australia is now in the midst of a crisis where many young people are being taught by teachers who are not specialists in their field. Every effort should be made to ensure that Australian students are learning Mathematics and Science from teachers who are passionate about their subject area, and experts in the field.

RECOMMENDATIONS:

1. No Australian child should be taught Mathematics or Science by a teacher who is not a specialist in the field.

2. Every effort should be made to attract highly skilled people to the teaching profession, and to support them in their profession.

3. Lifting standards for graduates entering the teaching profession must be in combination with increasing support for those in the teaching profession.

Physical Activity – Let's move!

One of the Victorian Government's Education State Targets is that by 2025 the proportion of students doing physical activity for an hour a day, five times a week, will grow by 20% (State Government of Victoria, 2019). EduMatters Magazine (2019) reported up to 81 per cent of Australian children were not meeting physical activity guidelines. Active Healthy Kids Australia claimed in late 2018 that Australia was ranked at number 32 out of 49 countries for children's physical activity levels. The Australian Government has committed $200 million to a Sporting Schools program, which is managed by Sport Australia and aims to provide Australian children with free access to physical activity.

Since the recent reforms in Danish education, it has been mandated that all students in compulsory schooling are physically active for a minimum of five minutes per lesson (typically a lesson is between 40 and 60 minutes long). Not only is it mandated, but from what Dureau observed, this is actually happening in Danish schools. Many Danish schools have purpose built physical activity circuits and equipment, and these are often inside the school buildings, which means that students can use the equipment even in cold or wet weather. Some schools have a Physical Activity Coordinator who supports teachers across the school to embed physical activity exercises into their lessons. For example, students learning about coordinate geometry might make use of a cartesian plane that has been spray painted on the asphalt.

Integrating physical activity into Danish schools has not come without its challenges, but it has shown to have a positive effect on students' well-being and academic performance (Knudsen, Skovgaard, & Bredahl, 2018).

Giant cartesian plane being spraypainted on

Cartesian plane

RECOMMENDATION:

4. Australian students should engage in physical activity during the school day. Increased physical movement has been shown to increase academic and wellbeing outcomes for students, and should be part of lessons in all subjects, not just as part of Physical Activity classes. Schools need resources and support to be able to do this, including professional learning for teachers in how to incorporate physical activity into the curriculum.

Stress (or lack thereof) about the future

One difference that Dureau observed time and time again when meeting with Danish students, was how carefree, relaxed, and happy they seemed compared with Australian students. Students, even those in their final year of gymnasium education did not seem at all stressed about exams, school work, or their future. Dureau found, through interviewing students, teachers and parents, that underpinning their lack of stress and their high levels of overall happiness, seemed to be a genuine belief that they were free to choose whatever path they wanted in their lives. Students felt that those around them – friends, parents, and of course their teachers - truly cared about them and wanted them to pursue their passions.

While the Danes strongly value education, there did not seem to be any pressure from parents for their children to enter a certain profession or study in a particular field. Rather, schools and families seemed to focus more on a child's strengths. Students felt that whatever path they choose to take in their educational or vocational journey, they would be supported – both financially and emotionally – and they seemed more focused on how they could positively contribute to the community and society.

RECOMMENDATION:

5. Danes are not persuaded by stereotypes and do not put pressure on young people to follow a certain path. Our goal as educators should be to help students to grow into happy members of society. We can learn to focus more on a child's strengths, and support them to pursue their interests and focus on how they can contribute to society in a positive way.

Oral exams

Organising and administering oral mathematics examinations in Denmark is not an easy task. Logistically it is complex, not to mention expensive. Oral examinations require enough expert, highly skilled examiners, as well as teachers who are capable of preparing students for such exams.

In my opinion, the resources and time that would need to be dedicated towards implementing oral mathematics examinations, if done properly, would greatly enhance learning opportunities for Australian students.

Dureau is not suggesting that we introduce oral examinations on a whim, and acknowledges that it could take years (and potentially decades) to embed the practice across the country. A critical step in such a significant shift in how we assess student learning of mathematics would be providing adequate teacher training. We can take some steps towards introducing oral assessment by providing professional learning opportunities for Mathematics teachers to learn

how to develop and use assessment tasks appropriate for assessment via an oral exam.

RECOMMENDATION:

6. If all Maths and Science classroom teachers are highly trained in their field, then there is no reason why oral examination could not be incorporated into teaching practice. Oral examinations allow students to demonstrate their understanding of complex ideas in an alternate setting to a written exam, and develop students' skills in communication, teamwork and problem solving.

Teaching spaces

At each of the schools Dureau visited, it was clear that a lot of thought, time and resources had been dedicated to the design of the school's facilities, and in particular the learning spaces. Classrooms were comfortable for both students and teachers. Considerations in the design of learning spaces went beyond the design of classroom furniture, and included the design of buildings to enhance the natural light that entered classrooms, the design of lighting (warm light which made spaces feel cozy), adequate heating, and additional comforts like access to power so that students could charge their devices, or hooks for students to hang their coats.

Many of these designs were also very practical, such as tables that were designed so that chairs hooked on underneath them, making cleaning the floor possible without having to stack chairs on top of tables, or bench seats and tables in the corridors, attached to the walls, which could be folded up or down providing additional seating for students.

Chair design

Top: Fold down tables in corridors

Left: Poster education

RECOMMENDATION:

7. Students and teachers spend a huge proportion of their time, most of their day, in a classroom. All teaching spaces should be comfortable for both teachers and students, and conducive to learning and creativity.

Technology

In a world where technology plays such a vital and increasing role in how we live our lives, technology also plays an ever-increasing role in education. As Dureau visited classrooms she observed technology being used in powerful ways to support student learning.

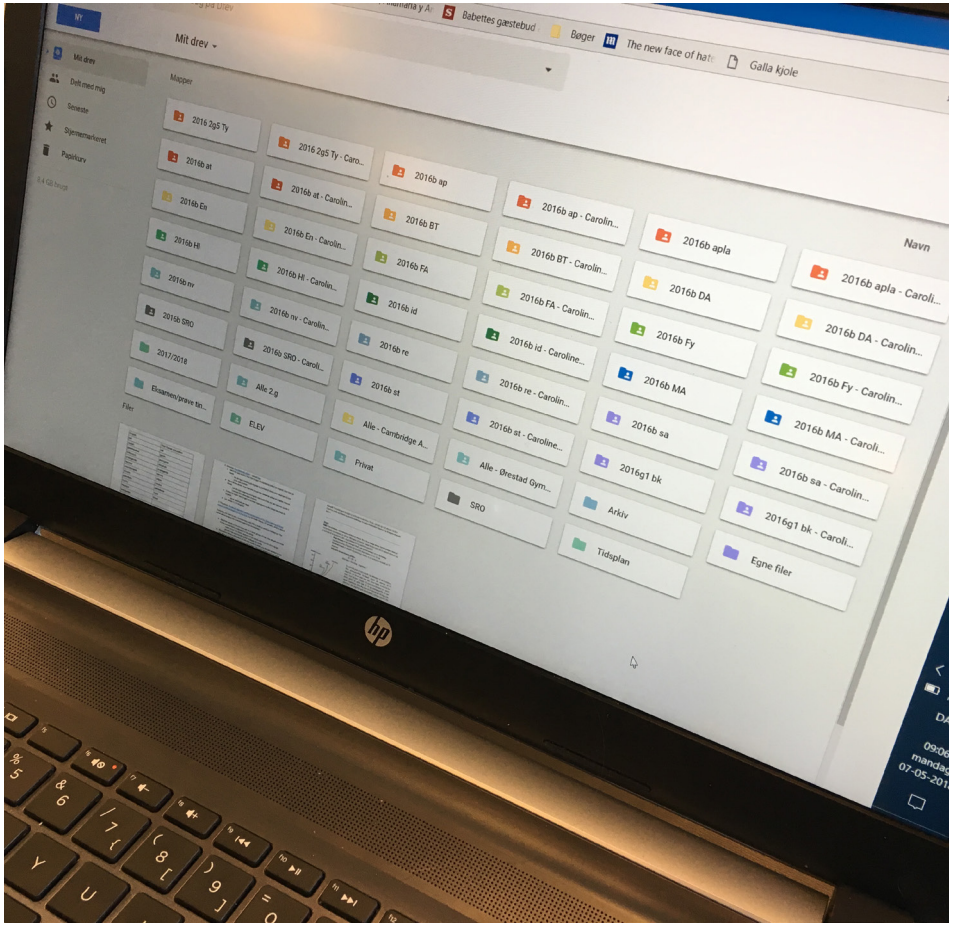
Whether it was second grade students used iPad applications to learn time, gymnasium students using Skype and Facebook to connect with students on the other side of the world, the use of editing software to create films about an international study tour, or an Efterskole using the internet to live-stream international news to the entire cohort each morning after breakfast, the Danes use technology to enhance student learning.

Students using iPad for time

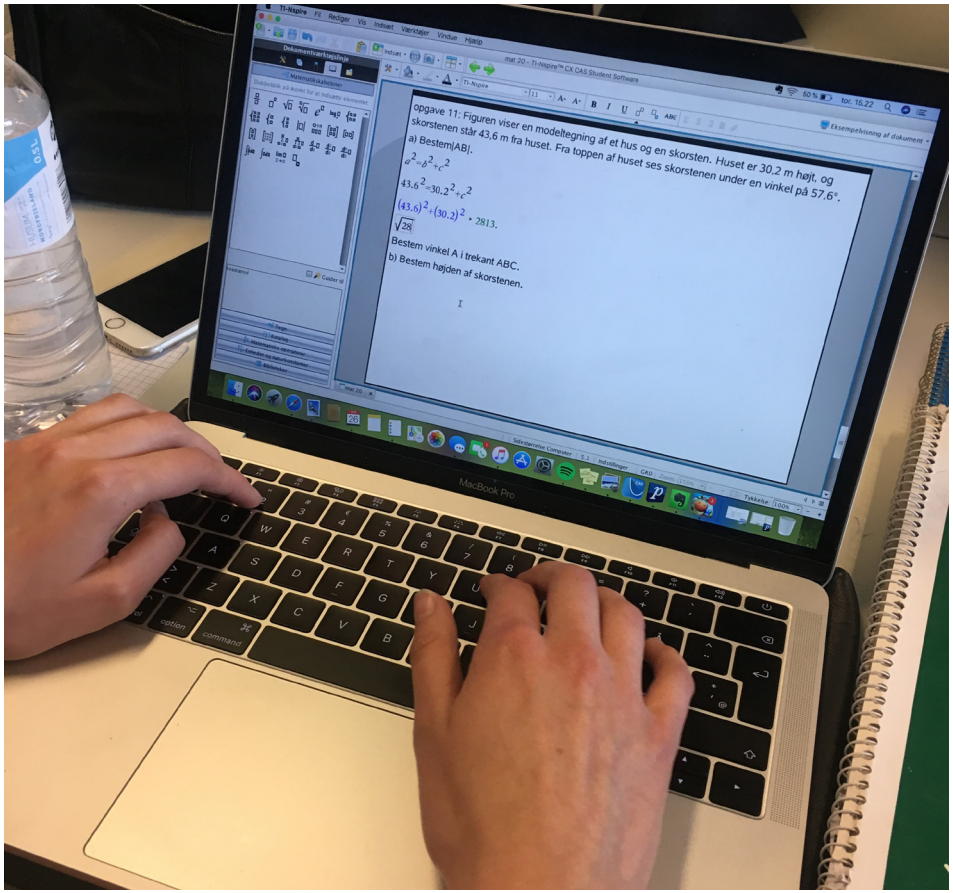
Top: Danish students talk to student in USA, Bottom: Students editing films

At some schools, gymnasium students used Google Drive to access their resources. Many had two folders for each subject – one with their own work in it, and another that the teacher added to and shared with the whole class. Students took notes on a laptop during class time and used the laptop to access the calculator software.

Google Drive student folder



Top: Students using technology in class, Bottom: Teaching with technology



Tinspire notes pages

In addition to these applications of technology in the classroom, many students were allowed to use computers, and the internet, in their examinations. Exam halls had cables running through them with power made accessible to each desk. Students could access any web page they had previously accessed, and could type their responses. Measures were taken to ensure students could not access banned pages, or communicate with other students during the exam.

Exam rooms power cables

Although technology was incorporated into most lessons Dureau saw that measures were taken to ensure that the technology was not a distraction. For example, in one classroom primary aged students were encouraged to dock their mobile phones as they entered the class.

Dock for mobile phones

RECOMMENDATION:

8. The use of technology that enhances student learning and enables students to connect with people around the world should be encouraged. Teachers need to be highly skilled in the use of these technologies. We should be

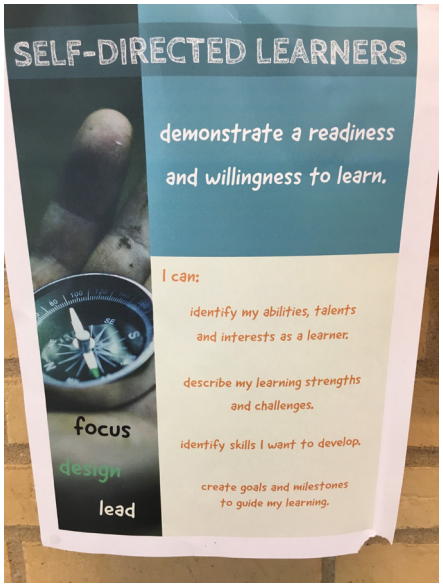
open minded to new ways of using technology in the classroom, including for assessment, in order to better prepare students to live in every advancing technological world.

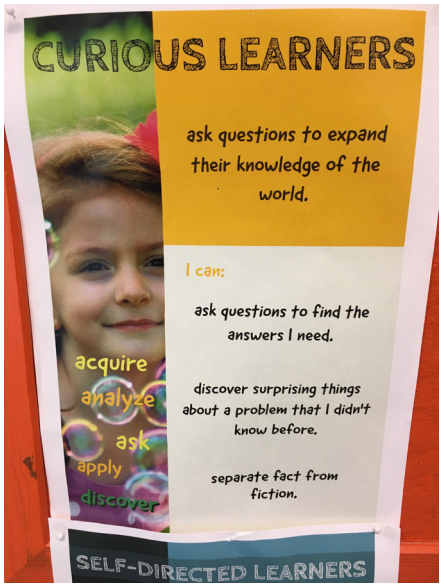
Learning, Assessment and Homework

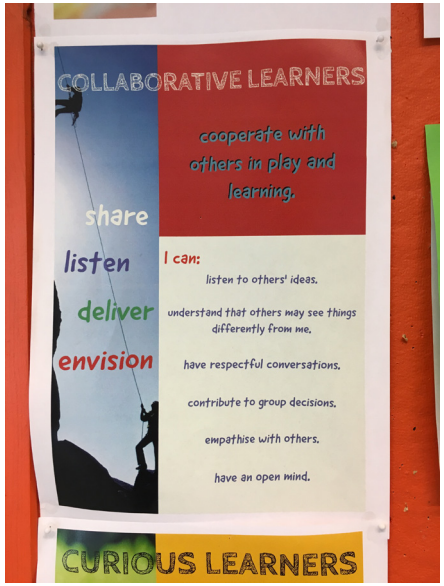
The apparently lack of stress and worry among Danish students about their future seemed to translate into a more relaxed approach to school work and assessments, from both teachers and students. When students were struggling with work, or failed to hand in an assignment on time, the default response from the teacher was to provide additional support. Rather than issuing a consequence, the teacher would work with the student to provide the help that they needed to complete the work. The main goal of education seemed to be to help the students develop into happy, well-educated young people who could grow up to contribute positively to society.

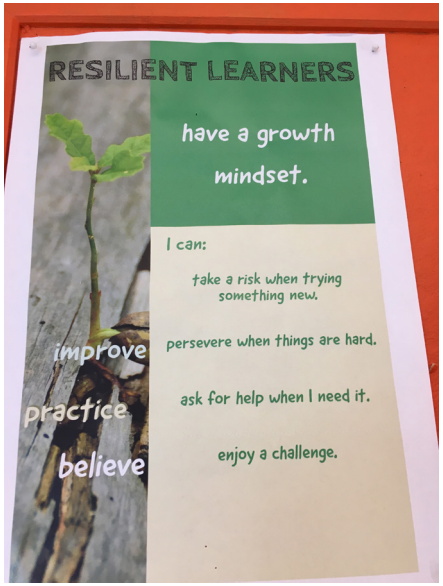
During the first ten years of schooling, Danish students are not expected to complete much (if any) homework outside of class time. Gymnasium students were often set assignments, which they could work on with their peers and seek help with from their teachers; however, it was not normal practice to have students completing hours of homework alone at home each night.

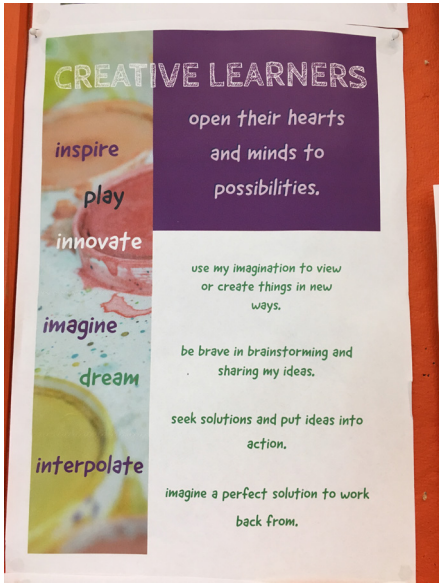
Danish students did not appear to be learning content for the purpose of demonstrating knowledge on a test. They did not appear to be attempting to memorise formulas, or dates, or facts. In











each classroom Dureau visited, students seemed to be learning for pleasure, for enjoyment. From what Dureau observed, there was not a great emphasis placed on testing at any level, or in any subject. The focus was on learning.

A range of measures are used to compare student achievement within schools, between schools, and between states and nations. Organisation for Economic Co-operation and Development (OECD) countries, including Australia and Denmark, interpret trends in Programme for International Student Assessment (PISA), which measures performance of 15-year-old students in reading, mathematical and scientific literacy. PISA assessments have shown that, in most countries, a student's or school's postal code remains one of the best predictors of success in education (OECD, 2018). Recent PISA data indicates that high-performing education systems, such as Denmark, tend to emphasise clinical education as part of initial teacher education. They provide opportunities for in-service teachers' professional development and put teacher appraisal instruments in place that have a strong focus on teachers' continuous improvement. Studies show that most schools in high performing countries enrich the professional learning of teachers with professional learning opportunities, and in these countries instructional leaders play an important role in formative teacher evaluation (OECD, 2018).

Other measures which provide data for comparison with other nations include the Progress in International Reading Literacy Study (PIRLS), and the Trends in International Mathematics and Science Study (TIMSS). In Australia the National Assessment Program - Literacy and Numeracy (NAPLAN) is an annual assessment for all students in Years 3, 5, 7 and 9 testing reading, writing, spelling, grammar and punctuation and numeracy. NAPLAN is commonly used to measure student achievement and growth, and measure the impact of school and system initiatives of student achievement.

Professor Stephen Dinham of the University of Melbourne warns about Australia's growing obsession with comparing our results on international measures such as PISA or TIMSS with those of other countries or cities. He notes that often students in countries or cities that perform well on standardized tests also often lack creativity skills, and that constant testing can have a negative impact on student confidence (Dinham, 2013). This is not the case in Denmark, where students consistently perform well on PISA and TIMSS, but are overall very confident, resilient and creative young people.

The Melbourne Declaration (Barr, et al., 2008) articulates two important goals for education in Australia, the first being that Australian schooling promotes equity and excellence, and the second that All young Australians become: successful learners, confident and creative individuals, and active and informed citizens. Measures have shown that while Australia performs well in comparison to other nations, there is a great degree of variation within Australia when it comes to student achievement, and that Australian students' social backgrounds have a greater influence on their achievement in Australia than in other high performing countries (Dinham, 2016). This is not the case in Denmark, where virtually all students have access to the same standard of education. Dinham (2013) warns that there is danger in focusing on academic measures alone, and encourages educators to consider the impact of education on both physical health and wellbeing in addition to academic performance.

Dinham, Ingvarson, and Kleinhenz (2008) propose that a major challenge in improving teaching is "developing structures and approaches that ensure widespread use of successful teaching practices: to make best practice, common practice" (p. 14).

RECOMMENDATION:

9. There's a quote by Dutch author Alexander den Heijer, which reads "when a flower doesn't bloom, you fix the environment in which it grows, not the flower". I recommend that the Australian education system takes a step back and looks at our approaches to improving student learning. Rather than focusing on the year-to-year results on standardized tests (of a new group of students going through the same old system), let's look at the

system itself and ask ourselves why we do what we do, and whether some of our practices are out of date.

RECOMMENDATION:

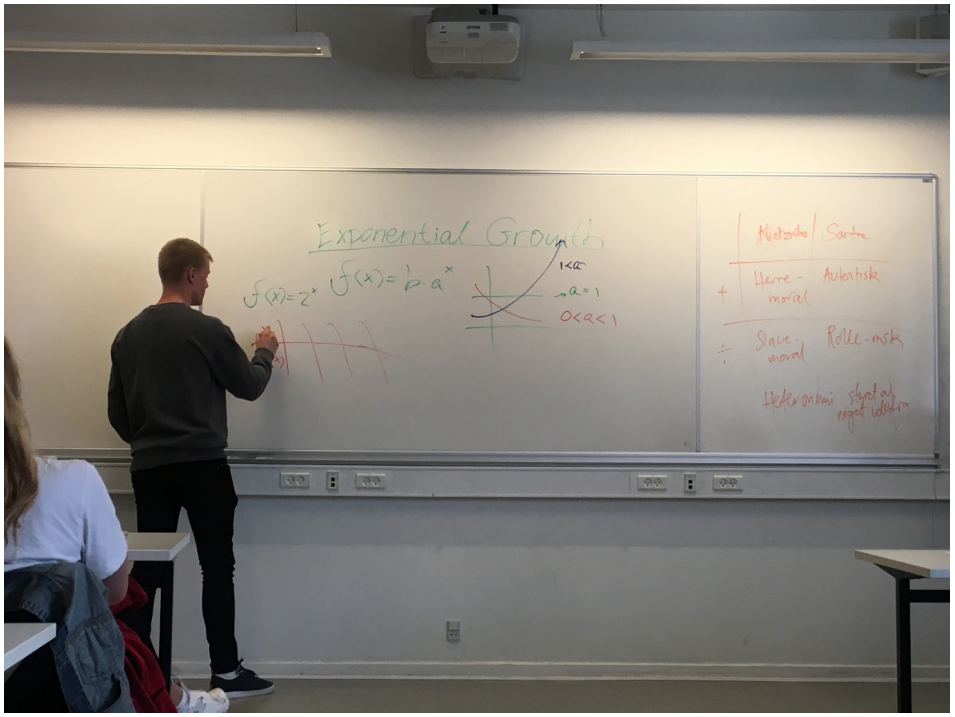
10. Educators should consider the validity and practicality of homework set outside of class time, as well as the nature of the work. For example, making use of the technology available, could "homework" be more collaborative?

Student Voice and Student-Teacher Relationships

Perhaps one of the greatest differences between the Danish and Australian Education systems is the relationships between teachers and students. This sort of trusting relationship which was very much based on mutual respect, was evident in Danish society between colleagues, friends, and parents and their children – not just students and teachers.

The term "Student Voice" did not translate easily into Danish, although Student Voice was evident everywhere that Dureau went. Student Voice is so embedded in the Danish culture, and in Danish education, that trying to describe to Danish students and educators what Student Voice was seemed quite trivial.

In Denmark, everyone's voice is valued. It is a highly respectful, and democratic society. The Danes don't think older means wiser, and likewise, they do not dismiss the thoughts and views of young people as childish or naïve. Students were active contributors in the classroom. Peer-to-peer teaching and class discussion was common, and in no way tokenistic. This level of mutual respect was evident from primary classes through to final year gymnasium classes. The incredibly respectful relationship between teachers and students was based on genuine and mutual respect, care and trust for one another.



Students teaching lessons

RECOMMENDATION:

11. All Australians, especially those in education, should be open to learning from students. Student Voice is not just about letting students speak, it is about listening to what they have to say and respecting it. Developing mutual, respectful, caring and trusting relationships between students and teachers is crucial to enhancing both students' academic and wellbeing outcomes.

HYGGE

Danes of all ages value a uniquely Danish cultural construct called “hygge” (pronounced hΩgə). The word was added to the Oxford dictionary in June 2017, and refers to high-quality social interactions. Hygge, sometimes translated as “cozy”, can be used as a noun, adjective or verb. For example, someone can hygge oneself, or events and places can also be hyggelige (hygge-like). Hygge is about taking pleasure in everyday things. Examples include a cup of coffee with a friend in front of a fireplace, or a summer picnic in the park. Hygge is thought to play a significant part in why Denmark continues to dominate the World Happiness Report rankings year after year (Helweg-Larsen, 2018), and perhaps not surprisingly, Hygge is also evident in Danish schools.

RECOMMENDATION:

12. My final recommendation is that all Australians should be more hyggelige. Education in Denmark is about a love of learning, the joy of living, and a focus on building positive relationships. Appreciating the simple pleasures in life may go a long way to improving outcomes for all Australians – young and old.

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