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 When you think about the United Arab Emirates, it is easy to focus on the glitz. I think of it as an experiment in what can be done when money is no object. Why not have the tallest building, lamborghinis for police cars, and build artificial islands in the shape of the world? But the real magic is behind the scenes. I expected to be dazzled by the place, but instead I was awed by the leadership. As a teacher, the UAE took me on a personal journey from jealousy to gratitude and inspiration.

**The Past**

They say it is a small country with big dreams. When the 7 Emirates of the UAE were unified in 1971 by the ruler of Abu Dhabi, Sheik Zayed bin Sultan Al Nahyan, there were few roads, 1 hospital, no universities and only 45 college graduates in the entire country. He said his people were the treasure, not the oil. The leaders have a stewardship mentality because everything is life or death in the desert.

The UAE learned the hard way not to depend too much on one resource. The rich pearls of the warm Persian Gulf, or as it is often called on the western shores, the Arabian Gulf, provided a new level of prosperity for the people until Japan introduced cultured pearls in the 1920s. The economy collapsed, and they would not be caught by the same trap when oil was discovered. Sheik Zayed and the other leaders funneled oil wealth into infrastructure with an emphasis on education.

More recently, Sheikh Mohammed bin Rashid Al Maktoum, Vice President and Prime Minister of the UAE and Ruler of Dubai has accelerated the pace of change with seemingly endless ambition. He is the driving force behind the spectacular rise of Dubai, and perhaps his greatest talent is for recognizing and mentoring talent in others. Dubai’s boom began in 2007 but was derailed temporarily by the Global Financial Crisis.

**The Present**

The UAE of today is a mini-United Nations with 350 languages spoken, 200 nationalities and Emiratis making up only 10% of the population. Dubai has one of the world’s busiest airports with 3.5 billion people within an eight hour flight. The world’s largest, Dubai Mall gets 80 million visitors a year - almost twice as many as visit New York City. The Dubai International Financial Center hosts 16 of world’s top 20 banks, 4 of 5 largest insurance companies, 8 of the world’s top asset managers, and 6 of 10 largest global law firms. Dubai is a sprawling monster of a city still growing in every direction. It is an architect’s dream because diversity in vision is clearly appreciated. If you can dream it, they will build it.

While some rapidly growing places can seem chaotic, however, there is a very careful vision at play in the UAE. The President, now Sheikh Khalifa bin Zayed Al Nahyan, and the Prime Minister set the agenda, and the ministries carry it out. There is always a unified goal and many benchmarks to make sure things are ahead of schedule. Starting in 2015, the entire government had a common goal each year. 2015 was the Year of Innovation, and every branch of government reviewed their mission around this idea. 2016 was the Year of Reading to prepare for the knowledge-based economic future. 2017 is the Year of Giving, and the next principle will be announced on the first day of 2018. One result of 2015’s innovation was the addition of eight new ministers, five of whom are women. The average age of the new ministers is 38, and the Minister of Youth is a 22 year old female who graduated from the new NYU Abu Dhabi campus. (They offer free training trips to the UAE for high school counselors.) Other new ministries include Tolerance, the Future, Climate Change, and Happiness.

There is an agency to promote gender equality, and the goal is to get to 50/50 across the board by 2050. They already have better ratios in government than the US or UK. If everything else is equal, the job or entrepreneurship grant goes to the woman. The Gender Balance Agency also helps with work/life balance with free nurseries at all work places. Parents get a salary for each child, and all schooling paid is for by the employer or the government.

The money used to come from oil, but today it provides only about 40% of the GDP. They see the end of oil production as not just inevitable, but welcome. The UAE was one of the first to sign the Paris Climate Treaty. In addition to a percentage of oil revenues being nationalized, there is a also a development fund to both provide venture capital and pay for the ambitious government programs. There are no taxes.

Most Emiratis work for the government, but since you can retire with 80% of your salary for life at age 42, many seek a second chapter in business. To make sure that the 10% of Emiratis don’t get swallowed up by the 90%, businesses require an Emirati partner with 51% ownership, except in the free zones. The free zones allow 100% foreign ownership with many other incentives. The result is that many of the world’s most influential companies have a branch in the UAE.

Masdar City is a free zone based on sustainable development with around 400 of the world’s most innovative companies trying out their most ambitious ideas. A testing ground, it is built to be sustainable in every way including social, residential, and educational. The city itself is built to encourage air flow so there is always a breeze in the narrow walkways which block direct sun but still provide natural light without heat. This passive urban planning seeks to solve problems with innovative design.

Suhail Mohammed Faraj Al Mazrouei, the Minister of Energy, explained 50@50: 50% clean energy by 2050 using solar, biomass, and wind. They will reduce CO2 by 70% and reduce demand by 40% with efficiency. In addition to cleaning their own house, they want to encourage sustainability worldwide with the Abu Dhabi Fund for Development. The mission is to model development assistance with sustainable energy to alleviate poverty.

In terms of water, the UAE has one of the highest consumptions per capita but also severe scarcity. They are developing more efficient water treatment and looking for creative solutions such as cloud seeding. In 2015 they created a prize for scientists to create new technology for this purpose, and this is a common theme. If they see a need but don’t have a solution, they open it up to the scientists of the world in return for cash. Today they are dependent on desalination, but this is not sustainable and so not acceptable.

Noura Al Kaabi, the Media Minister, explained that the UAE sees media as a key component of a knowledge-based economy. They want to train Emiratis to contribute to the GDP with media production, and so there is a cash rebate to film here. The evidence can be seen in films like Star Wars and the Fast and Furious, but they are also suited to create content for the Arab market. They don’t have a lot of game developers, and so now all schools offer coding at all levels. To get teens involved, the free Creative Lab has 12,000 members and provides free workshops and technology for content creation. One teen made a film about how he was bullied in school and won a film festival award. They cooperate with the Minister of Youth to document discussions with young people about ideas for the country. The government is very focused on empowering and genuinely listening to young people because they often have innovative solutions.

*Hedayah* means “guidance” in Arabic. This apolitical and non-ideological center connects policymakers to experts. Emiratis list tolerance as one of their core beliefs, and Hedayah seeks to intervene before radical ideas become action. They help governments around the world teach empowerment. They teach youth how to analyze arguments so they won’t be easily led. They believe critical thinking is the antidote to extremism.

Education has seen some of the biggest changes as they shift to prepare for a knowledge-based economy. The Minister of Education, Humaid Mohammed Obeid al Qattami met with us and a large group of Emirati teachers. During the discussion it was obvious that they have frank debate and a great deal of respect on all sides. They are revamping the entire system from birth to PhD with a carefully aligned, centralized curriculum. Unity of vision means that private schools have the same required curriculum. A track system filters out the top 10% after grade 5 and grade 9 into advanced, regular (includes things like business and tourism), and vocational/technology tracks. Advanced means more classes per week as well as higher difficulty. The system serves around 1 million total students, but only UAE citizens can go to public schools. This means non-citizens must pay for expensive private schools. There is discussion about making sure that all children in the UAE have better access moving forward, however. Many of the teachers are international, and they love American teachers because they are highly qualified, passionate, and under appreciated at home. They also send their teachers and students around the world to learn from the best. The constitution guarantees equal opportunity in education, and so everything is free and all schools are equally funded. Homework varies but the Minister wants to minimize it to maintain quality of life. They are developing a holistic plan that maps time spent on all activities including class, homework and extracurriculars. Data analytics will personalize remediation for each student to ease the burden on teachers. As the curriculum is developed, they will maintain a focus on moral education and the benefits of a multicultural society. The enthusiasm is contagious and is obvious in the schools. They have every possible resource and a sense that they are all shaping the future. They plan to be in the top 30 educational systems globally by 2030.

Ohoud Bint Khalfan Al Roumi is the new Minister of Happiness and Positivity. Why happiness? Because this is what we wish for our children. Happiness is the end goal of every project. The UAE does not want to be an economic miracle with a high suicide rate. She finds it interesting that it is seen as frivolous by some, and most governments will say things like well being. Of course to Americans it reminds us of our very first goals for the country, and yet it is clearly no longer a priority. Her Excellency jokingly said she spent her first two weeks as Happiness Minister depressed because it is such a big challenge, but now she sees the idea gaining traction globally, what she calls a Happiness Enlightenment. The Prime Minister insisted on the inclusion of positivity because attitude is everything. The goal of the ministry is provide every opportunity for the people to be happy, and they believe the goal of government is more noble than regulation and infrastructure. They started with 60 Happiness Champions trained by Harvard and Oxford to train others in promoting happy workplaces. Each ministry will have a happiness rating based based on an emoji meter to rate every transaction. The police in Abu Dhabi introduced a Happiness Patrol to give good drivers flowers and gift cards. They are changing the traffic lights to happy faces. All people in the UAE will be asked to regularly complete a Happiness Survey with a special version for kids. The Minister said they live in a rough neighborhood, and so it is easy to lose hope. The UAE wants to be a role model in all things including the power of positivity. Where ISIS promises happiness in the afterlife and advocates death and fear, the UAE advocates life and love. A happy person would not join ISIS.

**The Future**

 Sheik Zayed met with the Apollo crew in 1973 and was fascinated by space. The UAE Space Agency was launched in 2014 and was the first Arabic and Islamic country to do so. In 2017 they announced the 2117 Mission to Mars, and they believe they are ideally suited for the challenge because they are used to harsh environments. As an example of the extraordinary cooperation, the Space Agency is working with the Media Ministry so that the UAE’s version of Sesame Street is basing an entire season on space. The Education Ministry is introducing curriculum at all levels to support the space program. The Mars team are all Emirati with an average age of 27, just like 1960s NASA. 46% of them are women, as are 52% of engineering students. Students interested in science and engineering can earn a scholarship to study at the most advanced universities in the world with all fees and a salary paid for by the government.

 The most mind-bending part of our trip was the presentation by Dr. Noah Radford, Futurist in Chief at the Dubai Future Foundation. His mandate is to track global changes, to help the people of the UAE feel inspired and positive about change, and to test ideas and scale up the successes to benefit the UAE.

2016 was the point of no return for climate change because there is now more CO2 on earth than ever in history. The oceans are warming 15% faster than previously predicted. Antarctica is turning green. The Middle East and North Africa will have a 40% water shortfall by 2030. The UAE imports 85% of its food which is about 15% of GDP. This will rise to 65% of GDP within 20 years if there is no change because of the cost of food production will skyrocket with climate change. One meter of sea level rise is guaranteed by the end of the century, and it could be two. If this happens, all of Dubai at ground level would be flooded. The world’s worst refugee crisis is already due to climate with 12 million impacted, but we can expect 300 million by the end of the century. The UAE sees all of this as an opportunity. People will need solutions, and those who provide them will prosper.

The forces of change are accelerating. Artificial intelligence will replace 50% of tasks by 2025, including 78% of predictable physical work. 90% of the data ever generated has been created in the last 2 years. The most common job in the US is a truck driver, and all of these will be replaced in 5 to 10 years. 80% of all stock trades are automated already, and so the global economy is run by robots. These algorithms are so complex humans can’t understand them. Crispr is genetic modification made cheap and easy, and China is storming ahead on this front. They changed one gene in a dog to create massive muscular development, for example. In 2016 China admitted to modifying the human genome. As a result, they basically cured cancer. They have a 98% remission rate when cells are modified to fight the cancer cells.

The rise of populism is a consequence of the state of transition. It happens in places where people are afraid of change and seek a comforting answer. The world gets worse in the short term because the 20th Century is dying and the new possibilities are not yet mature enough to sustain society. Most major transitions take 20-30 years from invention to widespread use. There is usually only one or two waves of change at once, but technology impacts everything and so it is more dramatic. Dr. Radford sums up the two possible outcomes as Mad Max or Star Trek, and the Future Foundation is pushing for Star Trek. Bold acts of leadership will help people embrace a positive view of the future. The UAE is developing a protopic (proactive, positive utopia) vision. Pokemon Go is the perfect modern example because in the first year people walked 2.8 billion miles and lost 97 million pounds, which is the single biggest public health improvement in history.

The Future Agenda seeks to compress 45 years of progress into the next 10. One way is with the [Museum of the Future](http://museumofthefuture.ae/). It will help people adapt by educating them with fun, interactive exhibits to teach them about innovations. Some examples from the museum include a giant genetically modified jellyfish (thrives in warm water) crossed with mangrove roots which filter salt water to create living desalination. An AI smart mirror will check your health while you brush your teeth, and if your integrated system detects that people at work are sick from your email or Facebook, it will add vitamin C to your food automatically.

In addition, they seek to create future trends. Blockchain is the tech behind bitcoin. It eliminates the middleman in secure transactions. By 2020, 100% of UAE government transactions will be immediately available on Blockchain, for example access to a passport or college transcript. It will save $2 billion a year on paperwork and the system will be available for free to any partner government. Dubai has the world’s first 3D printed building, created in 17 days by 1 person. This will transform the construction industry. They could be afraid because construction is a major industry for the UAE. Instead, they will require that 25% of all buildings must be made from 3D printing by 2030. This both forces and rewards innovation and ensures the UAE will be a leader in new building technology. The Future Accelerator seeks disruptive ideas on an open platform. The government pays all expenses (including travel and lodging) for 90 days for the 45 slots in the building. They get mentorship and share ideas between the best and brightest minds. One example in residence is Z Space. This education software creates cheap virtual reality headsets that look like sunglasses to work with a digital, interactive curriculum. For example, students can dissect an animal for biology with VR, or learn to perform surgery or rebuild a car engine.

Dr. Radford’s four part platform for a brighter future includes embracing full automation of as much repetitive work as possible. We will transition to a 3 day work week because we have more people than we need labor. This will require a universal basic income, which is already starting in parts of Europe. Finally, countries should commit to massive investment in social and cultural programs with a focus on quality of life.

During this trip to the UAE for teachers organized by the DFW World Affairs Council and sponsored by the Emirati Ambassador’s office, we met some of the most influential people in the country. Every single one of them was demonstrably intelligent, engaging, and kind. It is not easy to leave a group of teachers speechless, but the postive outlook, effective strategy, and unified vision that is clearly dedicated to the benefit of the citizens is unique. When I returned I kept telling people I felt like I had visited the future. These visionary sheiks will be legendary for creating a global society based on a protopic vision. The question is why not, the answer is yes, and the time is now.

Illustrations:

{ ([MAP](http://www.npr.org/sections/money/2015/02/05/382664837/map-the-most-common-job-in-every-state) - most common job in each state over time)}

{creepy buff dog pic https://www.technologyreview.com/s/542616/first-gene-edited-dogs-reported-in-china/}

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* International Renewable Energy Agency - <http://adfd.irena.org/>
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* UNESCO Teacher’s Guide for Countering Violent Extremism - <http://unesdoc.unesco.org/images/0024/002446/244676e.pdf>
* ZSpace - <http://edu.zspace.com/>

**Videos:**

* Arabic Sesame Street - No’man the Camel - <https://www.youtube.com/watch?v=gBBPJq8qtD8>
* Dubai Museum of the Future Introduction/ Climate Change - <http://museumofthefuture.ae/>
* Dubai Museum of the Future Water - Living Desalination - <http://museumofthefuture.ae/water/>
* Emirates Mars Mission - <https://www.youtube.com/watch?v=ZHen3W3g0K0>
* Masdar City GenZ Global Youth Survey - <https://www.youtube.com/watch?v=B8KCWJOcuvI>

**UAE Contests:**

* Dream Car Art Contest - <http://www.toyota.ae/world-of-toyota/dream-car-art-contest/>
* Drones for Good - <https://www.dronesforgood.ae/>
* Future Accelerator - <https://dubaifutureaccelerators.com/en>
* Zayed Future Energy Prize - <http://www.masdar.ae/en/zayed-future-energy-prize/about-zayed-future-energy-prize>

**Videos by trip participant Courtney Ferrari:**

Sheikh Zayed Grand Mosque

<https://drive.google.com/file/d/0B1C9IxKHAKyndmlmZWRyMXd4Wmc/view?usp=sharing>

Art in Abu Dhabi

<https://drive.google.com/file/d/0B1C9IxKHAKynZm1CdUtYdzJBdFU/view?usp=sharing>

Masdar City

<https://drive.google.com/file/d/0B1C9IxKHAKync2ZHd1pqVWRkNzQ/view?usp=sharing>

Al Nokhba School

<https://drive.google.com/file/d/0B1C9IxKHAKyndV9xYVdBcVVySzg/view?usp=sharing>