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Embedding Sustainability within Organizations | BMSP7003D | Assessment 2

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Table of Contents

- 3. Executive Summary
- 4. Proposal to Embed Sustainability within the NYUAD Curriculum
- 5. Lessons Learned
 - 5. In what ways are we succeeding in Sustainability?
- 6. Stakeholders
- 6. Proposed New Curriculum
- 7. What should we be teaching?
 - 7. Minor in Environmental Sustainability
- 8. Sustainability Core Elective
- 9. Course Development and Approval Process
- 9. Benchmarking
- 9. Methodologies
- 11. Budget and Resources
- 12. Marketing and Communication
- 12. Timeline
- 12. Conclusion
- 13. References

Executive Summary

The Leadership Management Team is impressed with the findings of the November 2019 Sustainability Management Report, which assessed the current level of Sustainability at NYUAD. This identified that Sustainability is represented across the board in our teaching, research and operations.

Following on from the report, **the Leadership has agreed to support further Sustainability initiatives**. In turn this would strengthen our role as a university in the Middle East and ensure we are more visibly at the forefront of Sustainability in general. The timing of this couldn't be more aligned as every month that passes, the world continues to take a beating from Climate Change, most recently in Australia which has been ravaged by fires, floods and destructive hailstorms; and according to the World Economic Forum, the majority of people at risk from sea level rise live in just 8 countries - and they're all in Asia. (WEF 2019)

As a university, an important effort we can make is to **Embed Sustainability in our Curriculum** to strengthen our global impact as a university in 2020 and beyond. Our student population represents over 100 nationalities and many of our graduates have already gone into the world and are making a difference through innovative as well as simple sustainability efforts.

This proposal is the outline of a plan for embedding Sustainability in the curriculum in a more deliberate way and includes how we aim to achieve this; what resources will be required; expected timelines; and measure of effectiveness.

Proposal to Embed Sustainability within the NYUAD Curriculum

The topic and understanding of Sustainability is crucial to our planet's very survival but it is a complicated topic as the academic leaders in the field are not so easily known; it can be incohesive; and leaders in Climate Change such as Greta Thunberg, whilst inspiring and groundbreaking, only represent part of the picture.

As a university, we have many faculty experts in their own disciplines in science, engineering, social science and design working in areas of Sustainability but not as a collective and not specializing in Sustainability specifically. We could cluster faculty as we do with our research and take existing talent and content and consolidate it to provide more substantive Sustainability course offerings. Students taking such courses could be our Sustainability leaders and specialists of the future.

In addition, whilst we are a university and many of our community are aware of the UN's Sustainable Development Goals (SDGs), there is no posting of these goals around campus and yet, as a university and society, we have agreed to follow these. But we do see a number of initiatives that must continue: students pledging to become vegan, take the stairs and cut down on printing; our Plastic Fantastic Recycling Lab run by Engineering Design is open to the wider community; and our Solar House Team from across the university worked literally day and night to build an eco-friendly solar house adopted as a tourist destination as part of the DEWA Middle East Solar Decathlon. Whilst the decathletes did not win, their solar house will be featured later this year at Dubai Expo 2020.

Lessons Learned

The Solar Decathlon however did not come without its problems as students were given permission to participate but it was difficult for them to get away from classes at times as they were ultimately double-booked. However, the students felt the experience was worth the challenges with some openly indicating this was one of the most valuable and rewarding learning experiences of their undergraduate career.

It is imperative therefore to ensure Sustainability curricular activities are embedded in the curriculum to avoid any double-booking or conflict.

In what ways are we succeeding in Sustainability?

Student success stories in Sustainability are many and a recent example is the Zayed Sustainability Prize awarded to Chandan Mishra, Class of 2019 Civil Engineering graduate whose organic waste project at Bloom Nepal School won under the category of Global High School in South Asia. He wasted no time in using his education to make a difference in his home country and his project is one of ten that will share the prize award of AED 11 million/almost \$3 million (The National 2020) to really make a difference in Nepal. Chandan stated:

"Having been based in a developing country where the idea of sustainability is still premature, it is a matter of great pride for us to receive the Zayed Sustainability Prize in recognition of our efforts to promote sustainability in this region via our curriculum and project works. We are very excited about the

prospect of taking a step further and utilize the Zayed Sustainability Prize to promote sustainability efforts in our community through our project that involves active participation from our students, teachers, and people of our locality."

Stakeholders

What's interesting about Chandan's work is it involves more than students. If we are really going to make a difference at NYUAD and beyond, it is important to also include our other stakeholders, i.e our faculty, staff, community and partners who look to the University to be leaders in Sustainability. As we follow our Sustainability plan moving forward, we need to ensure they as part of our development.

Proposed New Curriculum

As a recent online MBA graduate in Sustainability Leadership, the world is your classroom. In this new world, there is an endless array of TEDx talks and Youtube inspirational videos from speakers and influencers you are invited to view but in exploring further, you can't always be certain who the world leaders in the field are. Embedding Sustainability in the curriculum and making Sustainability a topic in its own right is where you can further create these experts.

In addition, whilst a lot of material is available, knowing which cited research to review can be challenging. In science or engineering for example, you know who the leaders in their field are and whilst Sustainability is not a new subject dating back to the earliest instance found in The Limits to Growth (1972), (Brief History of Sustainability 2016) predating the Brundtland Report 1987 UN-commissioned study, it is not clear

who the leaders in academia are. It is important therefore to be guided to the right material by our faculty experts.

What appears to be missing from Sustainability courses is fundamental science knowledge. This could be included in for example a module on How to Capture Greenhouse Gases? This area is already covered as part of our green cement research and therefore it could be possible to include this in the undergraduate teaching in Sustainability.

What should we be teaching?

Minor in Environmental Sustainability

We could dare to be bold and begin by transforming our Environment Minor into a Minor in Environmental Sustainability. We have many faculty experts already and the Minor is affording the opportunity for connections among fundamental scientific and engineering concepts, economic and sociological forces, and literary and artistic endeavors (NYUAD-Env Minor 2020). However, could we do a deeper delve into Sustainability and be less broad with faculty building on the most notable publications, relating to the latest research and highlighting leading experts in academia to create a more sound knowledge in Sustainability?

The curriculum and course material for taking a track in Sustainability could retain the following topics:

The Biosphere

Global Climate Change

Coastal Urbanization and Environmental Change

Where the City Meets the Sea: Studies in Coastal Urban Environments

And topics in the following areas could be added:

Greenhouse Gas Management

Food Security and Urban Agriculture

Renewable Energy Sources

The Circular Economy and Economics

Waste-Water Management

On the topic of Greenhouse Gases for example, as an MBA graduate in Sustainability, there is often the expectation that you understand the science. From my own experience, focus on aspects of science in Greenhouse Gas Management, Renewable Energy and Water Management would have strengthened my impact as a graduate to become more expert in the field.

Sustainability Core Elective

An additional option could be developing a 7 week Sustainability elective in the Core Curriculum open to all NYUAD students interested in Sustainability. Most faculty are expected to teach in the Core and given the opportunity to develop courses in their expertise. Again, understanding more deeply subjects such as waste-water

management; or expanding the Food Security course usually offered over the three weeks J-Term course, Water, Energy, Food Nexus.

Course Development and Approval Process

Faculty would be invited by their Dean to contribute courses for the new Sustainability curriculum and to develop their courses accordingly. The course would be presented to a Curriculum Review Committee of faculty experts, the Core Curriculum Committee and/or the Undergraduate Curriculum Committee. Given the need to make this more inter- and multi-disciplinary to ensure our success, the Academic and Core Curriculum Deans should be part of this approval process.

Benchmarking

As one of NYU's degree granting campuses, can we piggyback on their curriculum? The College of Arts & Science's commitment to sustainability is most directly realized through its educational mission. Students address challenges facing the environment through course work, opportunities for research and **internships**, and community engagement. In addition there are opportunities for **scholarship** for undergraduate students doing research on waste through the NY state chapter of SWANA (Solid Waste Association of North America). (CAS 2020) These are all areas we can expand on and we can look to establish a similar local scholarship.

Methodologies

A new framework for embedding sustainability into the business school curriculum by Petra Molthan-Hill (2017) is inspired by key concepts, guidance and a framework on

how to embed sustainability into the curriculum. This asks, what structural approaches can be taken to embed sustainability into the curriculum; how it is taught; what should be taught; and what have been identified as core skills and knowledge is sustainability.

Approaches include:

- Piggyback approach where you add sustainability-related material to an existing course or module such as a case study or a seminar. This is a good starting point.
- Digging deep approach, which is easy to implement as it offers a new elective/option than change the existing curriculum. Another good starting point.
- Mainstreaming approach, is applying sections to the appropriate section. At NYUAD this could be circular economy to economics for example.
- Focusing on the broader curriculum requires new structures. The online course of sustainability practice certificate at Nottingham Trent University focuses on Sustainability and food. This allows for all disciplines to access the course and understand common sustainability challenges to be solved in collaboration.

Another approach, according to the Green Academy report, is Embedding Sustainability Into the Higher Education Curriculum: Lessons From the UK's Green Academy Institutional Change Programme (2014). Like NYUAD, universities are facing increasing pressures to change the educational programmes they offer in order to make graduates fit for future citizenship and employment in the 21st Century.

The Green Academy report offers an overview of how universities set about changing policy and practice in Sustainability in order to scale up existing activities, and how they have extended the reach of learning for Sustainability into areas of the curriculum where there is little or further development is required.

Since the report in 2014, curriculum reform and innovation have taken place in many universities in the UK and elsewhere in the world in response to such pressures and policy developments including universities of Aberdeen, Southampton and Keele in the UK, Melbourne in Australia and British Columbia in Canada.

The NYUAD Mission Statement, states that NYUAD advances NYU as a model university for the 21st century and contributes in multiple ways to the development of a sustainable, knowledge-based economy in Abu Dhabi and by embedding Sustainability in our curriculum, we can further achieve this.

Budget and Resources

Vice Chancellor, Mariet Westermann has made it her goal to put Sustainability at the forefront of NYUAD's mission and agenda empowering the academic Leadership accordingly and will provide additional support and resources as needed. In preparing the budget, this will include staffing, materials, preferably repurposed and appropriate use of space.

We already have expert faculty who can teach subjects in Sustainability specifically. However taking a faculty from one course to teach another requires the original course

to be taught by someone else and this should be accounted for in our strategic planning.

Marketing and Communication

In order to attract students to our courses, we need to ensure opportunities to be part of our new curriculum in Sustainability are marketed. A robust communication plan is required to ensure all stakeholders are fully aware of their role as we transition to Sustainability. Our webpages should reflect this; we could advertise and promote at events such as Candidate Weekend; we can re-market stories of Sustainability success; and develop new stories with Public Affairs. We need a common language including small buzzwords of how to achieve this greater purpose of embedding Sustainability in the curriculum.

Timelines

Course development can take anywhere from 3 months to 3 years as is the case with the program in Bioengineering. However, we need to show results quickly, which is key to getting people excited by our progress and this should be tied to our ongoing communications.

Conclusion

NYUAD is indeed addressing major goals of Sustainability in educating our students to be game changers and face the challenges of the 21st century. These future leaders are innovate, inventive and entrepreneurial, and understand how technology is integrated within society. However, we can develop experts and specialists in

Sustainability by embedding Sustainability in the Curriculum. Chandan Mishra is a wonderful example of how he and we are succeeding and our measure of success is being able to demonstrate and tell more stories like his.

With support from the Leadership, NYUAD is poised to adapt the Sustainability curriculum to a very high level following the outline above and we look to developing our Sustainability curriculum further to be even more distinctive and inclusive for the future.

References

A Brief History of Sustainability 2016 [online].

https://www.huffpost.com/entry/a-brief-history-of-sustai_b_12787800 (Accessed 1 February 2020)

A new framework for embedding sustainability into the business school curriculum by

Petra Molthan-Hill 2017 [online]. http://irep.ntu.ac.uk/id/eprint/1085/1/218987_1674.pdf

(Accessed 1 February 2020)

Embedding Sustainability Into the Higher Education Curriculum: Lessons From the

UK's Green Academy Institutional Change Programme [online].

https://www.researchgate.net/publication/301392053_Embedding_Sustainability_Into_the_Higher_Education_Curriculum_Lessons_From_the_UK's_Green_Academy_Institutional_Change_Programme (Accessed 1 February 2020)

NYUAD Bulletin 2019-20 [online].

<https://nyuad.nyu.edu/content/dam/nyuad/academics/undergraduate/bulletins/bulletin-2019-2020.pdf> (Accessed 1 February 2020)

NYU College of Arts & Science Sustainability 2020 [online].

<https://cas.nyu.edu/content/nyu-as/cas/student-life/sustainability.html> (Accessed 1 February 2020)

Sustainable Development Goals [online]. <https://sustainabledevelopment.un.org/sdgs> (Accessed 1 February 2020)

The majority of people at risk from sea level rise live in just 8 countries - and they're all in Asia 2019 [online].

<https://www.weforum.org/agenda/2019/11/coastal-flooding-major-risk/> (Accessed 1 February 2020)

Zayed Sustainability Prize 2020 Winners Announced 2020 [online].

<https://www.thenational.ae/uae/environment/zayed-sustainability-prize-2020-winners-announced-1.963752#13> (Accessed 1 February 2020)