

# A Proposed Model of a Future University in the Era of the Artificial Intelligence Transformative Society: From Why to How\*

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## Abstract

This paper is an attempt to circumscribe briefly the evolution and the revolution of the Global Society in which we live (usually called the Transformative Society) that embedded a huge change in technologies, digitalization, and knowledge-based economy. We need to develop future oriented curricula for “a new university paradigm” that adjust dynamically with the needs of the society and the employers to make the students straightforwardly ready from an output of the new model of university to a swift productive input for the employers. This will help the economy to be more competitive and improve the wellbeing of the Citizens in terms of health and better quality of life. While a traditional University sells degrees, the New Model of University we are offering sells skills for students and prospective employees who want to be life learners equipped with the cutting edge technologies and knowhow. We will use coop programs, in-field learning, and international internships to exchange with worldwide student through a wealth of network.

## Keywords

Transformative Society, Traditional University, Future University, New Teaching Curricula, Sustainability, Competency-Based Teaching, Soft Skills, Coop-Programs, In-Field Learning, Cross-Culture Tolerance, Interdisciplinary Curricula and Research

## 1. Introduction

Most innovative universities attempt to perform their traditional tasks better: quicker, cheaper and more flexible via distance learning. Distance teaching, re-

\*This paper was written during my tenure at PMU.

distance education, online learning embraced by new universities mean practically the same thing with some subtleties to discuss later. They enable learners at different levels to receive instruction and education without being physical in a classroom. This first advantage by its own gives flexibility for the learners and the instructors. Distance classes might offer a more comfortable learning condition. For those who are following programs on a part time basis, they can continue their profession and ensure career advancement. Besides, some students might lack concentration and focus in the morning and could be more productive in the afternoons and for some students at nights. This teaching offers students and instructors more flexibility to adapt their schedules at a time of their convenience. Students can exchange emails with their instructors whenever they need to whereas in physical classes, some students will not share their learning process in a class of thirty students. Flexibility is indeed the key advantage of distance learning. Distance learning has demonstrated its flexibility and convenience during the COVID 19 pandemic with socio-economic advantages. At the same time, it allows students to manage their time (even for procrastinators) and use the preexisting learning materials at any time allowing for faster learning outcomes after a short period of skills development such as online research, video conferencing, discussion boards in which skills will be needed for the job market. This medium of instruction requires less fixed costs for the university in terms of facilities, salaries, air conditioning, maintenance which reflects on lower tuition fees for the students who, on top of that, will save on the transportation and food to name the least. Distance learning is cheaper for the universities and for the students with similar or better outputs. This affordability increases the technological literacy level and reduces the cost of education per capita for a better economic competitiveness.

Not often a country sees a future university as catalyst to transform its socio-economic status. In this inventory we will focus on those recently-started universities or how should universities reform their vision and mission to target an explicit societal evolution. We propose a “Five Dimensions for Innovative Universities” model which will be tackled below.

### **1) Innovative Domains/Disciplines:**

On the basis, its recent technological urgency should go to these disciplines: Nano Technologies, Grapheme, Quantum Computing, Artificial Intelligence, Biotechnology, Medical Technologies for Endoscopic Interventions, Cellular Research into the Genome and Cancer Research, Space Excursions, Gravity and Meteorology, etc.

### **2) Two Tier Educational Focus:**

The vocational and the Scientific Perspectives are of paramount interest. By discriminating these two accents it increases the chance to optimize both the professional and research priorities. Many universities are in the process of diverging towards a full two tier system for Higher Education.

### **3) Increasing Impact of Status on the International Benchmarks and Rank-**

**ing Indices:** Reputation is an important attribute for universities to acquire and to exploit in marketing, attract students and raise funds. Important is the long term quality awareness of institutes for achieving student appreciation, societal recognition and international comparative ranking status.

**4) Technology-Enabled Teaching/Learning:** It offers facilities like Web-Based Learning Support Systems, MOOCs (Massive Open Online Courses), Mobile-Learning via Smart Phones, etc. Both teachers and students need a permanent upgrading of media literacy skills including the etiquette on social media, blogs etc. Its epitome label is Campus Technology.

**5) Pedagogy for AI/ICT-Supported Didactics:** Mediated course delivery and even remote assessment techniques demand for adequate pedagogical models that allow both teachers and students to adapt the participation to the instructional processes to the more dynamic interaction as allowed by the new web/cloud-based media. Gamification, Simulations, Story. Telling and many new formats/genres offer teachers to engage students and create co-ownership of their own learning processes.

Based upon the upper five innovation dimensions, any newly detected Future University can be classified in terms of high/medium/low ambition. As expressed earlier, the goal of this concept study is a blueprint of a New University that prepares students for the future technology and to be efficient future leaders of the new future transformative society. Its Mission Statement still needs to be worked out, however needs to be ultimo compliant to the new trends. The three added-value propositions are:

- 1) Readiness for the new society.
- 2) Improve the competitiveness of the economy.
- 3) Improve the quality of life and the well-being of the citizens mastering the soft skills such as peace and tolerance, flexibility, dealing with ambiguities in situations of conflict.
- 4) Sensitive to Ecology and Earth' sustainability.
- 5) Students' ability to acquire, create and work with new technologies depending on the needs of the society in which they live through research an life-long self-training and with interaction with the other societies.
- 6) Develop innovative leadership and entrepreneurship skills which will be transformed into technologies targeting the societal needs as per the last global goals of the United Nations.

Starting a new university needs the orientation between becoming a 1) "new old university" or becoming a 2) "new new university". The second one has the advantage of not necessarily complying with the obligatory formats of the classical universities and can thus make a steeper incline in reputation.

Good example of the first category are the numerous Polytechnic High Schools all over the world, which needed about two decades before becoming recognized as "full universities", even when national authorities fully accredited the university status.

A good example within Category 2 is the Future University Hakodate (FUH, hereafter). It was established in the year 2000 and up till now makes a yearly progress in reputation and student satisfaction. It is building its worldwide network of Exchange Agreements. A similar model for close synergy for any targeted Future University could be adopted. Another feature of FUH is its CRC: “Center for University-Society Relations and Collaboration” (CRC, hereafter).

The “CRC” center needs to monitor and connect various joint research and trustee research programs with business enterprises, local governments, industrial organizations and citizens’ organizations. To accomplish the University’s mission to create a future society suitable for the mid-21st century, the CRC center encourages and supports faculty and students to work positively as members of their local community (KSA 2030 Vision).

The “Internet Institut Wien” is an Austrian-based Think Tank with a mission to establish top-notch social innovation hubs for individuals and institutions focused on building better society through science and technology. Its Academic Programed (AP, hereafter) “Building innovation and technical capacities of universities” focuses on “Future University”; The strategic focus of AP is on RTI (Research, Technology and Innovation) areas.

## 2. Motivation for the Proposed University Model

It is well known by economists and statisticians that the rate of unemployment is directly and positively correlated with the economic growth of the country and the wellbeing of the society. For a majority of people, the rate of unemployment is related solely to the lower level or even to the absence of education. In this era of a tsunami of new technologies and the prominence of artificial intelligence that took over the automated work, the average unemployment rate increases in developed and developing countries almost alike. The deployment of robots and the machine learning do not affect only the under-educated people, it affects also highly educated people. Indeed, robots are able to do surgeries with more accuracy and no fatigue for long surgeries which affect the white collar. Similar examples could be observed in law and in education systems.

In different countries including the developed countries the unemployment affects the university graduates and not only the non-educational population. Employers have been advocating for a long time that there is a huge gap between the output of the universities and the need of the industry. The industrial input, the university graduates, is not productive at the recruitment and lacks a lot of skills requested by the industry. The gap has never been managed adequately by the universities to offer a better preparation of the student to the needs of the workplace. These students could remain unemployed for years, which is a social burden. At a point of time, this high-level unemployed graduate could be shifted to depression, drug addiction, illegal immigration, delinquency, and even criminality especially in countries with a low system of coaching these unemployed population. While the policy makers and the statesmen cannot manage the situ-

ation any better, the problem needs to be solved at its roots. The educational system needs to follow the need of the industry and not the opposite. To make the output of the university congruent with the input needs of the industry. We propose a model of a university that minimizes this gap.

Since recent times, a series of critical issues are being seen to plague individuals all over the world, such as climate change, war and terrorism, and economic and health crises. What makes the current situation graver is the fact that these issues are only a small fraction of a multitude of problems faced by modern societies of today.

Moreover, the lack of attention being given to appropriately resolving and mitigating these issues means that these problems will only be seen to increase over the course of time. Therefore, there is a dire need for societies to conduct a transformation through adequately addressing these issues. For example, there is a strong requirement for the development of guidelines and recommendations that promote values of peace building, tolerance and diversity among individuals hailing from different ethnic and social backgrounds. A majority of global issues such as violence and terrorism result due to a lack of tolerance for societies or cultures other than one's own. Thus, it is clear that a transformative society is to be achieved by targeting changes in the desired areas, so that the growing presence of global complications is greatly reduced.

However, the positive paradigm shift of a society with respect to these contexts can only be carried out through asking oneself a series of questions. For instance, which innovative sectors are to be targeted for working towards common solutions? How can a sustainable economy be achieved and what is the role of scientific and other professional fields in this regard? Lastly, and most specifically, what is the role of educators and researchers in tackling these persistent problems? Such questions are a few among the many that should be answered so that a transformative society may be accomplished.

To meet these aforementioned objectives, this paper has presented a proposal to develop a model for a new university for transforming youth into efficient leaders for directing the growth of a new economy, which is digitalized, knowledge-based and technology intensive. The proposed university will provide highly diversified undergraduate degree programs to further the development of the economy in every sphere and all areas of every sector available. It is further aimed that this university will provide tertiary education that emphasizes the importance of interdisciplinary learning and the significance of practically implementing the learned conceptual knowledge. Through accomplishing these motives, it is believed that "Future University" (FU, hereafter) may be brought one step closer towards achieving the goals outlined by the new scheme we suggest with respect to the educational sector.

As the most illustrative symptomatic examples of countries that need our model, Bahrain, Saudi Arabia, Kuwait, Libya, to mention the least have to complete a transformation from an oil-based economy into one that is knowledge-

based. There is a significant need for educational reform to be brought with respect to the tertiary education sector in these countries and others which rely on only one factor such as tourism for Tunisia, Morocco, Greece, Portugal, Thailand, etc.

Through this, there will be an extensive focus laid on developing the skill sets available to citizens; thereby, enabling them to adequately compete with their peers in other countries in myriad disciplines. Furthermore, enhancement of the tertiary educational sector will serve the purpose of improving the social conditions of in the post-Arab Spring era, which is an objective of the Saudi Vision 2030 scheme according to Kinnimont (2017). **Figure 1** summarizes the proposed concept.

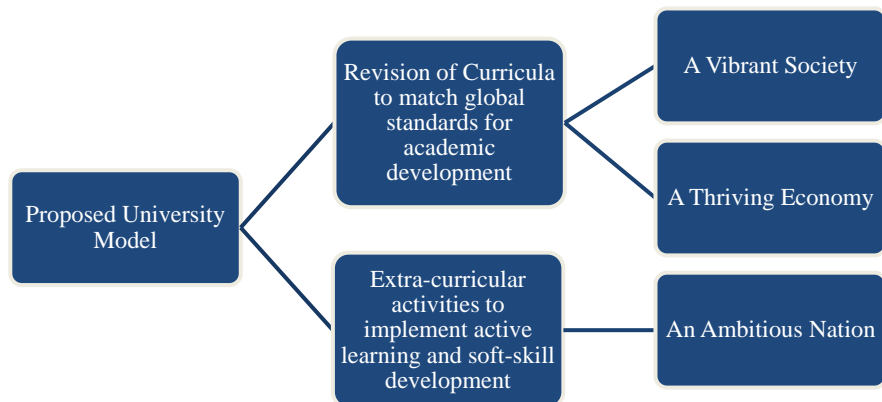
### 2.1. Digitalization

Nevertheless, one answer to the aforementioned questions exists in the form of providing quality-based education pertaining to science and technology fields (STEM). Globally, many active efforts are being made to conduct cutting-edge STEM-related research in exciting areas such as nanotechnology, artificial intelligence and the health sciences. The novel solutions provided by such research are highly relevant in resolving current global issues such as environmental sustainability, health and safety. Furthermore, effective solutions could be raised using technology with respect to promoting tolerance and diversity all over the world. For instance, the recently emerging cloud computing technology enables individuals all over the world to remain connected, no matter what their geolocation is.

Additionally, the rise of social media applications means that people hailing from different socio-ethnic backgrounds are able to learn more about each other, thereby promoting a higher level of tolerance amongst them. Therefore, there is a high need to expand the scope of STEM-related research, through applying it in a range of interdisciplinary fields for the benefit of humanity and society at large. Digital technologies could further be used in order to increase profits for businesses and revenues in high-potential countries. For this reason, this proposal presents an idea to establish a new university for teaching students through employing digital methodologies and encouraging them to apply their learning to a variety of digital applications in their society.

### 2.2. Knowledge Based Economy

The above section highlighted that digitalization was extremely crucial in order to effect changes in a transformative society. However, there is a significant barrier seen with respect to expanding the scope of STEM research. Many universities offer rather outdated STEM courses that are aimed at addressing the immediate needs of society instead of targeting their future ones. Furthermore, there is a lack of interdisciplinary teaching within these institutions, due to which students fail to comprehend the widespread applications of their chosen field of study.



**Figure 1.** The proposed model of a future university.

An educational revolution is greatly needed in higher education institutions through employing interdisciplinary approaches for teaching. Additionally, there is a strong need to replace traditional disciplines with newer ones that are in line with current global developments in technological and knowledge-based innovation. For these reasons, the proposed university model will aim to prioritize innovative learning through providing current disciplines that are relevant in the context of real-world applications and through employing an interdisciplinary learning approach. In this way, students will be enabled to gain a wholesome understanding of thematic concepts and their relevant applications.

### 2.3. Technology-Intensive Economy

As discussed earlier, there is a strong need to transform society into one that values technological innovation as its pride and backbone. This can only be carried out through extensively focusing on STEM-related research in a range of exciting fields. The proposed university model will prioritize technological innovation in all the disciplines over every other factor of interest. An interdisciplinary approach will be used in this context as well, through recruiting personnel from different disciplinary backgrounds to undertake research together. In this way, the enrolled students will positively contribute their learning to society and enable it to transform into one which is technology-intensive. Through the above means, the outcome objectives of our model target to achieve a “thriving economy”, “a vibrant society” and an “ambitious nation”.

## 3. Traditional University

### 3.1. Teaching Disciplines

Most if not all of the current universities especially in emerging markets utilize a highly traditionalist approach to teaching rather than adopting teaching methodologies employed in developed nations such as the United States. More specifically, these universities focus on providing discipline-based education rather than education which is thematic in structure.

Thematic teaching employs an interdisciplinary approach, whereby different

disciplines are all integrated into teaching a central chosen theme. A thematic approach to teaching is widely beneficial due to its ability to provide students with a more wholesome understanding of how different disciplines work together. In discipline-based learning, students are not provided the opportunity to learn about disciplines complementary to their own. Therefore, there is a need for traditional universities to shift from employing discipline-based teaching to providing theme-based education.

Furthermore, a majority of higher educational institutions rely on techniques such as rote memorization for teaching. Consequently, there is not much room left for students to freely think about the concepts presented to them and question their own conceptual knowledge. As a result, they suffer due to being unable to appropriately apply their learned concepts in myriad real-world applications. This is obvious in terms of the vel of unemployment among emerging countries citizens, who are unable to obtain job positions due to a lack of adequate skills (Al Zahrani & Ismaiel, 2018). The increasing population of incoming migrants further narrows job prospects available to Bahraini, Saudi, Emirati, Kuwaiti, Omani citizens. Therefore, there is a critical need for the youth in the Gulf countries for example to be educated in accordance with global standards, so that they may be able to compete effectively in various markets.

### **3.2. Disciplines Currently Taught at Traditional Institutions in Emerging Countries**

Although there are few universities that cater to teaching a diversified range of fields such as health sciences, engineering and technology, the presence of such institutions is few and far in between. As an explicit illustration of the aforementioned statement, according to the Vision 2030 report (Freer, 2017), no Saudi institution for higher education is ranked on the list of top 200 universities globally, other than King Saud University, King Fahd University of Petroleum and Minerals, and King Abdulaziz University.

Traditional universities teach disciplines on the basis of addressing the immediate needs of society, rather than their future ones. This is problematic in terms of catering to issues such as global sustainability, which need effective long-term plans in place in order to be resolved. As an example we can build upon it for other Gulf countries and African countries, the list of traditional disciplines seen at current Saudi universities has been highlighted in **Figure 2**.

### **3.3. Countries Witnessing Growth Have Future Vision**

The development of a world-class higher educational institution will greatly aid in enhancing the level of competitiveness of the country such as Singapore, Malaysia, South Korea and China. These countries were highlighted due to their strong utilization of educational tools to bring about economic reform (Hallinger, 2010). Therefore, it is important to look to such countries as a source of inspiration through which the competitiveness of countries using old model of universities may be enhanced.





**Figure 2.** Traditional disciplines offered (Source: Vision 2030.gov.sa/en).

### 3.3.1. Singapore

Specifically, Singapore has gained renown due to its incorporation of educational reform within its national development strategies (Paine & Schleicher, 2011). For instance, Singapore chose to implement educational policies that closely emulated those followed in the West by emphasizing on providing learner-centric information, creative teaching methodologies, valuable ICT and AI facilities and professional learning communities. Consequently, Singaporean students were seen to perform extremely well in international examinations as compared to students of other nationalities. The effectiveness of Singapore's implementation of its educational policies in institutions such as the National University of Singapore makes it an ideal model to be emulated by other countries where creativity regarding education is greatly repressed. Singapore has a significant future vision and its aim to digitize society through the use of ICT and AI facilities is clearly seen through its accomplishment of the Vision 2020 objectives (Figure 3). Specifically, Singapore achieved its goal of "transformative education" through reforming existing educational policies as highlighted above. This was carried out through the use of multi- and cross-disciplinary approaches to learning and incorporating concepts of environmental sustainability in coursework. Additionally, research-intensiveness was heavily emphasized, as seen by the National University of Singapore, which is considered to rank among the world's best universities for research.



**Figure 3.** NUS Vision 2020 (Source of inspiration: Singapore Vision 2020).

### 3.3.2. Malaysia

It was additionally seen that Malaysia worked towards developing a “Vision 2020” plan to enhance the level of its national development (Figure 4). Initiated in 1980, this plan relied on education reforms as the primary means through which socio-economic progress may be achieved. To this end, the plan incorporated education reforms that had been implemented globally and established a series of SMART schools for enhancing educational standards through the provision of ICT and AI facilities (Malakolunthu, 2007; Tabrizi & Kabirnejat, 2017; Taleb & Hassanzadeh, 2015).

Therefore, a comparison may be made between Singapore and Malaysia, in that both these nations relied heavily on ICT technology and AI algorithms and machine learning to revolutionize their educational sector. Similar implementation of ICT and AI facilities at the proposed university in Saudi Arabia will greatly aid in enhancing the educational progress in this regard. Therefore, it is clear that Malaysia aimed to accomplish its objectives set through Vision 2020 by improving its academic systems, introducing innovation and revising existing curricula.

### 3.3.3. China

It was discussed earlier that Singapore closely emulated Western educational models to design its own educational reforms. Similar patterns were noted in China as well; where it was seen that selective policies were borrowed from Western ideals for initiating educational reform (Tan, 2015). Specifically, traditionalist learning approaches that relied on drilling, passive learning, textbook knowledge and rote learning were eschewed in favor of those that depended on active learning and student-centered strategies.



**Figure 4.** Malaysia educational vision 2020 (Source of inspiration: Malaysia educational vision: 2020).

Additionally, extra-curricular programs were incorporated in study programs in China so that students did not experience burnout. Significant governmental expenditure on enhancing the tertiary sector was seen, since there was a strong awareness regarding the importance of highly developed educational facilities. Additionally, a special emphasis was seen to be laid on establishing vocational training institutes so that individuals could attain skills specific to the jobs they were pursuing.

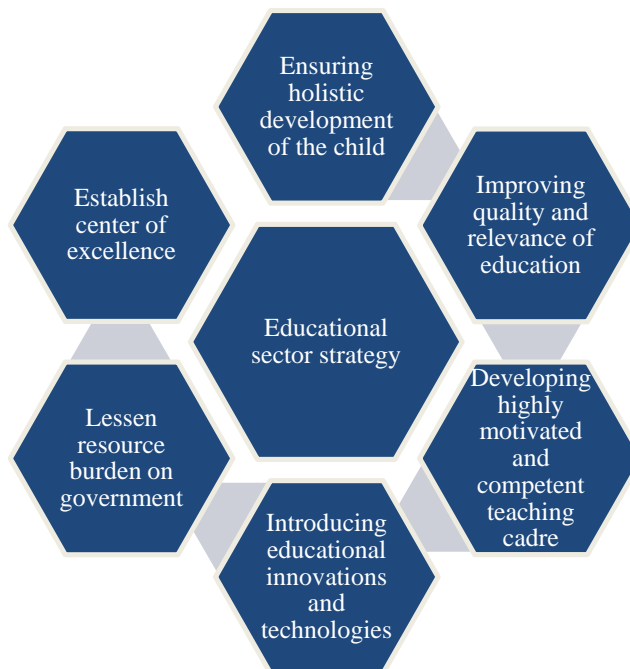
These policies would be implemented in our proposed university model so that students could attain education of a comparatively higher standard. The tendency of students in the traditional university model is to rely on passive learning strategies and the failure of teachers to inculcate an active learning environment had previously been highlighted (Alrabai, 2016).

To counter these shortcomings, in our model, we emphasize that a modern university has to conduct joint training sessions for the students and teachers to encourage them to interact and communicate with each other. In this way, a greater level of understanding may be developed, through which teacher-student relations may be strengthened. This will aid in inculcating a learning environment that promotes discussion and innovative/critical thinking, rather than stifling it (Table 1). In this way, it can be seen that Chinese society is knowledge-based and relies on innovative strategies to further the learning process in order to accomplish the objectives set by its Vision 2020 (Figure 5).

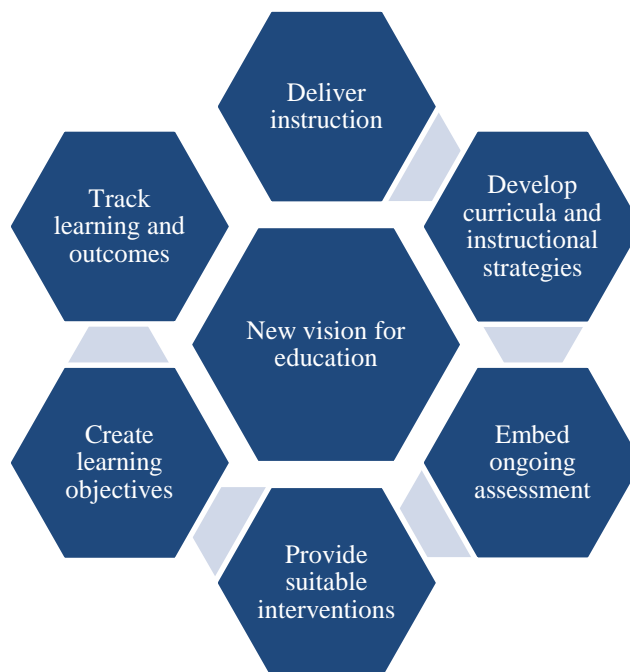
#### 3.3.4. South Korea

Furthermore, South Korea was seen to greatly emphasize the inculcation of English-language education policies so that foreign fund outflows through foreign scholarship programs may be curbed to a great extent. This was done so as to

meet its Vision 2020 objectives (**Figure 6**). In this way, South Korea is greatly succeeding in its attempts to attract foreign student participation in English language courses, through which its GDP may be significantly raised (**Rust & Kim, 2012**).



**Figure 5.** China educational vision 2020 (Source of inspiration: China educational vision: 2020).



**Figure 6.** South Korea educational vision 2020 (Source of inspiration: South Korea educational vision: 2020).

**Table 1.** Comparison between different Asian universities and the proposed university model.

Development Strategies	Singapore	Malaysia	China	South Korea	Proposed Model
ICT and AI Facilities	Yes	Yes	Not Noted	Yes	Yes
Professional Learning Communities	Yes	Not Noted	Not Noted	Not Noted	Yes
Creative Teaching	Yes	Not Noted	Yes	Not Noted	Yes
Learner-Centric	Yes	Yes	Yes	Yes	Yes
Extra-Curricular Programs	Not Noted	Yes	Not Noted	Not Noted	Yes
Vocational Training	Yes	Not Noted	Yes	Not Noted	Yes
Joint Training Sessions for Faculty and Students	Not Noted	Not Noted	Not Noted	Not Noted	Yes
Active Learning	Yes	Yes	Yes	Not Noted	Yes
Emphasis on EFL courses	Not Noted	Not Noted	Not Noted	Yes	Yes

Similar efforts could be raised through providing EFL courses in the proposed university model to attract foreign student participation. In our model, there is a dire need for citizens to improve their level of communication in English language (Alhaisoni, 2012). Therefore, English will be adopted as the sole medium of communication to enable students to improve their language skills in this context. The significance of South Korea as a nation implementing growth through targeting future goals is highly evident. Through making English the medium of communication, future goals such as enabling peace and diversity among different ethnic groups will be accomplished. Since a common language is used for communicating between these groups, there will be effective exchange of constructive ideas and innovation, through which a vibrant society will be achieved.

## 4. New Paradigms

### 4.1. Future Teaching to Be Thematic Instead of Discipline-Based Oriented

Traditional universities employ discipline-based learning rather than providing theme-based learning. This may be contrasted by world-ranked Western universities such as the University of Texas at Austin, RMIT University Melbourne, Durham University and Herriot-Watt University, where the faculty made active efforts to teach using thematic approaches rather than discipline-based ones. Therefore, the proposed university model aims to revolutionize the teaching approaches through incorporating thematic learning, where a central theme will be chosen for teaching various disciplines.

For instance, relatively more outdated disciplines such as robotics and artificial intelligence would be redesigned in terms of modules from the perspective of nanotechnology. These days, the importance of working at nanoscales is extremely significant in applications such as drug delivery and computational modelling. Similar efforts to integrate robotics and nanotechnology have been

conducted at the Nagoya University in Japan. Additionally, the University of York offers courses in Intelligent Systems and Nano-science Research. This level of development is not seen even with respect to technology-intensive traditional universities.

Additionally, disciplines will particularly be designed through keeping in consideration the sustainability concept. Recently, there are many issues being faced globally with respect to the environment, such as climate change, global warming and deforestation. Such environmental complications are additionally present in countries using only outdated university teaching approaches.

For example, there is a significant presence of air and water pollution due to various oil refineries existing in the Gulf region (Ouda et al., 2016). Additionally, the high degree of urbanization means that there is a corresponding high ratio of waste that must be actively disposed of to prevent harm to the environment. These few issues, among many, form the reason for the need of students in these countries to gain awareness in this regard. Universities in the US in particular, such as West Chester University, the Metropolitan State University and the University of Utah are highly cognizant of the need for sustainability initiatives through interdisciplinary teaching (Gosselin et al., 2016).

Specifically, universities addressed environmental issues through incorporating them in geoscience courses. Similar efforts would be made by the proposed university model to inculcate environmental awareness among the students. STEM courses such as Robotics, Artificial Intelligence and Human-Computer Interaction will be designed keeping the environmental perspective in consideration. For instance, these courses will teach students to design control systems that minimize energy consumption while optimizing output.

Additionally, students will be taught about processes of silicone and sand industrialization that incorporate minimum expenditure of energy and generate a high output. These courses could be integrated with additional courses such as Renewable Energy, Water Sustainability and Desalination, Organic Agriculture to New Technology in Agriculture and Fish Culture, so that interdisciplinary awareness may be gained in countries with less awareness of the environmental issues. The commitment of some countries to these issues remain in folders and agreements signed and archived in the roof. The new model of university we are here proposing aims to reactivate efficiently those shortcomings through the new approach of teaching and doing research.

As discussed, this proposal for a new university is greatly aligned with the need for educational reform in some countries especially those who have the wealth of doing so. Consequently, the adoption of our model is purely a political matter that means the willing to do so. The Vision 2030 of KSA for example seeks to develop a “thriving economy”, a “vibrant society” and “an ambitious nation” (Investment, 2016; Gazette, 2016). There is no better way to achieve these aims degree programs for catering to the interests of each individual without reforming the educational system as targeted by the Vision 2030 conditional

to an efficient implementation process.

Furthermore, a nation's true defining wealth comes in the shape of its future generations, who must be prepared for leading the country to greater heights of prosperity. This preparation can only be carried out through providing adequate educational resources to equip these individuals with the suitable knowledge needed in this regard. The rising trend of unemployment among youth in some countries like Tunisia, KSA, African countries greatly needs to be countered through enhancing the development of the tertiary educational sector.

Additionally, some countries are seen to lag behind their peers with respect to socio-cultural developments and innovativeness (Alnahdi, 2014). The aim is to establish a university, which actively seeks to provide knowledge that transcends religious and cultural borders. Through this, an aim will be achieved of contributing towards a genuine transformation into a knowledge-based economy.

#### **4.2. New Trends in Technology and Soft Skills**

Extensive research facilities form the backbone of any competent university. For instance, Singaporean universities are seen to be highly research-intensive in STEM fields (Tan & Ang, 2017). Similar efforts would be made by the proposed model for the other above mentioned countries, by establishing research centers especially for degree programs such as Bioengineering, Radiology, Simulation and Biotechnology. Research projects could potentially target emerging technologies such as distant surgery, retinal recognition and technology forensics and voice banking and branchless financial institutions by making efficient use of the tsunami of technologies in these areas. Providing research-intensive facilities would be a strong priority of the proposed model. In this way, students will gain valuable insight into comprehending, creating and handling emerging technologies.

For example, in the case of KSA, according to the Saudi Vision 2030, a strong focus is placed on a vibrant society, a thriving economy and an ambitious nation, as highlighted in **Figure 1**. The proposed university model aims to fulfill these objectives through the development of innovative leadership and entrepreneurship technology. Through the aforementioned strategies, Saudi students will be equipped with academic knowledge to soft skills that aid them to contribute positively to the Saudi economy. The same should be done by countries lagging behind in their traditional/conservative higher education systems.

As highlighted earlier, students will gain insight into designing creative technology that takes into account societal needs such as sustainability. For instance, smart material could be used for buildings in interior design courses, and transportation, such as the design of solar cars. The UAE has gained miles in this area through MASDAR Institute with collaboration of MIT.

Additionally, such an enriching university education will aid them to become a vibrant part of society through leading active and fulfilling lives. The strong focus on STEM research facilities and leadership training programs will further

aid the future generation to become ambitious with respect to envisioning the future of their country. International collaboration would additionally be carried out through the utilization of new generation networking and cloud computing, as seen in current global organizations. In this way, the goal of Vision 2030 to achieve an ambitious nation will also be accomplished.

In addition to training students academically, a competent university is responsible for nurturing their personal growth in terms of soft skill acquisition and inculcation of positive values such as peace and tolerance for every individual, irrespective of caste, color, creed or religion.

Soft skills refer to the ability of individuals to have harmonious interactions with other individuals. A gap is particularly noted among university students in conservative countries, where the barriers posed by moral policing play an impeding role in disrupting positive communication between students (male/female; culture difference within one society, etc). This is clearly seen in the past through the presence of separate campuses for males and females in some countries, as opposed to having a single coeducational institution (Al-Bakr et al., 2017). For example, the King Abdullah University in Saudi Arabia has already initiated co-education in its institution.

Eliminating segregation in our proposed university model will aid in a higher degree of comfortability with respect to communication between male and female students. As a result, students will be better equipped with knowledge pertaining to how they should conduct themselves in corporate settings, where there is no segregation. This form of soft skill development will aid them greatly upon graduation from the proposed university.

Additionally, soft skill development for these students would be carried out through providing outdoor adventure education (AE, hereafter) courses. Specifically, these courses refer to a range of interactive activities or events that revolve around key learning themes. These enable students to reflect individually on the process of learning in addition in the reflection sessions. Therefore, the proposed activities will aid students in reflecting about the key themes learned during those activities and encourage them to apply their learning to a series of real-world applications.

For instance, students will gain insight into how to handle communication with difficult individuals, how to develop flexibility in their interactions and how to regard other individuals from a tolerant perspective. More recently, international universities such as the University of Birmingham have begun to implement such courses as part of degree programs, so that students may be aided in developing their team coordination skills, improving their problem-solving capabilities and gaining valuable insight on the importance of sustainable and personable leadership.

Such a learning process falls within the category of action research; therefore, the proposed university will incorporate action research projects and provide AE courses to improve the soft skill acquisition of students enrolled. These action



research projects will be a component of undergraduate degree courses such as Artificial Life Programming using AI and ICT/E-health. The former is a degree program incorporating cutting-edge nursing technology and was originally seen in Japan. Soft skills in this regard will encourage students to design nursing programs that are able to communicate well with difficult patients and accommodate them fully.

A strong emphasis on tertiary soft skill development may additionally be seen in Malaysian universities such as private colleges in Georgetown, Penang; these help students gain teamwork abilities through class interactions, university environment and other embedded activities (Aithal & Suresh, 2015). Here, the role of the educator was considered extremely significant in enhancing soft skill acquisition among students, through actively taking initiatives to stimulate students creatively in this regard.

Therefore, the proposed university model will emphasize the significance of educators in improving soft skill development among the enrolled students. This will be done through providing training sessions for the university faculty. The training sessions will address concepts such as how students could be motivated creatively to develop in both professional and personal spheres. The faculty will further be encouraged to revise their curricula with respect to inculcating soft skills among their students. Therefore, the proposed model aims to carry out adequate soft skill acquisition among enrolled students through a coeducational campus setting, providing AE courses and training faculty in the art of soft skill development.

### **4.3. Readiness for Workplace Coop Programs, Field-Trips and Globalization Internships**

The usefulness of outdoor AE events has already been discussed in the preceding section. In addition to such events, students of the proposed university will be given the opportunity to attend training sessions and workshops that are specifically geared towards preparing them for assuming significant leadership positions in their future workplace. Suitable field trips to corporate industries and research facilities will further help students to gain an understanding of how to apply their learned concepts to real-world applications. Additionally, active efforts will be dedicated to providing students with enriching internship opportunities at global and multinational firms, to help them gain an idea of how to potentially serve society following their graduation.

### **4.4. Non-Traditional Teaching**

As highlighted in preceding sections, a thematic approach will be applied for teaching students, through relying on interdisciplinary approaches. Through this, students will be enabled to gain an all-rounded perspective of their fields, which will help them to contribute more positively to society. **Table 2** has highlighted the educational reformation to be enacted in various disciplines of study and the emergent need for such reformation based on extensive research.

**Table 2.** Educational reformation by percentage in existing curricula.

Disciplines	Sub-Disciplines	% Changes in Future	Emergent Need for Future Adjustment	New Disciplines
Engineering	Electrical	90%	4/5	Bioengineering
	Mechanical			Silicone and Sand Industrialization
	Civil			Smart City
Business	HR	75%	3/5	Entrepreneurship and Incubation of Technology Oriented Companies e-finance and e-banking
	Finance			
	Accounting			
	Strategy Business			
Science	Biomedical Sciences	95%	4.5/5	Distant Surgery
	Biological Sciences			Simulation and Training
	Health Sciences			Optics
				Radiology (3D, 4D animation)
				Organic Agriculture
				New Technology in Agriculture and Fish Culture
	Pharmacology			Retinal Recognition
	Renewable Energy			
	Solar Energy			
		Water Sustainability and Desalination		
Technology	Robotics	95%	4.5/5	Artificial Intelligence
				Artificial Life Programming
				Network Security
				Technology Forensics
				ICT/E-Health/AI
				New Generation Networking and Cloud Computing
				New Technology in Architecture and Interior Design
				Mega Data Processing
				Computer Science
				Creative Technology
				Biotechnology
				Game Programming Production and Management
				Business Intelligence
Digital Media and Game Development				
Materials Technology (including nanomaterials)				

## 5. Conclusion

The figures of unemployment rate of university graduate students from universities in the Gulf Region (for Citizens mainly) and in African countries are frightening (about 20%). Decision makers and statesman explain the phenomena by the lack of opportunities in industry and work towards the creation of new jobs. At the corporation level, we assume that most of these graduated students are not the right people for the right place. Consequently, the jobless graduated students are inclined to work in under qualified jobs such as a waiter or a salesman even for master degree holders. In some countries, they try to immigrate illegally to Western countries with high dreams that could not be achieved. Most of these illegal immigrants requesting the status of refugees in an illegitimate way are very often than otherwise expelled to return to their countries of origin. In the latter, criminality has increased for the graduated students once their tolerance to their social status remains unchanged years after years. Different studies report depression and extreme poverty amongst these students when they cannot afford family support or when they are the ones who support their families. As a matter of fact, poverty and the whole wellbeing of the society could be disturbed and by the domino effect impact the politicians that search for solutions not relevant to the core cause of the problem.

We believe that the employment input requested by the industry doesn't match the output of the traditional, conservative, and disciplinary oriented universities. This mismatch and the lack of preparation and relevant teaching of the university graduate students cannot allow them to be effective, efficient and competitive in the workplace market which creates the negative snowball for all the society in some countries. The root problem is in the model used by traditional universities in teaching and research of the students. They simply provide an incomplete output which lacks readiness in terms of skills, competencies, experience, and technology literacy to enter the market place softly and swiftly.

In this paper, we explained and demonstrated the shortcomings of the traditional universities in chosen countries at different levels. We suggested an alternative approach of teaching and research and a better preparation of the students since the early years of attending university. We proposed a new model for the Future University from "Why to How", the new oriented university needs new techniques and approaches to build the mind of their future outcomes in the new era of a tsunami of technologies and digitalization as per the needs of the market place. We think that traditional universities need to revolutionize their vision and mission to survive in the new transformative and demanding society.

While a traditional University sells degrees, the New Model of University we are offering sells skills for students and prospective employees who want to be life learners equipped with the cutting edge technologies and knowhow. Our model uses coop programs, in-field learning, and international internships to exchange with worldwide student through a wealth of networking. This model

doesn't pretend to be the first of its type; however it is an essay to put together the pieces of the puzzle which are widespread but not integrated in other papers. Tackling the integration of the new approaches in one model is the motivation of this paper. Our recommendation to traditional university decision makers is to undertake certain crystal clear reforms. We suggested to transcend the needs of the society to be socially responsible for the well-being of the Citizens of their countries. We presented an educational analysis of five countries that succeeded in their reforms. They could well be a model in the change management of traditional universities towards the paradigm shift. Traditional universities are becoming a heavy burden on their own society. Moreover, they are even affecting other countries through illegal immigration. The change is imminent!

### Conflicts of Interest

The author declares no conflicts of interest regarding the publication of this paper.

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Appendix 1

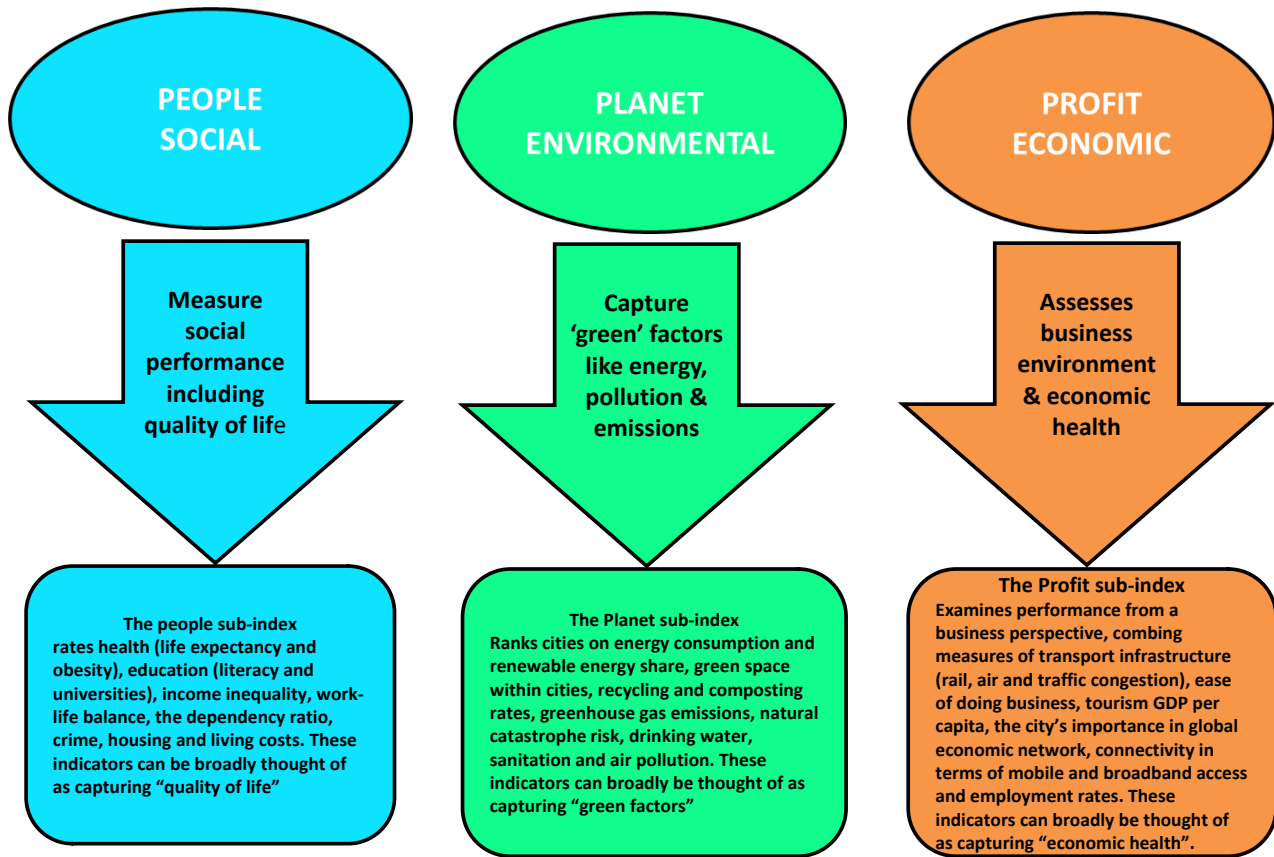


Figure 1A. The three pillars of sustainability (Source: Vision 2030.gov.sa/en). (Source: Vision2030.gov.sa/en).