CAREERGuide

AI
AND THE
FUTURE
OF WORK

The cover of this edition is an AI-generated artwork.

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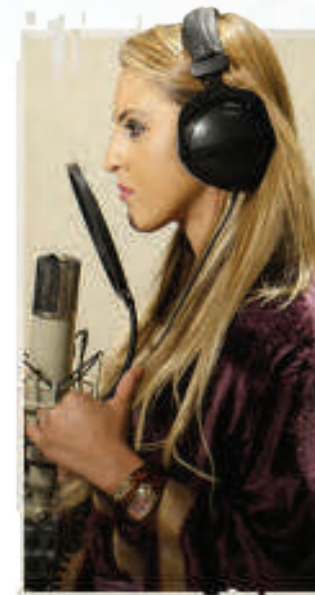### THE AI REVOLUTION
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CAREER Guide

Esteemed readers,

Welcome to the 14ᵗʰ edition of Career Guide, the magazine dedicated to inspiring and guiding individuals on their career journeys toward excellence. Within the pages of this publication, you will discover a wealth of invaluable insights, expert advice, and thought-provoking articles, meticulously curated to provide you with the tools and knowledge needed to navigate the ever-evolving landscape of careers, and guide students, graduates, and professionals alike through the transformative journey of career development.

Let us commence with a message from one of the Arab world's most prominent philosophers, Dr. Taha Abdurrahman, in which he addresses graduates of all majors and disciplines, guiding them toward realizing their full potential within any professional framework with the following words:

The biggest challenge that faces graduates does not lie exclusively in the transition from studying and training to work, but in the ascension to creativity at work; this ascension happens thanks to what I call "entrustment ethics."

These ethics are distinguished by two types of moral values: the first type is "horizontal values" that are limited by the material prospect of the outside world; and the second type is "vertical values" that go beyond this material prospect to other immaterial prospects.

Since it is inevitable that the graduate who is seeking work will go through the "contracting" process, there will be three horizontal values of the contract: "choice," "responsibility," and "utility." There will be also three vertical values: "goodness," "trustworthiness," and "wisdom." Therefore, it is imperative for the parties of the contract to strive in basing the contracts' horizontal values on its vertical values to be able to ascend to creativity at work.

Here, the contractor faces three sub-challenges: First, basing choice on goodness; second, basing responsibility on trustworthiness; and third, basing utility on wisdom.

First, basing choice on goodness. It is understood that the entirety of goodness lies in two things: the righteousness of mind and the independence of will. Righteousness of mind lies in knowledge of what needs to be obtained, and fairness in what needs to be done. This righteousness gives the contractor guidance at work. The independence of will lies in the contractor's proper determination of purposes and proper examination of motivations. This independence gives him sincerity at work. It is evident that guidance and sincerity are explicitly vertical morals; if the contractor bases his/her choice on them, it becomes truly creative.

Second, basing responsibility on trustworthiness. It is understood that the responsibility that emanates from the contract is legal or juridical, whereas trustworthiness requires the elimination of boundaries between what is legal and what is ethical, as it calls for assembly instead of dispersal. Those who can be described as trustworthy are only those who have been able to work on two totalities that go beyond the boundaries of law: "the totality of self" and "the totality of humanity."

"The totality of self" requires the contractor to acknowledge the contractor to assess that his/her responsibility will embody the sum of his/her capabilities, preparedness, and motives, and will include his/her actions and omissions. The inclusion of contractor within this responsibility leads him/her to aspire to "self-perfection."
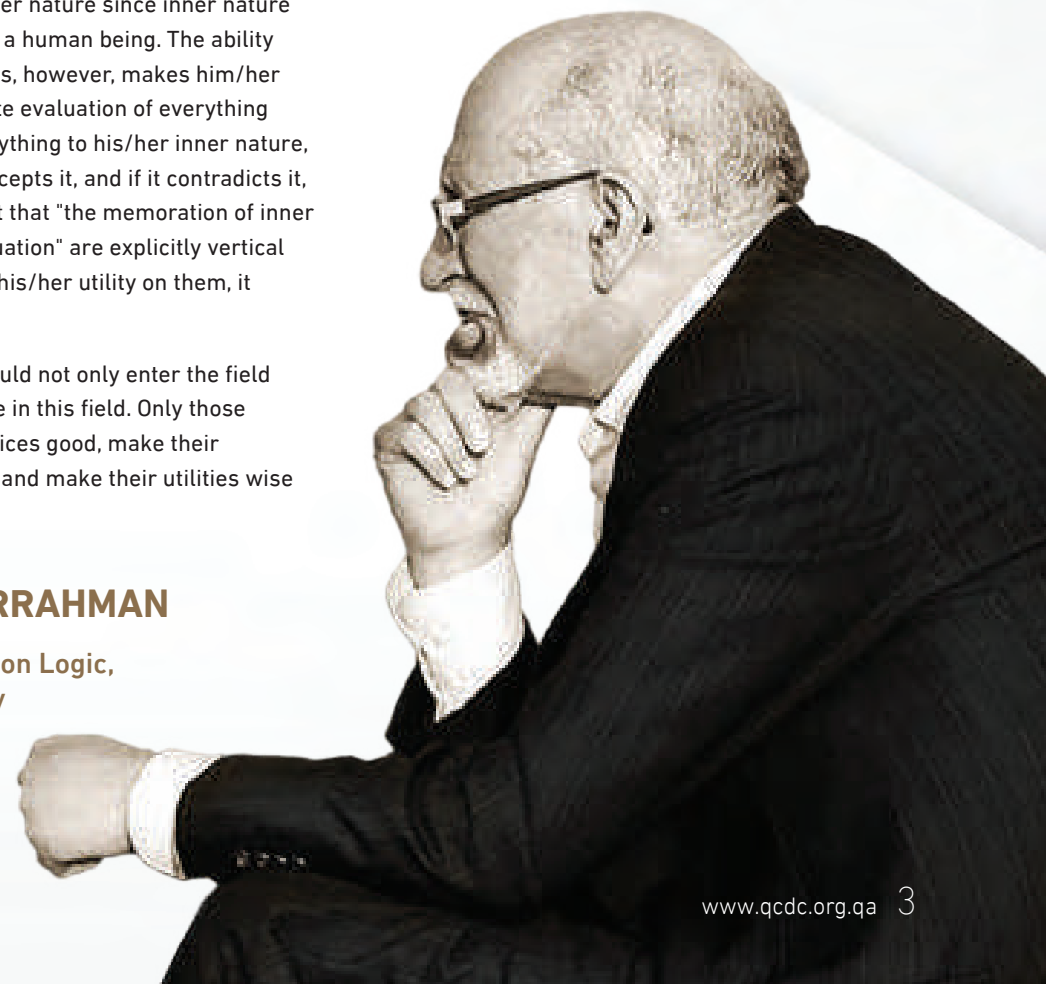
The totality of humanity requires the contractor to acknowledge that his/her responsibility is not limited by spatial boundaries, it goes beyond them to the entire world. The inclusion of humanity within this responsibility leads the contractor to aspire to "humanity perfection." It is evident that the totality of self and the totality of humanity are explicitly vertical ethics; if the contractor bases his/her responsibility on them, it becomes truly creative.

Third, basing utility on wisdom. It is understood that utility is an end in itself, whereas wisdom is an end and a value. If the contractor bases utility on wisdom he/she gains two things: the sense of value and the ability to distinguish between values. The sense of value leads him/her to the memoration of inner nature since inner nature is the repository of values in a human being. The ability to distinguish between values, however, makes him/her acquire the principle of innate evaluation of everything where he/she presents everything to his/her inner nature, if it agrees with it, he/she accepts it, and if it contradicts it, he/she rejects it. It is evident that "the memoration of inner nature" and "the innate evaluation" are explicitly vertical ethics; if a contractor bases his/her utility on them, it becomes truly creative.

In conclusion, graduates should not only enter the field of work, but must be creative in this field. Only those who strive to make their choices good, make their responsibilities trustworthy, and make their utilities wise ascend to creativity at work.

DR. TAHA ABDURRAHMAN

Moroccan Philosopher on Logic, Language, and Morality

21 CORPORATES RENEW MOMENTUM FOR LATEST EDITION OF LITTLE EMPLOYEE

2023 marked another successful year for QCDC with the third edition of its "Little Employee" initiative attracting over 21 corporate participants that offered children aged 7 to 15 the unique opportunity to step into the shoes of their parents or relatives for an entire workday.

The latest edition of the pioneering initiative, which featured the Ministry of Education and Higher Education, Qatar News Agency, Qatar Rail, Mada, and Porsche among other partners, highlights QCDC's unwavering belief that parents hold the initial key to shaping their children's career paths.

A RESOUNDING SUCCESS: 5TH EDITION OF "MY CAREER - MY FUTURE" LEAVES A LASTING IMPRESSION

More than 90 high school students graduated from the fifth edition of QCDC's "My Career - My Future" program, which guides and empowers youth to make informed and experience-based career choices.

In partnership with 15 major organizations in Qatar, including Qatar Airways, Hamad Medical Corporation, Vodafone, and the Doha Film Institute among others, QCDC provided unique job shadowing opportunities for high school students across a wide variety of industries, allowing them to align their aspirations with real world prospects, and bridging the gap between theory and practice to empower well-informed academic and career decisions.

The program's finale was highlighted by a closing ceremony during which participating students were presented with certificates of accomplishment. Representatives from partner organizations and instructors were also present in the event and were acknowledged for their collective efforts and dedication toward nurturing Qatar's future workforce.

QCDC, EDUCLUSTER FINLAND JOIN FORCES TO PROMOTE CAREER DEVELOPMENT

Driven by its commitment to the Qatar National Vision 2030, QCDC held high-level meetings with representatives of the EduCluster Finland Group to further both parties' collaboration and knowledge-sharing endeavors in the field of career development.

Discussions touched on strategies, best practices, and innovative approaches to effectively build on QCDC's pioneering initiatives and EduCluster Finland's global education expertise, to facilitate and expedite the establishment of career development infrastructure in the country.
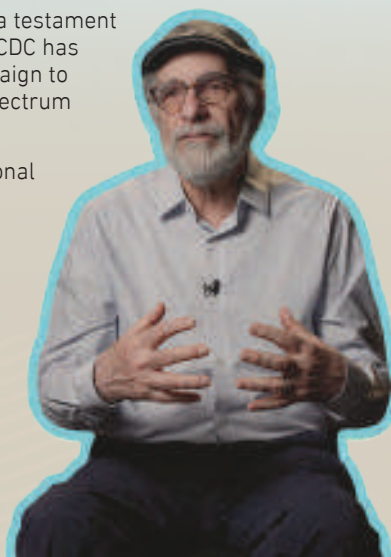

MILLIONS TUNE IN FOR AUTISM AWARENESS MONTH VIDEO SERIES ON SOCIAL MEDIA

In observance of World Autism Awareness Month and as a testament to its commitment to inclusivity in career development, QCDC has launched a month-long comprehensive awareness campaign to highlight efforts in integrating individuals with autism spectrum disorder (ASD) into the labor market.

The campaign, which combined digital and traditional media approaches, was a resounding success, generating substantial engagement and impressions across QCDC's social media platforms, with the impactful video series by Dr. Stephen Shore and Dr. Robert Naseef amassing more than 18 million video views.

Complementing the digital approach, the campaign extended its reach through traditional media with three exclusive feature stories and interviews, attracting significantly high readership and viewership.

EDUTAINMENT EXTRAVAGANZA AT NATIONAL SPORT DAY 2023

Marking Qatar National Sport Day 2023, QCDC actively engaged children and youth at Qatar Foundation's Oxygen Park to highlight the relation between physical activity and career success.

Activities focused on fostering teamwork and social interaction, with QCDC introducing participants to its Career Games collection and interactive tools promoting early career awareness. The event underlined QCDC's commitment to Qatar's active and sports-oriented community, aligning with Qatar Foundation's dedication to wellness and social responsibility.

250 STUDENTS TAKE PART IN THE CAREER COMPETITION

Qatar Career Development Center hosted the second Career Competition at Multaqa in Education City. The event aimed to increase career awareness among primary, preparatory, and high school students, provide insight into diverse career paths, and encourage skill demonstration.

The program included writing and drawing competitions for students, and a game design competition for career counselors and teachers.

The competition drew over 250 participants from governmental schools, culminating in a closing ceremony where winners across categories were acknowledged.

STEM TAKES THE SPOTLIGHT

Qatar's focus on supporting STEM education and careers and the crucial role that career development plays in propelling comprehensive socio-economic progress was at the heart of QCDC-led discussions at the STEM Education Summit 2023.

In his opening presentation, Dr. Tajalsir Kardaman, Head of Career Programs and Services, QCDC, underscored the significance of STEM education and careers in promoting innovation and technological advancement, gender diversity, and enhancing essential soft and technical skills.

EMPOWERMENT THROUGH TRAINING: CAREER COUNSELORS ENHANCE SUPPORTED EMPLOYMENT SKILLS

In a bid to enhance career guidance for students with learning challenges, QCDC organized the "Supported Employment Training Program: Soft Skills" to adapt international best practices to the local context.

The program addressed three core pillars, namely enriching career guidance services, fostering inclusive employment, and mobilizing stakeholders to secure meaningful opportunities for people with disabilities.

Participants received training in soft skills related to employment, including social skills, communication skills, self-management skills, and more. The program was led by internationally renowned experts Dr. Stephen Shore and Dr. Robert Naseef.

NEW INITIATIVES BY MOEHE

The Ministry of Education and Higher Education (MoEHE) has launched several initiatives that aim to further support and develop the education system in the State of Qatar.

One of the main programs announced was a special program to develop the skills of Qatari principals and deputies of both genders in primary, middle and secondary public schools. The program provides field educational experiences through seven training modules designed and prepared at Harvard University.

The ministry also unveiled the "Khibrat" training program which aims to improve the performance of Qatari teachers in public schools by providing them with training opportunities in countries with advanced educational and training systems.

Furthermore, this summer, the ministry celebrated the graduation of 150 female teachers from "Good Start" initiative and "Tamheen" program which prepared and qualified them to officially work as teachers and become active players in the educational process in the State of Qatar. This comes as the ministry pushes to cope with the rising demands for teachers, especially with more schools set to open in the coming years.

PARTNERSHIP WITH CSGDB

The Ministry's efforts were not limited to the school level, as it partnered with the Civil Service and Government Development Bureau (CSGDB) to launch the "Mahara - Academic Path" program and the "Academic Competencies" initiative.

The "Mahara - Academic Path" program enrolls job seekers registered on the 'Kawader' platform who hold a high school certificate in diploma specializations within the government scholarship programs. The three higher education institutions participating in this program are the University of Doha for Science and Technology (UDST), Community College of Qatar (CCQ), and Qatar Aeronautical Academy. The academic diploma majors include meteorology, air traffic control, aircraft maintenance engineering, practical nursing, electrical power engineering technology, electrical engineering technology, information technology, communication and network engineering technology, and an associate diploma in information technology. They are all in-demand specializations in the labor market. The participating students will receive a monthly stipend throughout their studies and will be directly employed in government agencies after the successful completion of their scholarships.

Meanwhile, the "Academic Competencies" initiative aims to employ Qatari citizens holding postgraduate university qualifications (PhD and master's degrees) in the Community College of Qatar (CCQ) through Kawader National E-Recruitment Portal. Holders of PhD degrees will be directly employed within CCQ's teaching staff, while holders of master's degrees will be employed for one year. Subsequently, the scholarship department will follow up on those who have been employed based on this program to further complete their postgraduate studies at one of the national universities in Qatar within one of the required disciplines.

The partnership between MoEHE and CSGDB aims to increase job localization rates in the government sector and to achieve the human development pillar of the Qatar National Vision 2030.

QU'S COLLEGE OF BUSINESS AND ECONOMICS LAUNCHES A MINOR IN TAXATION

Qatar University's (QU) College of Business and Economics has launched a minor in taxation, in cooperation with the General Tax Authority (GTA) and Qatar Financial Centre (QFC). A first of its kind in the region, the new minor comes as a response to the needs of the labor market and the recent changes in the tax policies and legislations in the countries of the region. It also reflects the university's keenness to provide new programs that meet the needs of the state and the business community, in addition to achieving further comprehensive economic diversification, which includes diversifying government revenue sources. Registering for the taxation minor will be open for students in all the undergraduate programs offered by the college.

QATAR UNIVERSITY YOUNG SCIENTISTS CENTER TO ORGANIZE THE SIXTH YOUTH RESEARCH FORUM 2024

Qatar University Young Scientists Center (QUYSC) has announced the details of the Sixth Youth Research Forum 2024. The forum will be held in cooperation with the Qatar National Commission for Education Culture and Science (QNCECS) under the slogan: "Innovation for Developing Societies." It will include three core themes represented in the role of innovation in the humanities and social sciences, the role of law in consolidating the concept of innovation and its impact on the development of societies, as well as the theme of science, engineering, and health.

Moreover, QNCECS has called on all Ph.D. graduate and undergraduate students in Qatar, Arab, Gulf, and international universities to participate with their research in this forum.

HBKU ANNOUNCES NEW PROGRAMS

Hamad Bin Khalifa University (HBKU) has announced the launch of five new programs for the 2023-2024 academic year.

Four of the new programs will be offered through the College of Islamic Studies: PhD in Islamic Studies, Graduate Certificate in Islamic Studies, Graduate Certificate in Islamic Finance, and MA in Counseling Psychology programs. The fifth program is the PhD in Biopsychology and Neuroscience program, and it will be available at the College of Health and Life Sciences.

PIONEERING CAREER DEVELOPMENT IN THE ARAB WORLD

INAUGURAL ARAB CAREER DEVELOPMENT CONFERENCE

In the pursuit of localizing the science of career guidance and development in the Arab region, the inaugural Arab Career Development Conference (ACDC) marked a significant milestone. Continuous development of professional skills and knowledge stands as a vital driver for the progress of nations. A skilled and qualified workforce plays a decisive role in propelling sustainable economic and social advancement. Yet, the Arab region faces various challenges, including a lack of proper understanding of theoretical career development concepts and the tendency to focus solely on individual efforts without considering the role of strategic initiatives at the national level.

As the significance of career development grows in advanced countries, it becomes imperative to establish mechanisms that facilitate the exchange of knowledge and expertise in this field. Here, ACDC emerges as a unique cornerstone, representing the first collective platform for such endeavors in the Arab world. In this context, Qatar Career Development Center (QCDC) participated in the inaugural conference to spotlight Qatar's pioneering efforts in career development.

The center's active participation and contribution underscores its commitment to sharing experiences and successes within the broader Arab community. QCDC, represented by Mr. Saad Al-Kharji, the Center's Career Programs and Services Manager, and Mr. Mohamed Tagrida, Head of Marketing and Communications, presented a research paper titled: "Enhancing the Inclusion of People with Disabilities in Qatar's Labor Market: A Case Study," showcasing the intensive efforts made by the center to promote an inclusive employment culture in Qatar. The paper highlighted the achievements made and the challenges encountered in this endeavor.

To delve into the role that ACDC aims to fulfill and the potential it offers to experts in career guidance and development across the Arab world, we spoke with Mr. Ahmed Mostafa Kamal, the President and Organizer of the Arab Career Development Conference. Mr. Kamal is a leading figure in the field of career guidance and development at both international and regional levels. Currently, he holds the position of Co-Chair of the International Relations Committee at the National Career Development Association (NCDA) in the United States.

Ahmed Mostafa Kamal

ACDC President and Organizer

What motivated you to organize the Arab Career Development Conference, the first of its kind in the Arab world?

Conferences hold immense significance in any field as they provide a vital space for knowledge exchange, learning from experienced professionals, and fostering connections among scholars and specialists. These factors drove us to organize the inaugural Arab Career Development Conference. The idea of this conference has been brewing since I signed the representation agreement with NCDA in Egypt back in 2010. However, regional events and the impact of the COVID-19 pandemic delayed its realization.

Did the first edition achieve its objectives?

As organizers, we assess the success of the conference based on clear metrics that indicate whether our objectives were achieved. The participation of over 1,000 practitioners and specialists, along with representatives from more than 40 governmental and non-governmental institutions in over 20 workshops and panel discussions, is reassuring evidence of the conference's impact and success. This encourages us to plan for future editions. From a personal standpoint, as a practitioner and someone interested in the field, attending the conference was undeniably an inspiring experience.

Can the field of career development play an active role in developing the economies of Arab countries?

First and foremost, we should bear in mind that a true understanding of career development is intrinsically linked to improving human lives. Since humans are individuals within societies, and societies are components of larger entities, a positive impact on the individual ripples through their smaller community, which in turn affects their nation, and, ultimately, the regional community they are part of.

Indeed, career development plays a significant role in the sustainable development of Arab countries' economies, as individuals are the foundation of any economy. Improving their skills and enhancing their abilities contributes to increased productivity and innovation, thus positively influencing the national economy.

Is there a disparity among Arab countries concerning their attention to and development of this field?

Absolutely, there is a significant disparity among Arab countries when it comes to focusing on and developing the field of career development. This disparity can be attributed to several factors. One key factor is the absence of unified awareness and understanding regarding the importance and benefits of career development. It's a relatively modern discipline, heavily drawn from foreign sources, making the process of localizing and adapting this knowledge a fundamental challenge. Additionally, differences in needs, educational policies, and economic structures among countries influence the degree of emphasis placed on skill and professional development. It's crucial to standardize concepts and formulate clear strategies to enhance the field of career development in Arab countries to achieve better outcomes and promote sustainable development in the region.

What is the most prominent challenge facing career development in the Arab region?

The challenges confronting this field are numerous and difficult to encapsulate, but let's discuss the most notable ones. Fundamentally, the primary challenge arises from the lack of genuine and accurate comprehension of the concept of career development. Emphasizing the word "science" here is crucial, as sciences differ from business applications and practices. Consequently, some individuals might view this field as just a job or a profession for financial gain. We don't have an issue with this approach; quite the opposite, we recognize the cost of investing in education and development and the significance of reaping financial returns. However, this approach shouldn't be solely profit-oriented. If the approach becomes solely about monetary gain, it could significantly undermine the quality of the field. Thus, raising awareness and fostering a true understanding of the concept and importance of career development becomes a paramount challenge.

Another challenge we face is the tendency toward individual efforts. This was prominently observed during the conference. Countries and entities within these countries often operate in isolation. This isolation negatively impacts the growth and advancement of the field. Therefore, it's essential to enhance cooperation and partnerships to ensure broader growth and impact of the field of career development in Arab communities. In fact, this was one of the reasons for organizing ACDC in the first place.

What are your long-term aspirations for the outcomes of this event?

Increasing awareness across the entire Arab region, not just practitioners and officials, about the nature of career development and how to benefit from it is of utmost importance. Individuals should understand when and why they need career development services and professionals who can assist them at every stage and challenge. These concepts should become part of public discourse. On the other hand, there is a need to establish Arab entities responsible for guiding and implementing career development, considering societal needs and global trends.

Has the date and location for the next edition of the conference been determined?

Following the success of the first edition, we aim to hold the conference annually. There is also another goal of organizing secondary events throughout the year. These don't necessarily have to be as large as the conference, considering the nature and challenges of initial endeavors. Although, establishing responsible bodies for this matter might be challenging, and it will depend on the commitment of sponsoring countries. For example, the Arab Republic of Egypt sponsored the first edition, and we are currently collaborating with some institutions in Egypt and other Arab countries to explore the feasibility and potential outcomes of organizing another conference in 2024. This will definitely be contingent upon the evolving circumstances and events. Hence, a specific date hasn't been determined yet, and it will be based on progress assessment and feasibility estimation.

Is there anything else you would like to add?

There is a crucial point I want to emphasize, which I've mentioned several times before—the necessity to increase awareness and enhance connections and integration among us as experts. Although we've been among the prominent figures active in this field since its inception in 2002, and we possess a comprehensive understanding of the situation in Arab countries, it's truly wonderful to discover the efforts and developments in some countries about which we had no prior knowledge! Personally, I found the research paper presented by Qatar's representative's at ACDC, about dealing with special needs and disabilities in career development, particularly impactful and interesting. It was an inspiring and remarkable contribution. Experiences and efforts from each country should be shared with the world beyond its borders. Qatar's participation in this endeavor, along with their cooperation with other entities, is a positive step toward increased collaboration and communication among us. This underscores the importance of interconnection and integration among our diverse national efforts. We would like to express our gratitude to Qatar and QCDC for their swift response to the invitation to participate in ACDC, their presence, and their collaboration, which not only supports this field but also adds value to it—both in Qatar and the broader Arab world, and even at the international level.

QWEA
A BETTER FUTURE FOR FEMALE ENGINEERS

In recent decades, Qatari women have made remarkable strides in breaking barriers across diverse industries, asserting their strong influence in driving the nation's economic progress. Through their dedication, they have attained prominent roles on both the domestic and international stages. This achievement is far from coincidental; it stands as a testament to the visionary leadership of Qatar, which has tirelessly supported the cause of women empowerment and supported women across various spheres. This approach has been instrumental in safeguarding their rights, showcasing their societal roles, and recognizing their invaluable contributions to Qatar's economy, society, and politics.

This transformation resulted from equitable educational opportunities for women and gender equality within workplaces, together bringing about a profound change. Official statistics from recent years demonstrate the remarkable increase in the percentage of women graduates

from Qatar's institutions of higher education, with figures approaching an impressive 70 percent. Women's presence in the nation's workforce now approaches parity, representing nearly half of the total workforce.

While Qatari women have reached significant milestones, they continue to face certain challenges on their path to success. Despite the presence of numerous accomplished female role models across different fields, some careers remain shrouded in societal misconceptions, deeming them unsuitable for women. These misconceptions persist, including the misguided belief that married women cannot effectively balance professional roles with their responsibilities as mothers, or that their professional performance would lag behind that of their male counterparts for various reasons. Furthermore, some people still doubt women's capacity to juggle demanding professional commitments with family responsibilities, particularly if promoted to higher positions with increased responsibilities.

Engineering, a field traditionally dominated by men, is one of the fields where Qatari women continue to encounter challenges. This is despite engineering being one of the most accessible fields for female students to pursue in Qatar. For instance, females comprise half of the enrolled students at Texas A&M University at Qatar, which offers undergraduate programs in petroleum, mechanical, electrical, and chemical engineering. This percentage surpasses many counterparts in major countries around the world. Since its establishment in Qatar, the university has graduated over 1,400 engineers, with 43 percent being women, half of whom are Qatari nationals.

One of these graduates is Engineer Abeer Abuhelaiqa, who earned her bachelor's degree in Petroleum Engineering with a focus on Petroleum Reservoirs in 2011. Abeer currently holds the position of corporate petroleum reserves and resources coordinator at Qatar Energy where she began her career directly after graduation, embarking on a successful career journey.

Abeer's path was by no means easy, as she faced numerous challenges at the outset of her career. Many perceived the oil and gas sector as exclusively suited for men due to factors such as demanding working conditions and the need to visit remote work sites. However, our young engineer stood her ground against these challenges, determined to achieve success. Today, she stands as one of Qatar's leading experts in operations, optimization, reserves, and resources coordination.

The Beginning

Eng. Abeer had always hoped that her experiences would benefit female students, building their self-confidence and enabling them to pursue engineering and excel in it, regardless of challenges. In 2018, she joined Hamad Bin Khalifa University to pursue a Master of Arts in Women, Society, and Development, offered by the College of

Humanities and Social Sciences. She decided to focus her thesis on finding solutions to bridge the gap in women's presence in leadership positions.

During a meeting with Her Excellency Sheikha Hind bint Hamad Al Thani, Vice Chairperson and CEO of Qatar Foundation, Her Excellency proposed the idea of establishing an association that would unite all female engineers in the country across various disciplines. This vision aimed to create a unified voice and a supportive environment for female engineers in Qatar.

From that moment, Eng. Abeer worked diligently to achieve this goal and initiated the establishment of a association for female engineers in Qatar. The initial steps included meeting with Dr. Hanan Farhat, Founder and Director of the National Corrosion Center at Qatar Environment and Energy Research Institute (QEERI), a pioneering engineer in the field of corrosion engineering. Her rich experience and extensive knowledge served as inspiration for many young female engineers in Qatar.

Despite numerous challenges, the Qatar Women Engineers Association (QWEA) was officially established under the umbrella of the Qatar Society of Engineers. The announcement, however, was delayed due to the COVID-19 pandemic until it was marked by a virtual launch event in September 2020.

The rising association was named "QWEA," an acronym that means "Strong" in the Arabic language. The members believed this name perfectly captured their mission to empower female engineers, inspiring them to overcome challenges during their academic and career journeys, and achieve success.

Diligent Efforts

The vision of QWEA centers on encouraging students to study engineering and choose it as a career path. This is achieved through various programs and activities, including school visits where QWEA engineers conduct discussion sessions. During these sessions, they introduce students to the field of engineering, shedding light on its diverse specializations by sharing their successful professional experiences.

According to Eng. Abeer, "The best way to inspire students is by providing them with role models to emulate. QWEA's school visits offer that opportunity, motivating students to explore engineering disciplines and pursue similar paths. We also organize career camps to acquaint them with various engineering specializations and collaborate with local institutions to reach as many children and youth as possible."

One of the prominent institutions that collaborated with the QWEA is the Qatar Scientific Club. Both parties signed a cooperation agreement, allowing committee engineers to assist in operating laboratories at the club. QWEA is also committed to participating in various professional exhibitions and conferences related to education and

engineering. Furthermore, QWEA engage in national events to raise awareness about the vital role of female engineers and their contributions to the national economy, simultaneously highlighting QWEA's efforts.

The committee also focuses on female engineers and engineering university students through guidance programs, training, and workshops. These initiatives help them tackle workplace discrimination, develop skills like adaptability and resilience in the face of challenges, and nurture leadership skills to become leaders in their fields. Additionally, QWEA honors successful female engineers in Qatar, highlighting their remarkable achievements.

Promising Future

Currently chaired by Engineer Zeinab Al Khayyat, and vice-chaired by Eng. Abeer, QWEA now has a membership council and numerous subcommittees, all led by young female engineers. The committee's membership has grown to encompass over 200 engineers, both Qatari and non-Qatari. Among them are engineers representing various engineering disciplines, as well as students from engineering colleges.

Regarding the reasons for QWEA's success, Eng. Abeer shares, "Our secret to success lies in teamwork and empowering every member to be a leader and take on responsibility. Despite most of the engineers being volunteers and working full-time jobs, their enthusiasm and dedication never wane. They genuinely aspire to bring about substantial positive change for all Qatari female engineers."

She adds, "Certainly, QWEA's achievements would not have been possible without the support of the Qatar Society of Engineers, Qatar Foundation's Education City, and other educational institutions in the country. I cannot forget the tremendous support we received from Dr. Amal Al Malki, the Founding Dean of the College of Humanities and Social Sciences at Hamad Bin Khalifa University."

In less than three years, QWEA has successfully instigated real change in the lives of numerous young female students and engineers. It has demonstrated the significance of such initiatives in advancing women's careers and enhancing their societal roles. However, all these accomplishments are just the beginning, as highlighted by Abuhelaiqa: "When we started working on establishing the committee, we couldn't have imagined achieving all this within such a short period. This gave us more opportunities to collaborate with local institutions, and we are already receiving multiple requests for cooperation on joint projects that benefit society. We also take pride in the fact that the association's achievements have resonated greatly in the Gulf region. Engineers from other countries have reached out to us, some representing associations seeking ways to collaborate, while others aim to establish similar associations in their own countries. There are still many aspirations ahead of us that we are striving to achieve!"

NEW ERA FOR QATAR'S FINANCIAL TECHNOLOGY

Have you ever heard of the term "fintech"? It's a term that stands for financial technology. As the name suggests, it describes the application of technological solutions to enhance the efficiency of financial services. In simpler terms, it's the intersection of technology and the financial sector, and it has now become an industry worth hundreds of billions of dollars. Fintech has brought about a massive revolution in the financial sector. This has become especially clear in the last two decades, particularly with the advent of the internet and the widespread use of smartphones. However, in reality, the relationship between technology and finance goes back much further. The financial sector has always been one of the sectors that heavily relied on technology to develop its services throughout history.

There have been many milestones, but it can be argued that the journey began when banks decided to rely on telegraph services in the 19th century to facilitate transfers between them. Then, there was another significant leap in the 1960s and 1970s when financial institutions embraced the potential of computers. Subsequently, credit cards, ATMs, and other solutions emerged, helping financial institutions provide a better experience for their customers.

Here's a simple example to illustrate the tremendous impact of fintech: in the 1990s, transferring money from one account to another required a visit to your bank branch, waiting in line, presenting the necessary documents, and perhaps waiting for approvals. Now, you can do this in seconds with a few taps on your mobile phone screen! Furthermore, through your mobile phone you can manage your bank accounts, invest your money, and make payments for purchases in stores. It's a massive leap that was hard to imagine back then, but it's now a reality that traditional financial institutions have had to grapple with, especially during the COVID-19 crisis. Now, they must continue their journey in the digital transformation landscape.

Today, these institutions are not only focused on how to leverage technology to enhance their services, but they also face competition from tech-savvy startups built around financial technology. These startups are often capable of providing services similar to traditional financial institutions and may even offer more convenience, particularly to the younger generations who spend much of their time moving between computer screens, smartphones, and tablets. The competition is made even tougher by the entry of tech giants like Apple, Google, and Facebook, who are stepping into the competition by offering financial services through their platforms.

From all that has been mentioned, it's evident that there is no escaping the fact that fintech will shape the future of the financial sector. However, the speed at which this happens and the ability of institutions to harness it will be determined by many factors, with one of the most crucial being the customers themselves and their willingness to adopt technological solutions to simplify their lives. Ultimately, those who succeed in providing a better experience that saves customers time and effort will stand out. Additionally, the development of fintech services and their integration into useful applications with emerging technologies such as artificial intelligence, machine learning, blockchain, cybersecurity, the Internet of Things, cloud services, and quantum computing should not be overlooked. It's also important to note that if technology is properly employed, it can contribute to achieving larger national goals such as sustainability, financial inclusion, and providing access for people with disabilities. For all these reasons, there's no doubt that the future belongs to financial technology!

Diverse Applications of Financial Technology:

There are several criteria through which financial technology applications can be classified, one of them being categorization based on the type of services they offer. Here are some of the prominent categories:

Payment and Money Transfer Services

These services encompass mobile payment and money transfer apps, digital wallets that allow storing payment information on mobile phones for use as an alternative to bank cards, as well as international money transfer platforms.

Lending and Credit Services

These services provide solutions like peer-to-peer lending, where individuals can directly provide loans to others, and online lending platforms tailored for individuals and businesses, such as "Buy Now, Pay Later" services.

Investment and Wealth Management Services

This category includes stock trading and securities trading apps, crowdfunding platforms that enable startups to secure funding through contributions from a large number of investors, and robo-advisors that can offer investment advice and manage portfolios using artificial intelligence.

Insurance Services

This rapidly expanding category is often referred to as "Insurtech." It allows for the purchase of digital insurance policies without the need to visit a physical office. Companies also rely heavily on technology to handle claims and detect fraudulent activities.

Digital Banks

Known as "Neobanks," these fully digital banks offer their services exclusively online through mobile apps and tablet devices, achieving significant success in numerous countries around the world.

Blockchain-Based Services

This category includes cryptocurrency exchange platforms like "Bitcoin," as well as decentralized finance "DeFi" and smart contracts that efficiently enforce the rights of parties involved more than traditional paper contracts.

Data and Financial Analytics Services

These services provide a comprehensive view of the financial services available in the market, helping individuals and institutions better assess their available options and make more informed investment decisions.

Regulatory Technology (RegTech) Services

Primarily targeting financial institutions, these services assist organizations in complying with regulatory requirements and managing risks efficiently. They include customer identity verification such as "Know Your Customer" (KYC) and combating financial crimes like Anti-Money Laundering (AML).

Corporate-Focused Services

These services help small and medium-sized businesses manage their financial affairs more effectively. They include payment processing services that make it easier for these companies to accept payments via credit cards, phones, tablets, or online.

Note: The financial technology field is continually evolving and expanding, meaning that there are always opportunities for new subcategories and services in each of the mentioned areas.

Job Market Brace for Impact: Opportunities Abundant!

As financial technology has brought about a radical change in the financial sector and the services it offers, its impact on the job market cannot be ignored. With financial institutions increasingly investing in fintech solutions, it is expected that their human resource requirements will change. This is not unlike what happened when these institutions adopted technological solutions in the past. Current employees in the financial sector must be prepared to develop their skills and acquire new ones to be able to work with the fintech solutions adopted by their organizations. They must also be open to taking on different roles if required.

At the same time, it's natural that the demand for certain jobs, especially those involving direct customer interaction, may decrease. However, there will be increased demand for other roles related to the application of fintech solutions. It's important to note that the fintech sector itself, including both established institutions and startups, will offer a wide variety of job opportunities. Among these jobs are those directly related to financial specializations like accounting and financial analysis, as well as technology-related roles such as data analysis, cybersecurity, data science, computer engineering, design, and software development. Additionally, various emerging technologies like artificial intelligence, blockchain, and others will create new job opportunities.

The fintech sector will provide unlimited opportunities for entrepreneurs, with startups playing a significant role in shaping the sector's current status.

Now, anyone can closely acquaint themselves with fintech and acquire the required skills to benefit from it by enrolling in one of the many online courses available. Furthermore, many universities around the world have already begun offering programs in fintech for those looking to build a career in this field.

Qatar's Strategy Announced

The spread of fintech also depends on governments' acceptance of it and their ability to establish the legal framework necessary for institutions and companies to develop and benefit from it. In March 2023, the Central Bank of Qatar revealed Qatar's fintech strategy, which aims to enhance diversity and innovation in the financial sector, supporting a knowledge-based economy in line with Qatar National Vision 2030. This strategy will contribute to the development of a comprehensive fintech ecosystem, starting from the establishment of fintech companies and enabling them to grow and expand rapidly. It will also support the development of financial services offered by banks in Qatar.

The strategy is based on four main pillars. The first is the creation of a leading infrastructure that includes advanced regulatory frameworks and electronic platforms to support fintech development. The second prioritizes innovation and growth in the fintech sector. The third focuses on developing human capabilities related to fintech through the creation of a world-class fintech curriculum in collaboration with universities and the development of supportive programs for entrepreneurs. The fourth pillar aims to enable fintech to have a positive impact on citizens' lives, business activities, and overall societal well-being by providing seamless services and promoting the transition to non-cash transactions and enhancing financial inclusion.

A set of initiatives has been identified to be led by the Central Bank of Qatar and carried out in collaboration with fintech ecosystem partners to implement this strategy, and it is expected to yield tangible results over the next five years. These initiatives include the emergence of more fintech startups, creating additional job opportunities, and increasing the direct added economic value of the sector from 12 million Qatari riyals to nearly half a billion.

CWallet: A Qatari Fintech Success Story

When exploring Qatar's thriving fintech scene, one name that stands out is CWallet. Founded in 2018 by Mr. Michael Javier and Dr. Abdulmohsin Al Yafei, the company has firmly established itself as a leading provider of digital payment services in Qatar. In 2022, the company's achievements were recognized by the Ministry of Communications and Information Technology (MCIT) as it won the Innovative Fintech Solution of the Year Award during the Qatar Digital Business Awards.

Dr. Al Yafei believes that Qatar's launch of a fintech strategy, although slightly delayed, has come at the right time. "It's a crucial step in the right direction, providing a solid framework for us to operate, expand our services, and innovate further. This framework will prove advantageous not only for CWallet but also for local and international fintech participants, enabling them to offer regulated services within the country. We hope this will lead to innovative solutions emerging from Qatar and reaching a global audience. It's not impossible; fintech is a vast field with a lot of room for creative ideas," he says.

CWallet began as an academic research project conducted by Mr. Javier during his master's studies at HEC Paris in Qatar. The concept evolved further with support from the Digital Incubation Center at the Ministry of Communications and Information Technology transforming into a startup company offering diverse digital payment and transfer services benefiting numerous institutions and individuals in Qatar. Dr. Al Yafei currently serving as the Vice Chairman of the Board, describes their journey: "Our journey goes far beyond a roller coaster ride. Nevertheless, witnessing what we have accomplished thus far has been truly gratifying. The main challenges were building the product and complying with the regulators. So, it was on a trial-and-error basis, and we, in fact, worked with up to 4 different development houses to have a fully PCI-compliant and regulated product. We tried to overcome these challenges by seeking help, learning from other entrepreneurs, and working with industry experts along with hiring the right talents and partnering with strategic organizations that provided both in-kind and cash investment."

CWallet upholds the highest sustainability standards by adhering to Environmental, Social, and Governance (ESG) practices. It also supports the United Nations Sustainable Development Goals (SDGs) by placing financial inclusion at the core of its strategy. Its services cater to a wide range of individuals in Qatar, including those without bank accounts, low-income groups, and expatriates living with their families.

Despite the remarkable success, Michael Javier, Co-Founder and CEO of CWallet, acknowledges ongoing challenges. "Our strategy revolves around providing a specific set of high-level exceptional services tailored to the needs of individuals, companies, and government institutions. However, achieving this means facing some prominent challenges like keeping pace with the continuous and rapid evolution of technology and the high costs associated with integrating services such as information security and cybersecurity," he says.

CWallet's ambitions don't stop there. Last year, the company successfully raised $875,000 in a Pre-Series A investment round. Javier hopes this will propel the company closer to its ultimate dream and mission: to become the first licensed digital bank, a "Neobank," in Qatar. "That's our mission. The complexity of what we are doing is huge, but we see the challenges coming and we accept them and try to overcome them. In the startup world, there's no way to avoid some missteps on the path to success, but we're working to minimize them. While this does not guarantee extraordinary success, we are confident in our steadfast determination to forge ahead. Our motivation to make a difference and positively impact the lives of others through financial technology continues to drive us forward," he concludes.

WILL METAVERSE SHAPE OUR FUTURE?

In October 2021, Mark Zuckerberg, the founder of the renowned social media platform Facebook, announced "Meta," promising it to be the future alternative to mobile internet through its Metaverse. According to Zuckerberg's vision, Metaverse is a three-dimensional digital space where we can fully immerse ourselves through special headsets. In this virtual world, we won't just communicate, but we'll also be able to carry out most of our daily activities, including work, learning, shopping, sports, along with entertainment activities like watching movies or enjoying video games.

After nearly two years, many people believe that Zuckerberg's ambition seems challenging to realize, with some even speaking of the project's demise following the announcement by "Meta" – the new name for Facebook's giga corporation, which owns various platforms and projects, including Instagram and WhatsApp – about its focus this year on developing artificial intelligence technologies and integrating them into its various products and services. So, has the Metaverse dream truly died?

To answer this question, we first need to understand what Metaverse is and the technologies it comprises. You might think that the foundation of this digital world is solely virtual reality (VR) technology, which provides a three-dimensional digital environment that simulates reality using high-resolution sensors, cameras, and complex software. Users can interact with the elements within this world using special headsets and control tools. However, in this digital space, there's also a place for augmented reality (AR) technology, which adds digital elements to your surrounding environment in real life, allowing you to view and interact with them. We'll also explore mixed reality (MR) technology, which merges both worlds, enabling you to manipulate reality. Recently, the term "Extended Reality" (XR) has gained prominence, encompassing all reality-altering technologies. Meta aims to provide all of these technologies within a single environment through its Metaverse. But it doesn't stop there; for this world to be comprehensive, it must also incorporate other equally important technologies such as artificial intelligence, blockchain, Web 3.0, and the Internet of Things (IoT).

You might think that these technologies are only suitable for entertainment, like video games, as this field has benefited greatly from them in recent years, contributing significantly to their development and vice versa. However, that's not the only field that can benefit from this technologies. There have been many successful experiments worldwide that have demonstrated the potential of extended reality technologies in fields such as psychotherapy, architecture, facility management, urban design, real estate marketing, travel, and tourism. Furthermore, these technologies are expected to revolutionize the communication industry, e-commerce, and many other sectors. For example, in the field of medicine, there are mixed reality-based systems that allow surgeons to view a three-dimensional interactive display of a patient's internal anatomy during surgery! There are also successful applications of extended reality in sports, proving their effectiveness in enhancing athletes' performance. If you're a fan of visiting museums and art exhibitions, you may have already experienced how these institutions apply these technologies to enrich visitors' experiences and make them more interactive. There are also immense possibilities for their use in training, especially in high-risk or high-cost scenarios, such as in military, industrial, and scientific fields. Also, the significant role these technologies can play in the education sector cannot be ignored.

Successful Local Experience

The aftermath of COVID-19 has shown that educational institutions may need to transition to remote learning at any moment, and virtual reality can provide a more efficient means to achieve that. There are many successful experiments around the world in this regard, and some academic studies have confirmed that virtual reality education can increase students' interest in learning, make them more interactive with their teachers and peers, and improve their understanding and retention of information.

In this regard, Qatar University has recently hosted a pioneering experiment where the digital space, or Metaverse, has been applied in the field of remote education. Last March, the College of Business and Economics at Qatar University became the first college in the country to use this technology in an experiment involving more than 60 students taking the Services Marketing course. During the experiment, students were able to visit a "digital twin" replica of their campus, a virtual building identical to the physical one, created in collaboration with "Eduka3D" and Microsoft. Some students visited the lecture hall in the virtual building using their laptop screens, while others experienced it through Oculus VR headsets.

The project earned a spot on the shortlist for the 'Technological or Digital Innovation of the Year' category during the prestigious Times Higher Education Awards MENA 2023. Dr. Rana Sobh, Dean of the College of Business and Economics at Qatar University, played a pivotal role in the project's success. She facilitated collaborations with key companies and was instrumental in bringing the project to light. "As the leading national university in the State of Qatar, it's imperative for us to also develop our programs, curricula, and teaching methods in line with the rapidly evolving business environment, both locally and globally. This obliges us to rapidly innovate and adapt in order to boost the capacity of our graduates to adjust and thrive in a labor market that is progressively reliant on digital technologies. Therefore, integrating cutting-edge technologies into our curricula is of paramount importance," she said.

Dr. Abdullah Aljafari, Assistant Professor of Marketing at the College of Business and Economics, Qatar University, who took on the responsibility of teaching the course within the digital space after receiving training on the required technologies, believes that the experience was generally positive, and that extended reality technology holds promise and can enrich the teaching process by

providing unique tools not available through traditional teaching methods. He states, "I believe that what sets this technology apart is the ability to use three-dimensional models that appear in front of students and help the professor convey ideas more effectively. This improves their understanding compared to just imagining what the professor is explaining or seeing two-dimensional images, for example. This technology also enables us to take virtual field trips to locations and environments related to the topics being discussed, that might otherwise be inaccessible or impractical to visit."

Most of the participating students found the experience to be highly beneficial and more enjoyable compared to traditional online lecture methods, especially in terms of interaction. The college is working on expanding the application of virtual reality technology to include a larger number of students and professors. Dr. Al-Jafaari believes that the trend toward using virtual reality technology in education will increase in the future, especially if the digital space or Metaverse continues to grow, and more companies and institutions show interest in building their presence in it. Nonetheless, Dr. Al-Jafaari believes that conventional teaching methods will not

completely vanish, at least not in the foreseeable future, stressing that "these technologies will not eliminate the need for traditional lectures; personal interaction between the professor and students will always be important. On the other hand, they will enhance the teaching process by providing innovative tools that improve its quality and effectiveness."

Promising Future

Building a virtual digital space like the Metaverse, which most of the world's population can easily access, like current internet applications, still faces some challenges. Most prominently among them are the high prices of the required devices, such as VR headsets. Additionally, internet networks around the world may not be readily able to handle the simultaneous use of large numbers of 3D internet users.

However, Engineer AbdulWahid Al Zaydi, who worked as Assistant Researcher at Hamad Bin Khalifa University in Qatar, believes that digital spaces like Metaverse will sooner or later become a part of the future. He says, "The pursuit of building a digital space like Metaverse to become an extension for the current internet is a natural evolution of the digital technologies. Software, in general, is always looking for solutions to break the barriers of time and space. Technologies like virtual reality and augmented reality help us achieve that. If we look back at the history of the internet, we'll see that it started simply on computer devices and gradually moved to mobile phones. Therefore, it's natural that we are now looking for solutions that enable us to transition to different environments."

Eng. Al Zaydi is one of the leading experts in the field of virtual reality in the Arab region. In 2014, he co-founded "Visual Experience," a company based in Jeddah, Saudi Arabia, specializing in the production and development of extended reality applications. The company has successfully executed numerous virtual reality and augmented reality projects in various sectors. Based on his experience, he is confident that the world will eventually find solutions to the challenges facing the development of the digital space. He sees a promising future for extended reality technologies in the Arab region, stating, "I don't believe that the dream of building the digital space is over. Instead, I see that we are on the verge of a major breakthrough in extended reality technologies. These technologies have evolved significantly in recent years, and the situation in the Arab region is not much different from what is happening around the world. Young people make up a large segment of our societies, and they are a group with a great passion for any new technology and easily adapt to it. Moreover, the infrastructure in many Arab countries has developed significantly with the launch of 5G networks, enabling us to build applications that were impossible to implement just a few years ago."

New Professions and Opportunities for Entrepreneurs

While there are concerns that extended reality technologies and mega projects like Metaverse may reduce the demand for some jobs, especially when combined with emerging technologies like artificial intelligence in innovative applications, it is expected that new professions and different roles for existing professions will emerge, especially if the virtual world

becomes an important part of our daily lives. This will increase the demand for other jobs, especially those related to creating extended reality experiences, such as software developers, artificial intelligence specialists, programming engineers, user experience (UX) designers, sound effects technicians, 3D designers, and cybersecurity specialists. This field may also open new doors for creativity for content creators and professionals in the entertainment sector, providing opportunities for project management, business development, product management, and marketing specialists. Additionally, the impact of these technologies will certainly extend even further, requiring professionals in various fields to learn how to work with extended reality.

Eng. Al Zaydi provides the following advice to anyone looking to succeed as an entrepreneur in this field: "When you're thinking about innovating solutions based on extended reality technologies, you should ask yourself if there is a willingness from the customer to pay for the service or product you will offer. Sometimes, an idea may appeal to you, but what you see as good for you may not necessarily be so for customers or a large user base that can generate the profit you aspire to."

"Another important consideration is not to start with a high-cost product that requires a lot of time for development. Start with the lowest possible cost and with an initial product to test the market. If there is interest, work on improving it gradually to reach the final product you aspire to. This will help you avoid significant losses. Also, keep in mind that the final product may not be the same as what you initially planned. As long as its current features provide solutions to its established purpose, you are doing just fine."

Digital Space Just Around the Corner

Let's now return to answering the question we posed initially: has the dream of the Metaverse come to an end? Talking about the demise of the Metaverse project doesn't seem logical at all. Just a few days after Zuckerberg's remarks, Meta announced the launch of a new generation of Quest VR headsets. Furthermore, the corporation has spent more than 100 billion dollars on Metaverse-related projects! The same applies to other tech giants. They are all still spending billions of dollars on developing products and projects related to the Metaverse. Microsoft, for example, is working on building a digital space called "Mesh" targeted at enterprises, and some of its features are expected to be available through Microsoft Teams soon. Their "HoloLens" mixed reality headset is highly advanced and already used in fields like medicine and industry. Google, on the other hand, is preparing to launch "Project Starline," a device that will allow users to see

3D holograms of people they're communicating with, even without special eyewear! As for Apple, they announced their new mixed reality headset, "Vision Pro," this year, which some consider the most significant device the company has created since the iPhone.

These are by no means the investments of companies that expect the project of building the digital space to wither away soon. On the contrary, they are all racing to develop extended reality technologies, acquiring successful startups and competing to secure the services of the best developers and designers. Their ultimate goal, as in the current internet world, is to own the largest share of the extended reality market, which some research institutions expect to be worth hundreds of billions by the end of this decade, despite its growth slowing down due to the breakthroughs in artificial intelligence technology this year. The opportunity to dominate what could become the future internet is well worth the effort!

While the project of building the digital space, or perhaps multiple digital spaces, is still in its infancy, if tech giants believe that there is a real demand for solutions within a digital space, they will undoubtedly work on addressing the challenges to ensure that the maximum number of people can access these technologies. Consequently, the cost of the required tools will decrease, networks will develop further, and this will mark a true beginning for the internet of the future. Until that happens, we must be prepared for a new chapter in our digital lives, while governments must collaborate with tech giants to ensure these technologies become tools for building a better future for everyone.

After reading the article, you might be wondering, what should I do next? If you're a student and haven't decided on your career path yet, why not explore fields such as computer science, software engineering, 3D design, and UX design? If you find one of these suitable for your abilities and aspirations, consider building a career that is connected to extended reality technologies.

However, if you have chosen a different career path or have already graduated and started your career journey, there are still plenty of opportunities to learn more about extended reality technologies through the internet. Online learning platforms like Coursera and edX offer courses covering all aspects of these technologies, and most of them offer free trials. This could be an opportunity for you to upskill and may benefit you later on if you need to deal with these technologies.

THE AI REVOLUTION

WHAT YOU NEED TO KNOW

The era of artificial intelligence has dawned, and your job may be at stake.

You've likely heard a variation of this statement in 2023, especially following the celebrated emergence of "ChatGPT," the platform introduced by "OpenAI," along with a plethora of other AI applications. Artificial intelligence, or AI, has become a global phenomenon and discussion topic, not just for employees concerned about their professional futures, but also for economists, computer scientists, politicians, educators, legal experts, sociologists, and even philosophers. Everyone is searching for clues to predict AI's impact on the future of humanity working to harness it for maximum benefit while preparing to mitigate any potential downsides. With all these rapid developments, you might feel uneasy, regardless of where you are in your career journey. You may be wondering: Is it really this critical? Could I be replaced by AI at work? How can I leverage these technologies to achieve more success in my career? Or am I better off changing my academic or career path?

In this article, we aim to shed light on artificial intelligence, with a specific focus on generative AI and its potential impact on the future of work. This will help you gain a clearer understanding of the bigger picture. However, rest assured, this won't be our last article on AI. Given the rapid evolution and leaps of this emerging technology, discussions about its impact on careers and the workplace will continue for many years to come.

What Do You Need to Know About AI?

When you hear the term "artificial intelligence," you might initially imagine robots performing human tasks, like those you've seen in Hollywood movies. However, the reality is far more profound.

First, let's clarify what artificial intelligence means. AI is an extensive branch of computer science focused on building software that enable machines to perform tasks that typically require human intelligence. These tasks often involve abilities such as learning, reasoning, inference,

and deduction. AI achieves these capabilities through mathematical equations and complex algorithms, allowing it to learn from data.

As technology has advanced, AI's capabilities have grown. It can now process vast amounts of data and possess more complex abilities, such as pattern recognition, language understanding, offering suggestions, problem-solving, and decision-making in various situations.

Although the term "artificial intelligence" first appeared in the 1950s, the technology gained significant momentum over the past two decades. It has silently infiltrated various aspects of our lives. It's there when you use navigation apps to reach your destination, or when a search engine suggests a relevant website. It's the engine behind social media platforms showing you posts matching your interests, and customer service chatbots on websites that can answer your inquiries. It's also present in facial recognition systems used in security and banking to detect suspicious activities.

However, most AI systems used in these technologies are designed for specific tasks or a limited range of functions. This year, a different type of AI has emerged: generative AI. It's capable of creating unique content, such as text, images, videos, or audio, based on the patterns and data it has learned.

When we mention the words "machines" or "machine" in the field of artificial intelligence (AI), we're not necessarily referring to robots in the traditional sense. This term can also encompass systems or software running on computers or mobile devices.

To dive deeper into the concept of AI and how generative AI works, it's essential to grasp some key terms in this field. First among them is "machine learning," which forms the foundation of artificial intelligence. Through machine learning, computer programs are enhanced with algorithms and mathematical equations that enable them to learn from the data they are fed. They can then analyze, connect, and utilize this data, leveraging their newfound knowledge to make suggestions, solve problems, or make decisions.

Following this is "deep learning," a subset of machine learning that relies on complex, multi-layered algorithms known as artificial neural networks. These networks emulate the workings of the human brain, allowing AI systems to analyze and understand vast amounts of data, recognize patterns more effectively, and provide solutions to more complex problems. Deep learning also enables AI to learn faster and improve itself without extensive human intervention, albeit within certain limitations.

With the increasing power of computers in recent years, the availability of massive datasets, and advancements in training techniques, AI systems based on deep learning have evolved. One notable development is the emergence of "large language models" (LLMs), with ChatGPT by OpenAI being one such platform.

These models primarily rely on Natural Language Processing (NLP), another crucial element in machine learning. NLP enhances a computer program's ability to learn, analyze, and generate human language. It has

created communication channels between humans and machines, enabling machines to perform tasks such as translation, spell-checking, and acting as the backbone of chatbots. The quality of a language model improves with the volume and diversity of the data it's trained on, as well as the accuracy of the learning algorithms used during training.

We can consider ChatGPT a highly advanced chatbot with immense AI capabilities. It relies on deep learning to recognize patterns, structures, and relationships within a given language, allowing it to perform a variety of natural language processing tasks, such as text analysis, generation, and translation, as well as answering questions in a conversational manner. ChatGPT has been trained on a massive dataset, including books, articles, websites, and various sources, enabling it to create entirely unique texts in a matter of seconds with reasonably high quality. Some have used it to compose entire novels, write code, summarize long texts, assist in research, or plan projects, among many other applications.

The emergence of ChatGPT has opened the door to a limitless number of generative AI applications. It signaled the start of a race among major technology companies to build the optimal large language model. The scope of content generation isn't limited to text; generative AI can also create images, videos, and audio content that, at first glance, is indistinguishable from human-made content. Just recently in 2023, OpenAI announced a new development for ChatGPT, allowing it to accept image and voice inputs when answering questions, expanding its creative possibilities even further.

AI and the Future of Work

Inevitable Impact That Can be Harnessed

There are fears that AI could lead to the loss of millions of jobs worldwide in the future. Previously, these concerns were primarily limited to blue-collar jobs such as factory workers, farmers, or warehouse staff, and other professions that involved physical effort and repetitive routine tasks that could be performed by AI-powered robots or machines, like driving cars or delivering goods to customers. However, with the emergence of generative AI, these concerns have expanded to include white-collar jobs that were previously deemed safe, such as programming, writing, and other professions that involve working with content like texts, images, or videos. Some tasks that once required an entire team and long hours can now be completed in minutes or even seconds.

History teaches us that any new technology will face initial challenges before being accepted by a larger population. Eventually, it becomes an unavoidable reality that we must deal with and benefit from. The same happened when computers emerged in the last century, followed by the internet, and then smartphones. Therefore, the impact of artificial intelligence is inevitable, and the question should be: How will it affect the future of work? Not whether it will or won't.

It is difficult to determine the full impact of AI on the future of work because the technology is evolving rapidly, and tech giants are investing billions to push the boundaries of innovation in this field and take the lead. Early indicators suggest that change is inevitable, but it does not appear to be worrisome according to most experts.

A study conducted by the World Economic Forum (WEF), in collaboration with "Accenture" on the potential impact of large language models like ChatGPT on jobs, published as part of the "Jobs of Tomorrow" report series, suggests that integrating these models into various fields of work will bring about a qualitative shift in how we interact with information and, consequently, how we work. The study concludes that the impact of generative AI on jobs will vary depending on the roles, and the greatest benefits will be for professions centered around critical thinking, problem-solving, and creativity, especially those in fields like science, technology, engineering, and mathematics. On the other hand, jobs that are susceptible to automation, especially those involving routine linguistic tasks like bank tellers or data entry clerks, will be more affected.

Expectations haven't changed much following a study titled "Generative AI and Jobs: A Global Analysis of Potential Effects on Job Quantity and Quality," conducted by the International Labour Organization (ILO) this year. It suggests that generative AI is likely to enhance jobs rather than eliminate them, by automating some tasks but not completely replacing entire roles. Thus, the study indicates that most jobs across various industries are only partially exposed to automation and will benefit from this technology in some way. The possible changes will be in areas like workload density and autonomy.

All of this seems logical because it's challenging to imagine jobs where every task can be fully automated through generative AI, perhaps only for very few jobs involving entirely repetitive routine tasks. This impact is expected to become more pronounced in the future, especially in professions like customer service, telemarketing, programming, writing, accounting, data entry, and secretarial work. However, it won't be without challenges. For example, this year in the Unites States, cinema workers went on strike due to the loss of jobs for background actors (extras) as producers increasingly relied on AI-generated content to replace them.

Collaboration, Adaptation, and Opportunity

There will always be a need in most professions for tasks that require a human touch and creativity —tasks that AI cannot perform. Additionally, there's the strategic aspect that relies on accumulated expertise that no machine can match. The more a profession requires personal interaction and empathy, the less it will be affected by these new technologies. Business owners won't entirely replace their employees with generative AI, even if it means it will complete these tasks in less time and at a lower cost, as it will not maintain the same level of efficiency without compromising the quality of the services or products they provide.

Over the past few months, generative AI has proven its ability to revolutionize various fields by automating some tasks and freeing up more time and effort for more challenging tasks. This is what we need to focus on. We must consider how to harness this technology to enhance skills such as critical thinking, creativity, and problem-solving, and to carry out our work more efficiently.

It seems that machines and humans can collaborate. There's no need for anyone to lose their job. However, to achieve the best results, different companies and institutions must focus on reskilling and upskilling their employees to enable them to interact optimally with AI, perhaps even taking on entirely new roles. Employees will need to adapt to changes in the nature of their work, and they may need to change how they perform their tasks entirely. It's no longer optional. At the same time, it's important that employees focus on developing personal skills like emotional intelligence, critical thinking, creativity, and teamwork, as these are skills that artificial intelligence has not yet been able to simulate.

Skill development and lifelong learning have become a necessity for every employee. According to the 2023 edition of the Future of Jobs report by the WEF, 25 percent of the skills required for most jobs worldwide have changed in nature since 2015, and there are expectations that the pace of change will be even faster in the coming years. Therefore, employees should anticipate a change in the skills currently required, which could reach up to 65 percent of skills by 2030!

When discussing the impact of artificial intelligence on the future of work, one cannot ignore the opportunities it can provide. Demand for some jobs may decrease while demand for others increases, just as entirely new jobs will emerge, as has happened with every technological leap throughout history. AI systems will require specialists in the field to build, develop, and maintain them. There is an expected increase in demand for specialists in AI, computer science, machine learning, data analysis, and digital transformation. This will also reinforce the trend of many countries developing smart cities.

> By 2025, the global market for artificial intelligence (AI) software is projected to exceed $130 billion.
>
> **Gartner Consulting**

Challenges and Threats in the AI Era

Despite all that has been mentioned, some still see AI not only as a threat to jobs but to humanity as a whole. This view is shared by many experts in AI, scientists, researchers, and business leaders.

In May 2023, Sam Altman, CEO of OpenAI, stated that the impact of AI on jobs will be greater than expected. He urged the US Congress to intervene to regulate and mitigate the risks of large language models. He suggested that the government should establish standards and requirements for licensing, development, and deployment of AI models, emphasizing that the primary goal of founding OpenAI is to find solutions to prevent AI from destroying the world, as he is certain it has the capability to do so!

This might sound like an exaggeration, but it does not diminish the necessity for cooperation between institutions developing these technologies and governments to find solutions to face the potential risks of artificial intelligence's evolution and to ensure its responsible and ethical use for the public good.

Like any new technology, the world needs to approach generative AI with caution. There are concerns about its use in creating content that includes misleading information, fake news, and deepfake videos. This is already happening!

Moreover, large language models still face many issues that undermine the credibility of the content they produce. Users don't have full visibility into the sources that these models rely on. Additionally, most of the digital content available worldwide to feed such models is in English and other foreign languages, with recent statistics indicating that approximately 60 percent of online content is in English, while Arabic content represents less than 1 percent. The ability to develop these technologies is also limited to a few countries. All the above often result in content produced by these models being biased and not diverse nor representative of different cultures.

There is also the problem of AI hallucination, where these models produce entirely unreal content based on fabricated falsehoods. So far, no one knows the exact cause of this phenomenon.

Summary

What is happening now is just the beginning of the era of AI. The evolution is advancing rapidly. No one knows exactly where these technologies will lead, but they hold great promise.

You might be asking yourself what should I do? The impact is inevitable, and you must prepare for it. This impact will vary from one sector to another, from one profession to another, and from one region to another, as there are many factors that will determine its scope.

Everyone needs to closely follow developments in the AI field and its impact on their area of study or specialization. Regardless of your career stage, you should research and experiment with various available tools to help you perform your work better, and possibly even to perform some tasks on your behalf, rather than instead of you. Online learning platforms offer courses and certificates that introduce you to various aspects of artificial intelligence and how to benefit from it. Some of these courses can even help you start a career in this field. If you are in a position of responsibility, look for ways to use it to develop your management or institution. There are also many executive-level courses to help executives use AI technologies to develop their organizations.

At the same time, governments will need to reconsider their education and employment policies. Keeping up with the forefront of AI will require developing the education system and incorporating artificial intelligence education at various levels. Teachers also require training and education in this area, and students should be encouraged to closely familiarize themselves with the field and its impact on the future of work. They should consider pursuing majors like computer science, mathematics, computer engineering, programming, robotics, and data science.

Qatar Is on the Right Track

According to the analysis of Pricewaterhouse Coopers (PwC) and Deloitte, two major accounting firms, the artificial intelligence market in Qatar was estimated at around 31 million US dollars in 2022. It is expected to grow by about 17 percent annually to reach approximately 60 million US dollars in 2026.

The State of Qatar has been early in keeping up with global competition in developing AI technologies. In 2019, the Ministry of Transport and Communications adopted the National Artificial Intelligence Strategy for Qatar, proposed by the Qatar Computing Research Institute (QCRI), a part of Hamad Bin Khalifa University.

The strategy aims to develop a plan that enables the State of Qatar to harness AI as a technological enabler contributing to achieving the four pillars of Qatar National Vision 2030: economic, social, human, and environmental. The strategy also outlines the preparation of Qatari society to effectively adopt AI technologies that are compatible with local needs and traditions.

The strategy identifies six core pillars that will help build a distinctive environment for research and innovation in the AI field within the State of Qatar and provide a framework for organizing future work plans and investments. These pillars are: education, data access, workforce, business, research, and ethics. According to the general plan of the strategy, the State of Qatar needs to focus on two fundamental aspects: the first is to become capable of producing world-class AI applications in areas of national interest fields and to have a business environment that enables the use of AI as an innovation driver. The second is to become an effective consumer of AI, with educated citizens, appropriate laws and regulations, and ethical guidelines.

Qatar possesses advanced digital infrastructure and holds a prominent global position in internet speed. The strategy acknowledges excellent opportunities for Qatar to possess future production means in AI through wise investments in this technology, especially with its well-educated and tech-savvy population. This allows reliance on AI-driven automation to rapidly enhance the capabilities of Qatar's workforce.

The strategy points out that not competing in the field of AI could harm Qatar's plans to diversify its economy and transform into a knowledge-based society. This is because AI-driven automation will significantly impact the workforce in all countries. According to a study by the Qatar Computing Research Institute, 46 percent of job tasks in the country can benefit from and be enhanced by using AI technologies.

However, the strategy also warns of a real threat, where some jobs, including office administrative professions that most Qatari citizens work in, are vulnerable to automation.

The strategy also suggests a number of recommendations within each pillar, outlining the measures needed to guide Qatar toward the future of AI and empower the state to achieve sustainable competitive advantages that preserve its active role in the global economy and society.

It concludes that Qatar is in a favorable position to develop and master AI applications and has a golden opportunity to become a key player in the AI-based economy of the future. However, Qatar needs to act immediately to seize this opportunity through intensive investment in educating, reskilling, and upskilling its citizens to enhance their current capabilities to utilize AI, and build a conducive environment for developing pioneering AI technologies.

In 2021, the Qatari Cabinet approved the establishment of a committee to develop mechanisms for monitoring and implementing this strategy in coordination with the relevant state ministries, authorities, and stakeholders. The committee's tasks also include formulating recommendations for human capital training plans and programs in the field of AI in coordination with various entities, supporting AI startups, and scientific research in this field.

Other factors indicate an increasing demand for AI solutions in Qatar in the future, providing more job opportunities in this field. This includes the launch of TASMU Smart Qatar program, which focuses on enhancing the digital transformation journey in the country and building smart systems in five sectors: transportation, logistics, healthcare, environment, and sports.

Summary of Recommendations in Qatar's National AI Strategy

Education

Qatar needs to develop a robust academic and experiential learning curriculum for adopting artificial intelligence (AI) across all levels of education (K–12), with a strong focus on project-based learning.

Design degree programs with in-built apprenticeship pathways (e.g., AI based medicine) where students can interact with researchers and businesses for building Qatar-relevant AI applications.

Promote a vibrant research and entrepreneurship ecosystem for innovative AI applications that naturally align with Qatar's national interest.

Adopt strategies for attracting top AI talent from all over the world.

Employment

Provide financial incentives to local businesses to embrace new AI solutions and resist the temptation of using low-cost labor as a substitute for embracing AI technology.

Educate/Train Qatari citizens in managing, building, and investing in AI solutions for continuously improving the standards of living and economic productivity in Qatar.

Research

Build applications using Arabic language processing for business use cases to become the leader in this domain among Arab nations.

Leverage AI expertise available within the country in strategically important domains for Qatar like oil and gas, transportation, health, and cybersecurity to build competitive advantage in specific use cases that could also generate export revenues in the future.

Scan the QR code to learn more about Qatar's National AI Strategy:

EDUCATION
AND ChatGPT

OPPORTUNITIES
AND THREATS

The rapid rise of generative AI has sparked many concerns across every sector, but for Education, there were even deeper concerns due to the potential impact of this powerful AI tool on the learning process of students. At Qatar Academy – Doha (QAD), it was not long before ChatGPT took an immediate effect on the students and their work. Students were naturally excited by the novelty and potential of such an amazing tool. Overnight, the laborious process of writing essays and completing homework seemed to be significantly smoother. But teachers also noticed that students were quietly using this technology, perhaps under the impression that it might not be permitted in an academic setting.

QAD is one of the Middle East's premier educational institutions. It is the largest school in Qatar Foundation as it offers Primary, Preparatory, and IB Diploma programs, in addition to an Early Education Center (EEC) for children as young as 6 months of age. All the programs are accredited by the Council of International Schools and the New England Association of Schools and Colleges (NEASC).

The subtle shift in classroom dynamics prompted teachers to dig deeper into the situation and recognize the necessity of open dialogue with students about the proliferation of AI tools, like ChatGPT, in our digital world and their potential uses. The Academy started by organizing a professional development (PD) session dedicated to understanding ChatGPT and its potential implications for the educational landscape. The Academy's entire staff participated in the session that provided them with the necessary knowledge and perspective to tackle this technological innovation effectively and make them more comfortable bringing the conversation into their classrooms.

"The undeniable fact that caught all our attention was the technological fluency of the generation we're educating. Our students are digital natives. It was an enlightening realization for us – if we want to stay relevant and effective as teachers, we need to keep up with their pace. We need to understand the tools they're using and adapt our teaching methodologies to bridge the gap between traditional education and this digital age," Rim Abdul Samad, Science Teacher at QAD told Career Guide.

Rim's experience in the field of education helped her realize from an early stage the potential of ChatGPT as an educational tool, and set off a flood of innovative thoughts as she quickly began to imagine and conceptualize ways in which AI could be seamlessly integrated into the school's educational and learning frameworks. As a matter of fact, most of her fellow educators saw the new tool as a groundbreaking opportunity rather than an ominous threat. Together they formed a collective of lifelong learners and started an exciting journey to learn about generative AI. They actively sought and shared readings, articles, research papers, and even TED talks revolving around the integration of AI in teaching. This intellectual exchange has been instrumental in broadening their horizons, providing them with different perspectives, and keeping them abreast of the latest developments in the field.

"The immediate availability of information, ideas, and explanations was just a text prompt away, which was both alluring and powerful to them. On the upside, it opened a door to a vast expanse of information. Students could ask any question, delve into any topic, and find a quick and thorough response. AI was like an additional, always-available tutor, providing explanations, clarifying doubts, and aiding with homework," said Rim as she described the immediate impact of the arrival of ChatGPT on students.

In response to the rising usage of ChatGPT and similar AI tools in the educational environment, QAD adhered to the principles set out by the International Baccalaureate (IB) organization. Earlier this year, IB issued a statement confirming that students are allowed to use AI tools like ChatGPT, provided that their use is properly acknowledged. This means that if a student uses ChatGPT to assist in their studies or in the development of their assignments, it should be credited as a reference, like any other resource they would use. This approach encourages transparency, maintains academic honesty, and fits in line with the school's goals and principles of embracing new learning technologies while instilling in students the importance of integrity and respect for intellectual property. Ultimately, the goal was to provide students with the best resources for their learning while also emphasizing to them the value of using these resources ethically and responsibly.

The discussions with students were fruitful. "We started conversations with our students about the role of AI in education, making them aware that we understood their interest in ChatGPT and similar technologies. We also laid out specific guidelines to ensure this powerful tool would serve as a support. We underscored the significance of maintaining a balance between AI-assisted learning and independent critical thinking," Rim said.

"Yes, ChatGPT could provide instant information, but we encouraged them to use it as a facilitator for their thoughts rather than a definitive answer, while stressing on the importance of responsible use, highlighting that AI should enhance, not replace, their creativity and originality," she added.

QAD's education approach doesn't focus only on its dynamic classroom curriculum. It also includes community and service programs, experiential education, and extra-curricular activities that prepare students for work, life, and leadership in their own communities and society at large. Students are encouraged to be risk takers, unafraid to ask questions and confidently seek answers.

Rim believes that students can absolutely derive substantial benefits from tools like ChatGPT without affecting their learning capabilities and creativity. As a matter of fact, when used properly, AI technologies such as ChatGPT can enrich their learning experience and stimulate creativity while keeping in mind protecting academic integrity.

She offers the following advice to students navigating this new era of AI-enhanced learning: "Remember that tools like ChatGPT are there to support your learning journey, not to replace your effort. It can be all too easy to allow such advanced AI to take over tasks, but you should remember that the educational journey is as much about the process as it is about the final answer. Use these tools to stimulate original thought and contribute to your own unique perspectives. The work submitted should always be a product of your own creativity and understanding."

While many consider tools like ChatGPT a threat to creativity, Rim sees many possible benefits in them as she said: "Tools like ChatGPT can serve as a wonderful brainstorming ally, offering a multitude of ideas and viewpoints to consider. However, creativity is about more than just generating ideas – it's also about refining, combining, and applying them in innovative ways. Students shouldn't let AI do all the creative work but use it as a tool to spark their own imaginative processes."

But what about the challenges that came with using these AI tools? For instance, one of the main concerns is the possibility of over-reliance on these AI tools by the students, thus hindering the development of highly important skills like problem solving, critical thinking and creativity. These tools can also pose a serious threat to their academic integrity, as they can be incredibly tempting for students to use them as a shortcut to the learning process instead of struggling with complex concepts and rigorous research. The accuracy of AI is another crucial concern. While AI technologies have advanced significantly, they are not infallible. They can, at times, provide information that is incorrect, misleading, or contextually inappropriate. "Students need to be taught to question and verify AI-generated content and not accept it blindly. Furthermore, students should approach AI-generated information with a critical mindset. Not every output from an AI tool is accurate or suitable. This presents a valuable opportunity for students to practice their critical thinking skills, by scrutinizing the information they receive, and cross-verifying it with other sources," Rim explained.

She seems confident that AI is not just a fleeting trend, and is, in fact, part of the future of education. "It is all clear, and we are committed to navigating this path responsibly, always with the best interest of our students at heart. In essence, while ChatGPT and other AI tools offer exciting possibilities for enriching education, it's crucial that we proceed with awareness and thoughtful consideration of these potential challenges. Only then can we ensure that we harness the power of AI to genuinely enhance learning and not compromise the integrity and purpose of education," she concluded.

GENERATIVE
AI

THREAT OR OPPORTUNITY FOR GRAPHIC DESIGNERS?

The generative AI revolution has sparked many debates during the past few months over its impact on existing careers, from web developers and content managers to illustrators and even to customer service workers and financial advisors.

Of particular interest to the creative industry is the impact of image-generating tools on graphic artists and designers. The applications that have become widely available almost overnight have immediately been adopted for general use by the public. These tools help users build high-quality images of whatever they can imagine and describe, in a matter of seconds.

All that's needed is to log on to platforms like Midjourney or Dall-E and provide a detailed text prompt. With recent enhancements to these platforms, users can now modify their own uploaded images or incorporate some of their elements into images generated by the platforms. These rapid advancements have prompted experts to consider potential impacts on fields like graphic design.

In this article, we explore the potential threats and benefits of Artificial Intelligence on the graphic design field, with Astrid Kensinger, Chair of Graphic Design at Virginia Commonwealth University School of the Arts in Qatar (VCUarts Qatar).

VCUarts Qatar, inaugurated in 1998, was the first American university to open its doors in Qatar Foundation's Education City. It offers academic programs in the arts, with a focus on liberal arts and sciences, and over the past two decades, has significantly contributed to the diversification and vibrancy of Qatar's labor market, producing a cadre of talented fashion designers, art historians, painters, graphic designers, printmakers, and interior designers. The University works in close collaboration with its main campus, VCUarts Richmond, through semester exchange programs, shared courses, conferences, event programming, and arts research.

Interestingly, Kensinger isn't overly concerned about the emergence of AI tools. "Image-generating AI programs may have proven that they can create visually interesting content, but they are not yet capable of doing the wide-ranging, complex work of graphic designers. These programs can fall under the realm of art or illustration, whereas graphic design is a much wider field that encompasses various dimensions, including 2D, 3D, and 4D design, as well as spatial design, wayfinding, exhibition design, and information visualization. Graphic designers are visual communicators with a distinct set of skills and responsibilities," she explains.

The graphic design curriculum at VCUarts Qatar emphasizes collaboration, research, practical experience and cultural literacy. Students are encouraged to work manually and experiment for a comprehensive learning experience, involving both computers and hands-on work. They work in the wood shop, the fab lab, and the flex lab. They use tools like power drills and work with 3D printers. All these areas are outside the domain of AI. This constantly evolving manual, technical, and physically adaptive approach fosters a balance between tradition and innovation in creative education.

"While AI may have advanced in many areas, it has not yet matched the human ability to create immersive, sensory-rich experiences through touch, taste, and smell. Graphic designers use their hands and a deep understanding of materiality to construct meaningful designs, making this territory uniquely human and essential in the field. The human side is also essential for aspects like understanding clients' needs, collaborating, understanding complex design problems, and providing visual solutions for them," she said.

Cultural literacy is also an important point to consider when we discuss the work produced by AI. Graphic designers' work is all about their personal narratives or local context, and AI is showing limitations when it comes to this. Images generated by AI have been roundly criticized for their lack of inclusivity and diversity. Most of the images are typical, especially in terms of beauty standards for females. This is no surprise, as AI primarily remixes and samples from existing databases, and there is a lack of digitized material that represents some cultures, including the Arab culture.
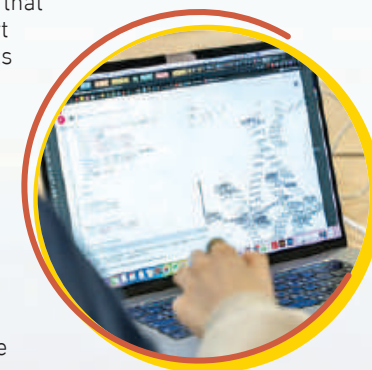
Dr. Kensinger understands that what we are experiencing is just the beginning and that the impact of AI on the graphic design industry is inevitable, but she is confident that there will always be ways to overcome any challenges. "This industry has proved throughout history its ability to adapt and evolve over time. It has existed for centuries. Look at the historical shifts such as the transition from handwriting to the printing press. Jobs were lost but new ones emerged," she explains.

She believes that graphic designers will need to be familiar with AI because it will probably change some job roles and speed up certain processes. This belief in, and acceptance of, AI's emerging prominence has made her keen on helping her students engage with these new tools, without compromising their creativity. For instance, her students recently worked on projects that involved creating work through Midjourney while adding inputs that reflected their knowledge and experiences. The results were highly impressive, but Kensinger is confident that a graphic design expert can notice the elements created with the help of AI.

Kensinger agrees that, while AI can be another instrument in graphic designers' creative toolkit, they must understand that it will never produce precisely what they are imagining, no matter how proficient they become with text prompts.

"After all, whatever AI tools produce is big data's response to their words and input. It will be missing human creativity and strategy which will always remain an essential aspect of the graphic design field," she explained.

"One of the beauties of creativity is found in experimentation, where breakthroughs often manifest through a happy accident. A mistake can unexpectedly open a fresh perspective, giving you a novel way to visualize or create. So, if you rely solely on existing data from a database of tried or already documented work, these happy accidents won't manifest," she said.

So, how should graphic design students deal with emerging AI tools? Kensinger has the following advice to them: "Explore what can be achieved with these tools and become proficient in using them, but also make sure to understand their limitations. For instance, they can offer you a range of possible directions to explore, or accelerate some design processes to allow quicker creative iterations."

"In addition, always remember to switch off and immerse yourself in the world outside for inspiration," she concluded.

UNDER THE SPOTLIGHT

ENTREPRENEURSHIP ECOSYSTEM IN QATAR

Over the past two decades, the State of Qatar has undergone a remarkable transformation on all levels. This transformation has been driven by its ambitious development plans that focused on investing in strategic fields like education, research, healthcare, infrastructure, culture, and sports. It all comes as the country strives to achieve the four pillars that form its National Vision 2030 and lead to the creation of a knowledge-based economy. Knowing that entrepreneurship plays a key role in building a strong economy that fosters innovation, Qatar invested heavily in developing a sustainable entrepreneurial ecosystem. But despite the improved regulatory systems and policies that have led to remarkable growth in this field and the emergence of successful tech-based projects, challenges still exist. In recent years, HEC Paris in Qatar focused a large part of its research efforts to shed light on every aspect of the entrepreneurial ecosystem in the country. This follows more than a decade of helping thousands of business leaders in Qatar through an array of top-class executive programs. The university's efforts stem from its deep belief that understanding the phenomenon of entrepreneurship by its consequences is key for any country and its decision-makers to make smarter decisions that achieve economic prosperity.

In late 2022, the university published its annual report on entrepreneurship in Qatar, under the title "Qatar's Entrepreneurial Ecosystem: Pathways for Innovation." Prepared by Dr. Allan Villegas-Mateos, Senior Research Fellow of Entrepreneurial Ecosystem Studies at HEC Paris in Qatar, the report updates and expands its first edition: "Qatar's Entrepreneurial Ecosystem - Empowering the Transformation." It offers a detailed map of Qatar's current entrepreneurial ecosystem, while exploring the ways entrepreneurial ecosystems and sustainable development combine to build sustainable entrepreneurial ecosystems. In addition, it explores the aspects that trigger innovation-driven entrepreneurial activities compared to traditional business activities like coffee shops and beauty salons.

The report found that despite the country's efforts to put in place the structural conditions necessary to build a sustainable entrepreneurial ecosystem, much still needs to be done, as Dr. Villegas-Mateos explains: "Qatar is on the right track; the system developed well over the past few years. However, there is more to be done if we want to build a healthier ecosystem. One of the major challenges that we noticed in Qatar is that most university students don't actively choose or show enthusiasm for entrepreneurship. This may be due to not considering it a priority or lacking knowledge about where to begin. The key to building a healthier entrepreneurship ecosystem is for them to have access to information and support. They should be given the needed tools and learn about the success stories of those who succeeded in this field. This will lead to creating a pipeline of more projects, more innovation, and more fund raising options."

Bureaucracy is also a main challenge facing entrepreneurs in Qatar, despite the existence of policies that support them. "We need to ensure the full implementation of policies that support entrepreneurs, remove barriers that may face them, and ease the access of small businesses to strategic sectors like agriculture and manufacturing," added Villegas-Mateos, who is also a serial entrepreneur, consultant, and angel investor in the technology, manufacturing, and retail sectors.

One of the report's main recommendations is to integrate entrepreneurship education as part of the curriculum, from schools to universities, and enhance the collaboration between academia, industry, and government.

> *There is a misconception about entrepreneurship that it is only about creating new businesses from scratch, but in truth, in any organization, you can be an employee with an entrepreneurial spirit, which will mean that you have some important skills, like leadership and networking. You can take some risks and can propose new ideas. Entrepreneurship creates a set of universal skills that are useful for the employees in any kind of organization.*

The Role of Universities

Dr. Villegas-Mateos is also Qatar's coordinator of the Global University Entrepreneurial Spirit Students' Survey (GUESSS), an international research project that aims to offer a better understanding of universities' roles as catalysts for creating entrepreneurial cultures.

A couple of years ago, Qatar became the 59th country in the world to embrace the project and the result was the "2021 GUESSS Qatar Report," which provides insights into students' entrepreneurial career choice intentions, their entrepreneurial activities, and the underlying drivers, comparing students in Qatar with students from the rest of the world.

The survey was the first of its kind to be conducted in Qatar and involved 121 students from the Education City universities. Its results showed that Qatar is above the regional and global average for career intentions to become an entrepreneur. On average, students in Qatar reported a higher positive attitude toward becoming an entrepreneur and a higher self-efficacy to undertake entrepreneurial endeavors than that of students from the rest of the world. Among the survey's key results was that 37 percent of students in Qatar have not attended a course on entrepreneurship, which is above the MENA countries' average (34%), but below the GUESSS average (44%). It also showed that the share of nascent entrepreneurs in Qatar (48.8%) was significantly higher than in the rest of the world (28.4%).

"The results of these surveys can be a great source of information for policymakers, from there, they should be able to decide what should be done to help students at schools and universities gain the right skills to succeed as entrepreneurs in the future," said Dr. Villegas-Mateos.

Dr. Villegas-Mateos believes that creating an entrepreneurial culture in Qatar is essential in building a sustainable entrepreneurial ecosystem in the country. "This involves creating awareness of entrepreneurship, its importance, the opportunities it offers, showcasing success stories, and connecting people. It is something that takes time and requires the efforts and commitment of all stakeholders," he concluded.

Work is underway for the next edition of the survey, with the results set to be published in 2024, and participation is now open to students from all universities in Qatar.

Scan the below QR code to access the full report:

Scan the below QR code to participate in the upcoming Qatar GUESSS survey:

PHYSICAL MEDICINE AND REHABILITATION

The field of medicine encompasses various branches, each of which holds significant importance. However, without their collective integration, any healthcare system would find it challenging to provide comprehensive services that promote the well-being of individuals and communities. In the following lines, you will learn about one of the prominent branches in the medical world: Physical Medicine and Rehabilitation (PM&R). This specialization focuses on diagnosing, treating, and rehabilitating individuals whose mobility and functional abilities have been impaired by injuries, disabilities resulting from diseases, accidents, or surgical operations. What distinguishes PM&R from other medical fields is its comprehensive approach to patient care that includes addressing physical aspects along with considering psychological and human aspects to enhance patients' quality of life and well-being.

While the roots of Physical Medicine and Rehabilitation date back to ancient times, it has evolved significantly and modernized during the first half of the twentieth century, a period marked by two world wars that left millions injured. Many countries established specialized centers to assist these individuals in returning to their daily life activities and reintegrating into society. The first academic course in Physical Medicine and Rehabilitation was founded in 1908 at Harvard University by Dr. Frank H. Krusen, considered one of the prominent founders of this field. Subsequently, medical schools developed independent programs in this specialization, known since the late 1940s as "Physical Medicine and Rehabilitation" or "PM&R," also referred to as "Physiatry."

The specialization continued to evolve and became an integral part of advanced healthcare sectors. It gave rise to sub-specializations such as Pain Management, Sports Medicine, Pediatric Rehabilitation, Musculoskeletal Rehabilitation, Neuromuscular Rehabilitation, Spinal Cord Injury Rehabilitation, Brain Injury Rehabilitation, Cardiopulmonary Rehabilitation, Cancer Rehabilitation, Prosthetics, and Orthotics.

The duties of a Physical Medicine and Rehabilitation physician vary based on each sub-specialization and the requirements of each case. Nevertheless, their primary goal remains helping patients regain their mobility and functional abilities to the greatest extent possible and adapt to any lasting effects, enabling them to return to a pain-free, normal life.

To achieve this, the physician must accurately diagnose and assess the condition to determine the necessary therapeutic interventions. Subsequently, they design a suitable treatment plan and oversee its implementation with a multi-disciplinary team that may include Physical Therapists, Occupational Therapists, Psychologists, Social Workers, Speech and Swallowing Therapists, as well as nursing staff, depending on the needs of each case. Additionally, they may need to make modifications to the treatment plan when required, all the while providing psychological support to the patient throughout their recovery journey.

To pursue a career in this specialization, you initially need to study General Medicine and obtain a Bachelor's degree. After that, you can specialize in Physical Medicine and Rehabilitation by enrolling in an appropriate residency program at a medical institution that allows you to acquire the necessary knowledge and experience and receive the training that qualifies you to become a specialized physician. Sweden, Germany, the Netherlands, the United Kingdom, Switzerland, the United States, and Canada are among the best countries in the world to study this specialization, and the field is expected to experience further growth in the coming years. Moreover, it holds a promising future in Qatar, given the state's continuous commitment to developing the healthcare sector and investing in it.

Hamad Medical Corporation (HMC) inaugurated the Qatar Rehabilitation Institute in 2016, which stands as the largest specialized rehabilitation hospital in the region. The institution provides its services in accordance with the highest international standards, offering five main programs: Stroke Rehabilitation, Brain Injury Rehabilitation, Spinal Cord Injury Rehabilitation, Pain Management, and Pediatric Rehabilitation.

Dr. Fatma Jassim Al Kuwari

Physical Medicine and Rehabilitation Consultant

Assistant Chairperson of the Physical Medicine and Rehabilitation Department

Qatar Rehabilitation Institute

Hamad Medical Corporation

Ever since I was young, even before starting high school, I aspired to become a doctor. After achieving high grades in the General Certificate of Secondary Education (GCSE) in 1990, I was granted a scholarship to study medicine at the Arabian Gulf University in Bahrain, where I graduated with a Bachelor's degree before returning to Qatar to complete my residency at Hamad Medical Corporation.

During my work at Rumailah Hospital, I developed a fondness for the field of Physical Medicine and Rehabilitation, and I decided to specialize in this area. What encouraged me the most was my personal interest in helping others and my core desire to provide assistance, which aligns perfectly with the essence of this field.

Later, I decided to travel to Sweden to pursue further studies and specialization in Physical Medicine and Rehabilitation. I joined Danderyd Hospital in Stockholm to obtain the Swedish Board Certification in Physical Medicine and Rehabilitation. My academic journey there spanned six years, including a full year dedicated to learning the Swedish language. Practical training was carried out through my work as a physician in the university hospital, involving various roles such as examining cases, diagnosing, providing treatment, writing medical reports, and participating in outpatient clinics, inpatient wards, medical meetings and lectures, and specialized workshops.

The task was not easy, especially with the responsibility of caring for my two children during my studies, juggling between being a physician, a student, a mother, a homemaker, and an educator for my children. Many times, I spent more than eight consecutive hours at the university hospital, and I moved between several places of residence during my years there. However, with God's grace, determination, and a clear goal to achieve, my academic journey resulted in the accomplishment of my objectives.

After returning to Qatar, I joined the Physical Medicine and Rehabilitation Department at Hamad Medical Corporation, where I currently work as a consultant in Physical Medicine and Rehabilitation. Additionally, I hold the position of Assistant Chairperson of the Rehabilitation Medicine Department at the Qatar Rehabilitation Institute.

My responsibilities at work encompass various departments, including outpatient clinics, inpatient wards, the daily rehabilitation unit, and community-based rehabilitation. In my role, I lead a therapeutic team comprising physical therapists, occupational therapists, speech and swallowing therapists, psychologists, social workers, and nursing staff.

Patients are transferred from Hamad General Hospital to the Qatar Rehabilitation Institute, where we develop a comprehensive treatment plan that includes short and long-term goals. We also provide a post-discharge treatment plan by engaging with the patient's family and support network to familiarize them with the proper ways to deal with the patient's new condition following the injury. Moreover, we collaborate with the patient's workplace to assist them in returning to work and identifying suitable job positions that align with their new mobility capacities post-treatment. Through our return-to-work program at the Qatar Rehabilitation Institute, we have successfully reintegrated 130 patients into their jobs, either to their previous roles or new positions. We have encountered significant cooperation and understanding from employers, contributing to improving the patients' well-being and fostering a sense of empowerment and community participation.

One of the major challenges a rehabilitation physician faces is finding the appropriate and effective means of communicating with the patient to help them comprehend the nature of their injury and adapt to their new circumstances. Some patients may, for instance, resist leaving the hospital due to fear of facing society with their new condition and feeling embarrassed in their interactions with others. This highlights the importance of effective communication skills that rehabilitation physicians should possess to overcome such challenges. Additionally, patience and teamwork skills are essential, along with a commitment to continuously stay updated with professional and medical developments in the field.

I encourage students to be diligent and perseverant in their fields of study, contributing to the advancement of our generous nation. I advise them to seriously consider pursuing medicine and specializing in the field of Physical Medicine and Rehabilitation because it is a highly important specialization that offers the opportunity to help others regain hope and return to their normal lives. There is nothing like the sense of fulfillment they will experience when witnessing the sheer joy in the eyes of patients and their families, as they realize that they are one of the reasons behind their recovery.

PETROLEUM ENGINEERING

Imagine our world without energy sources! We would be forced to live without electricity, modern transportation, and communication. Factories, hospitals, and most infrastructure projects would come to a halt, resembling a return to bygone centuries. These reflections highlight the immense significance of the energy sector, encompassing diverse fields, activities, and specializations that shape our present and build our future.

In the following lines, we explore one of the most prominent specializations in this sector: Petroleum Engineering. This field merges concepts and principles from disciplines like Chemical Engineering, Geology and Physics, all for the purpose of discovering and extracting hydrocarbon resources, notably crude oil and natural gas.

The foundations of this engineering domain began to emerge in the early 19th century. While evidence of petroleum use dates back to ancient times for various purposes, such as lighting, construction, and even medicine, the real inception of the petroleum industry occurred in 1859 in Pennsylvania, USA. Colonel Edwin Drake revolutionized drilling by employing a steam engine, enabling the extraction of oil from deep within the earth and establishing the first commercial oil well in history. This moment marked the end of relying on natural seepages and shallow wells for oil procurement, heralding a new era of energy exploration. Swiftly, the faster and more efficient method of petroleum exploration spread, making energy cheaper and more abundant, forever altering our world. The "black gold" frenzy swept across the globe, elevating the demand for trained professionals in oil exploration and extraction. Consequently, the University of Pittsburgh pioneered the first Petroleum Engineering program in 1915, laying the true foundation for this specialization.

The tasks of a petroleum engineer vary depending on their role within a project, but they often involve designing and managing exploration and drilling operations, as well as ensuring safe and efficient oil and gas extraction. This role also encompasses analyzing geological data, evaluating reservoir size and characteristics, and assessing associated project risks.

A petroleum engineer needs to stay informed about the latest research and technologies that enhance exploration operations and improve well productivity, all while ensuring compliance with local and international regulations governing oil and gas extraction processes, ensuring environmental protection. Collaboration with a multidisciplinary team, including technicians, engineers, contractors, geologists, and drilling experts, is essential in this role.

If you have an affinity for subjects like Mathematics, Sciences, Engineering, Geology, and Physics, then pursuing a career in Petroleum Engineering might be well-suited to you. To embark on this professional journey, obtaining a Bachelor's degree in Petroleum Engineering and undergoing appropriate training, along with passing any required licensure exams, is essential.

While some may view the future of Petroleum Engineering as uncertain given the global shift toward renewable energy to address climate change, it is not necessarily the case. The world still heavily relies on oil and gas as primary energy sources. The complete transition to renewable energy will likely take decades, keeping demand for petroleum engineers intact as they contribute to discovering new reserves and developing techniques that enhance production while minimizing negative environmental impact. Moreover, the knowledge, skills, and experiences acquired in Petroleum Engineering studies and work can serve as a solid foundation for transitioning to other engineering fields such as Chemical Engineering or Environmental Engineering, or even venturing into the renewable energy sector after gaining the necessary knowledge and training.

Texas A&M University at Qatar, a Qatar Foundation partner University, offers a Bachelor of Science program in Petroleum Engineering. The duration of the study is four years, and it stands as one of the premier undergraduate Petroleum Engineering programs in the United States. Moreover, the program is accredited by the Engineering Accreditation Commission (EAC) of Accreditation Board for Engineering and Technology (ABET) in the United States.

Reem Hussain Al-Abdulla

Head of Production Technology

Oil and Gas Sector

I have always had the desire to become an engineer, and in 2009, my dream came true when I graduated from Texas A&M University at Qatar with a Bachelor's degree in Petroleum Engineering. Shortly after, I joined the oil and gas sector, determined to succeed, and prove my competence as a woman in a profession traditionally deemed unsuitable for females.

During the initial years, my work demanded visits to oil and gas fields, overseeing exploration and drilling operations, and identifying the best practices for safe and efficient oil and gas extraction, often requiring me to attend regular meetings at sites far from Doha. I embraced these challenges with enthusiasm, always eager to embark on new work experiences to gain expertise. In 2016, I pursued a Master's degree in Reservoir Geosciences and Engineering from the IFP School at the National Institute for Petroleum and Renewable Energy in France, one of Europe's distinguished institutions for postgraduate studies in oil and gas fields. Currently, I serve as the Head of Production Technology, responsible for identifying suitable technologies for drilling operations, well development, and production enhancement, all while relying on my expertise to find solutions for any project challenges.

Words cannot adequately express the gratitude I owe to my family for their support in my achievements. They granted me the freedom to choose my specialization and continuously encouraged my academic and professional journey, celebrating every milestone with me.

I advise parents to help their children discover their career passions early on from the preparatory education stage, where students should determine their career interests while considering future job market demands. This does not mean imposing a specific major on them but rather providing multiple options and allowing them to make their own decision before graduating from high school.

What I cherish most about my profession is its dynamic nature. Each project differs from the next, presenting unique challenges and new prospects daily. The work often involves traveling to different sites and searching for solutions to diverse problems, which nurtures creativity. It is truly exciting! I also find it essential to keep updated of the latest research and emerging ideas in my field, as it evolves continuously. I also take immense pride and joy in knowing that every achievement in my career contributes to the development of Qatar's oil and gas sector and supports its economy.

To pursue a successful career in any field, one must start preparing themselves from the preparatory or at least the high school stage, exploring their skills and developing their capabilities. Time management, commitment, and diligence are three key skills for anyone aspiring to achieve professional success. Dedicate time to studying, completing assignments, and projects, and learn to adhere to and strive for success.

I encourage students to engage in engineering fields and consider Petroleum Engineering as a specialization. Engineering is a wonderful field with a promising future. Some might believe that the job market in Qatar may not require more Petroleum Engineers in the future due to the global shift toward renewable energy. However, oil and gas remain essential sources in Qatar's economy, and there will always be demand for Petroleum Engineers.

Some young ladies may fear venturing into engineering fields due to misconceptions, such as the notion that they are difficult or unsuitable for females. However, the landscape has changed drastically, and the challenges we faced 15 years ago, both during studies and in the workplace, have largely been surmounted. I firmly believe that we have paved the way for future generations, and through organizations like the "Qatari Women Engineers Association" (QWEA), of which I am honored to be a member and co-founder, we strive to clarify this for female students and present them with positive role models and success stories.

ECOLOGY

Have you ever paused to wonder about the multitude of species that inhabit our planet? Scientists estimate that Earth is home to more than eight million species, yet only slightly over two million of them have been identified so far. All these living organisms coexist within Earth's biosphere forming the web of life. Each organism, no matter how small or seemingly insignificant, plays a crucial role in maintaining the delicate equilibrium and biodiversity of our natural world. Understanding the connections between these living beings is fundamental to our survival, and this is where the role of the ecologist comes into play.

Ecology is a science that studies organisms in their natural environment. This includes studying how their behavior, abundance, and life histories are affected by their interactions with other species, their physical environment, and the climate. The levels of interactions are at the individual, population, or community levels. The field intersects with various other scientific disciplines, including biology, microbiology, botany, zoology, meteorology, geology, chemistry, and environmental sciences. Through the lens of Ecology, we gain deeper insights on the inner workings of the natural world. This understanding helps us devise better ways to preserve the biodiversity of Earth's ecosystems and manage our natural resources sustainably.

The role of ecologists is diverse, shaped by their specializations and the projects they undertake. It may involve fieldwork, research, writing scientific reports, assisting in governmental policy development, and educating the public on environmental issues. For instance, some ecologists may study behaviors of animals in their natural habitats, while others could monitor plant growth under specific climate conditions,

measure and evaluate the impact of urbanization on surrounding environments, or analyze the impact of pollution on aquatic life.

If nature is one of your passions, you should consider embarking on a career as an ecologist. Explore this field while at school. Engage in research, participate in science projects, or join a nature club. The Qatar Natural History Group offers a great opportunity to learn about Qatar's natural environment through monthy talks and field trips.

Your next step should be pursuing a university degree in ecology or another branch of biology. A good starting point is checking Qatar University's Bachelor of Science program in Biological Sciences. However, bear in mind that a career as an Ecologist like any other profession, is a commitment to lifelong learning. Its rewards, however, are immense. The thrill of exploration coupled with the knowledge that you are playing a key role in protecting our planet, is truly unparalleled. Your work may not be confined to laboratories or offices, it may often draw you closer to nature through field work.

Becoming an ecologist offers you opportunities to work in various settings like research, education, government organizations, NGOs, environmental consulting firms, and the sustainability departments of public and private enterprises.

Future prospects for ecologists look promising on both the global and local levels. Environmental sustainability stands at the core of Qatar National Vision 2030, and the country is home to several highly respected research institutions such as Qatar Environment and Energy Research Institute (QEERI) and the Environmental Science Center (ESC) at Qatar University.

Dr. Aspa D. Chatziefthimiou

Ecologist and Environmental Consultant

Earthna and National Museum of Qatar

I journeyed into ecology because I love "big picture" work: understanding how all puzzle pieces fit together in nature. Starr, my dog, gave me the most valuable insight on this interworking because she understood nature innately! My family influenced me unknowingly, by always encouraging us to play outside. This is why I feel I belong in nature.

I was born in Greece but studied in the United States. In graduate school, I was intrigued to understand the behavior of bacteria that marked the beginning of biological life on Earth. To study them I worked in extreme environments: hot springs and deep-sea hydrothermal vents, since these are believed to be modern-day equivalents. Of course, you cannot study change through time across 3 billion years unless you do it under the evolutionary lens!

What I love most about ecology is that it brings me to nature. It's a gateway profession offering endless possibilities to expand my horizons. Much like nature!

The desert, and its sea, mean the world to me! My career has flourished, and my network expanded in unprecedented ways in Qatar. As an ecologist, I took the leap from microbes to studying plant and animal communities as well. I became an expert in sustainability and conservation. As a human, I am always mesmerized by this country's beauty and by how welcomed I feel!

I currently live and work in Qatar. At Earthna, I lead a team of experts to assess the state of ecology in Qatar,

and draft policy for restoration and conservation for all deserts. I was also brought in by the National Museum of Qatar (NMoQ) to infuse ecological and sustainability aspects into their exhibitions. We also work together on the blueprint for setting up outdoor exhibitions in the most sustainable way.

Part of our work is to help people realize that climate emergency is an "everyone, everywhere, all at once" problem, here and now! We all need to put our hands together. Strive to do better. Do more. Having local ecological knowledge is key to making a difference locally! That's why I am dedicated to outreach, educating the whole population, not just students, and turning nature visitors into stewards, with an agency to become part of the solution. Citizen science is another vehicle, so I co-developed the iNaturalist Projects: Q-Birds, Q-Plants, and Q-Wild-Nature. I encourage everyone to join.
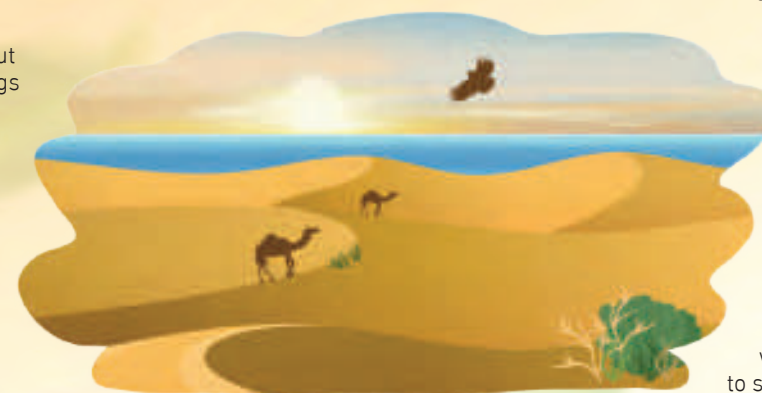
My impulse when it comes to making scientific fields more attractive to students is to take each student by the hand, to show them how creative science is. How beautiful and exciting it is to make new discoveries. How awesome is the power of knowledge! Science is challenging yet that is part of the wonderful adventure. How can this misconception change? We need more representation in the media. More exposure to scientists. I don't think that anyone has sat down with Jane Goodall and found her eco-adventures boring!

The future is bright for those who will choose a career in ecology in Qatar. There's a lot to do, but there aren't enough hands and minds to carry out ecological work. Moreover, regardless of the chosen career path, integrating sustainability into one's profession is essential, and ecology serves as the cornerstone of sustainability. So, I see ecology as an integral part of not just ecologists. "Ecology lite" sort of a thing.

My advice to school students who are in the process of planning their careers is to ponder: what would I like to be thinking about for 40 hours a week? Where would I like to be spending that time? What is a challenge humanity faces that I would like to contribute to solving? If the answer is a career in ecology, students should know that no typecast exists for the profession nor a common skill set. I got my PhD to become a critical thinker and lead research teams. I chose fieldwork because I love being in nature. My next dream career move is to fundraise to buy land and in this way protect it. Other colleagues work on big data, remote sensing, policymaking, and teaching. If there is one skill that binds ecologists together is our unquenched love for nature!

NAVIGATING THE SHIFTING MEDIA PARADIGM AND FUTURE PROSPECTS

Exclusive Interview with

Dr. Khalid Al-Shafi

Editor-In-Chief of The Peninsula

Qatari journalism, under the guidance of many inspiring visionaries, is more than a profession; it is an integral part of the nation's development. This legacy is rooted in the unparalleled support for media freedom and decentralization since the sector's inception. The Qatari media landscape, with its revolutionary approach, has blossomed into an entity that transcends regional boundaries. As a testament to this, the evolution of local media was not confined to news dissemination; it has since evolved into a sphere of interaction, influence, policy-making, and shaping public opinion. In today's

intricate media landscape, Qatari journalism plays a pivotal role in crafting a genuine Arab understanding and self-perception amid the ever-evolving digital era.

Dr. Khalid Al-Shafi, a distinguished Qatari journalist and the Editor-in-Chief of The Peninsula newspaper, an English daily which holds a central position within this media arena, being one of the inspiring individuals to propel its development and growth. He also serves as an Assistant Professor in Mass Communication at Qatar University. With a Ph.D. in Media, his career trajectory has

been marked by accomplishments and contributions that have significantly impacted the country's media landscape. Al-Shafi's journey began at Qatar News Agency (QNA) in 1991, where he ascended through the ranks to eventually become the Managing Editor. He further assumed vital roles in various ministries, from the Ministry of Business and Trade, now known as the Ministry of Commerce and Industry, to the Ministry of Foreign Affairs, including acting as the Deputy Head of Mission and Chargé d'Affaires in Thailand. With a rich history in Qatari journalism, Al-Shafi's insights reflect the transformation and potential of media, paving the way for the future. We had the privilege of engaging in an illuminating conversation with him to delve deeper into his perspectives and unravel the intricate and deeply rooted scene of Qatar's media landscape.

Let's start by discussing your career in journalism and the media. Why did you choose this field specifically?

I began my journalistic work at an early age, with my first professional engagement being as an intern

> " Like any other profession, media requires diligence and effort. Qatari youth should benefit from the opportunities in education, training, and services that the state provides for students in general. The world of media is vast and not confined to specific areas. Engaging in a field that one is passionate about will enable each student to achieve their media objectives and potential with success as their ally. The available media infrastructure in Qatar facilitates the excellence we aspire to witness in our sons and daughters. "

editor at Qatar News Agency. I learned a great deal during my years there, which encouraged me to pursue my university studies in the field of Mass Communication. I gradually advanced through the journalistic ranks at the agency, eventually becoming the Editor-in-Chief. This experience was pivotal in deepening my passion for journalism, prompting me to continue my postgraduate studies in the same field. I earned a Ph.D. in Media, supplementing practical experience with academic knowledge. From the outset, I recognized that journalism required patience, perseverance, humility, and a willingness to let go of certain comforts found in other careers.

Was your family supportive of this decision?

Undoubtedly, sustaining both practical work experience and education simultaneously for an extended period of time without the support of family and conducive circumstances would have been challenging.

Based on your role as an Assistant Professor at Qatar University, do you believe the upcoming generations can build on the achievements Qatar has made in the media field over the past decades?

Qatar has asserted a robust media presence regionally and globally, through notable publications like "Al Doha" and "Al Saqr" magazines, which used to be distributed across the Arab world. The diverse television channels and distinguished Arabic and English print media in Qatar have also showcased its media prowess. Given the country's substantial support and resources directed toward its media, the outstanding performance is likely to persist. Qatari youth, armed with modern technological knowledge, will continue proving their excellence across visual, auditory, and even digital media platforms. This bodes well for the rise of talented media professionals, as training opportunities are accessible to all and the existing infrastructure in Qatar stimulates work and facilitates success. Thus, seizing these opportunities and maintaining dedication to the craft is essential.

Do you observe reluctance among Qatari youth to pursue careers in fields like journalism or communication?

I don't believe there's reluctance toward media work. In fact, there's an increasing demand for media-related jobs in general. This necessitates continued support and incentives to foster creative Qatari youth in these careers.

With the significant impact of social media on our societies, do you think the perception of journalism as a viable career has changed?

The perception of journalism as a career hasn't changed, but the trust in traditional media and print journalism has somewhat wavered under the strong influence of digital media. Over time, as the initial hype around online media subsides, print journalism is regaining some of the people's confidence due to its credibility in conveying reliable news sourced from reputable outlets. In contrast, online media delivers

swift but often imprecise and conflicting news. Traditional print media and journalism, in general, will endure because the need for them persists despite changing lifestyles and the information overload brought on by technological advances.

Do you think artificial intelligence will impact careers like journalism more significantly in the future than the impact technology has already had in recent years?

Certainly, artificial intelligence will play a pivotal role in the media sphere. It's anticipated to bring about a revolution comparable to its influence in other fields and careers. Its impact will be positive if regulated by legal and scientific parameters, and its usage is well-structured. However, if AI's doors are left wide open to everyone, similar to the case with social media, it may lose people's trust over time, diminishing its significance. Nevertheless, its impact will be profound if it's utilized responsibly and not abused.

Through your book "Qatari Press: Present Challenges and Future Prospects," you explored the trajectory of journalism in Qatar and its evolution over the past decades. In your opinion, do you foresee pioneering experiences in the field of journalism that could achieve an impact comparable to what publications like "Al Saqr" or "Al Doha" magazines accomplished, or do you believe that digital journalism has become the future?

Despite the strong influence of digital journalism and its dominance over a significant share of the advertising market, traditional print journalism and media, in general, will continue to fulfill their mission. The challenges they face will give rise to innovative experiences, as electronic media is also available to complement print journalism, scholarly and cultural magazines, and media outlets.

Experiences of leading Qatari magazines like "Al Saqr," "Al Doha," and "Al Umma" occurred during specific historical periods. These magazines carried messages and aspirations embraced by generations of that era, reflecting the concerns and ambitions of the 1970s and 1980s. Consequently, it's expected that similar experiences will emerge, but with independent identities, ideas, and concerns reflecting the needs and future aspirations of the targeted generations. This is to ensure we don't become captives of the past, cherishing and learning from its experiences, while not yearning for its return as much as we strive forward into the future. Achieving this requires us to keep pace with the developments across all levels, and to think about the future and the needs of upcoming generations more than reflecting on the past, admiring it, or being awed by the achievements of our forefathers. The past is the foundation upon which we build, a legacy we cherish, but it should not serve as a perpetual cushion.

What ambitions do you still aspire to achieve in the future?

As a university professor, I aspire to raise a generation that carries the banner of Qatari media with competence and prowess. On the journalism front, I aim to keep my work updated with all developments, and to establish a robust standing for Qatari media on regional and global levels.

What advice do you have for every student aspiring to build a career in journalism?

Like any other profession, media requires diligence and effort. Qatari youth should benefit from the opportunities in education, training, and services that the state provides for students in general. The world of media is vast and not confined to specific areas. Engaging in a field that one is passionate about will enable each student to achieve their media objectives and potential with success as their ally. The available media infrastructure in Qatar facilitates the excellence we aspire to witness in our sons and daughters.

8 AI TOOLS TO RESHAPE YOUR EDUCATION JOURNEY

Artificial Intelligence, or AI, transcends tech jargon – it is a dynamic force capable of solving intricate challenges faster and more efficiently than humans. But what significance does it hold for students? How can AI tools enrich their educational voyage?

These AI tools combine advanced algorithms with machine learning to simplify student workflows. Whether managing schedules, assignments, or research, they automate tasks, saving students precious time and effort.

Moreover, AI tools provide students with a wealth of quickly accessed information. AI-powered search engines swiftly sift through vast data, providing pertinent resources from online libraries to academic databases. This not only aids research but also broadens students' knowledge horizons.

Yet, AI's benefits for students go beyond task simplification and knowledge access. These tools elevate the learning experience itself. Personalized learning paths, interactive study aids, and real-time feedback adjust to each student's pace and style, enhancing understanding, retention, and academic performance.

Integrating AI into education is not just about convenience or swift data retrieval. It is about crafting a more engaging, tailored, and effective student learning journey, empowering them with technology's finest and newest tools.

Read along to discover our collection of 8 tried and true AI tools for students:

Text Focused

QuillBot (quillbot.com)

An AI-powered writing companion that ensures clarity and originality by generating engaging and unique content. With its advanced AI, it understands context, developing paraphrases that preserve the original meaning with fresh wording. This versatility extends to entire paragraphs, making it perfect for essays and reports. Beyond that, Quillbot refines grammar, enriches vocabulary, and tailors tone.

- Free (limited), with a paid premium option.
- Accessible on browsers.
- Browser and Microsoft word extensions available.

ChatGPT (chat.openai.com)

GPT-3 and GPT-4 are top-tier chatbots with unmatched versatility, understanding various prompts for students' need, and reshaping student learning. These personal tutors assist in research papers, complex questions, coding, and much more. For academic writing, they are game changers, generating content, offering insights, and structuring papers. Whether combating writer's block or seeking fresh perspectives, GPT-3 and GPT-4 deliver assistance. Beyond writing, they excel in answering complex queries on diverse subjects, engaging in interactive learning experiences. While coding enthusiasts can use their guidance in multiple programming languages, helping beginners and experts alike.

- Free (limited), with a paid premium option.
- Accessible on browsers and mobile device applications.

Grammarly (Grammarly.com)

An AI-powered writing tool that corrects grammar, detects plagiarism, and enhances writing styles—a lifeline in academia. It empowers students, fresh and experienced, to express themselves effectively. Adaptable to any style, Grammarly ensures error-free content. From emails to research papers. It suggests improvements in real-time, while preventing unintentional plagiarism. It also excels at enhancing text with synonyms and style insights.

- Free, with a paid premium option.
- Desktop application available, and also accessible on browsers and mobile devices (Android and iOS).

Design Focused

Canva (canva.com)

A renowned design tool that employs AI to smartly personalize recommendations for templates or designs, considering your past usage and preferences. This means that the more you use Canva, the more it understands your design style and provides you with tailored suggestions.

It comes packed with AI powered photo editing tools, like removing backgrounds accurately and resizing images without quality loss.

Canva's AI streamlines design with personalization, making it ideal for visually engaging student projects and presentations.

- Free, with a paid premium option.
- Desktop application available, and also accessible on browsers and mobile devices (Android and iOS).

Fotor (fotor.com)

In the world of art, Fotor is an AI-driven gem, turning text prompts into art pieces, perfect for design and art students. It is capable of effortlessly turning words into art; just input a text prompt, and AI generates unique artworks, from sketches to digital paintings. It is also a hub for learning and innovation, as you can experiment with prompts to gain fresh perspectives and expand your creativity.

- Free, with an optional paid plan that unlocks additional features and removes advertisements.
- Desktop application available, and also accessible on browsers and mobile devices (Android and iOS).

Personal Assistants

Otter (otter.ai)

Immerse yourself in lectures without distractions; Otter.ai transcribes spoken words into real-time text. It is your personal assistant that lets you focus on understanding rather than note-taking. It is capable of transcribing lectures and voice notes, and the OtterPilot applciation seamlessly integrates with apps like Teams, Zoom, and Google Meet, to be your note-taker in all academic sessions.

- Free for 300 audio minutes per month, 30 minutes per recording. However, it has multiple paid premium options for individuals and businesses.
- Accessible on browsers and has browser extensions and a mobile device (Android and iOS) application called OtterPilot.

Bard (bard.google.com)

A Google AI-powered assistant that instantly answers complex queries, aids in efficient planning, and quickly retrieves information. Designed to tackle intricate questions, it offers accurate insights, benefiting students studying or doing assignments. Beyond that, it excels in time management by understanding your schedule and suggesting efficient daily plans to keep you organized, making juggling all tasks in your academic life easier than ever!
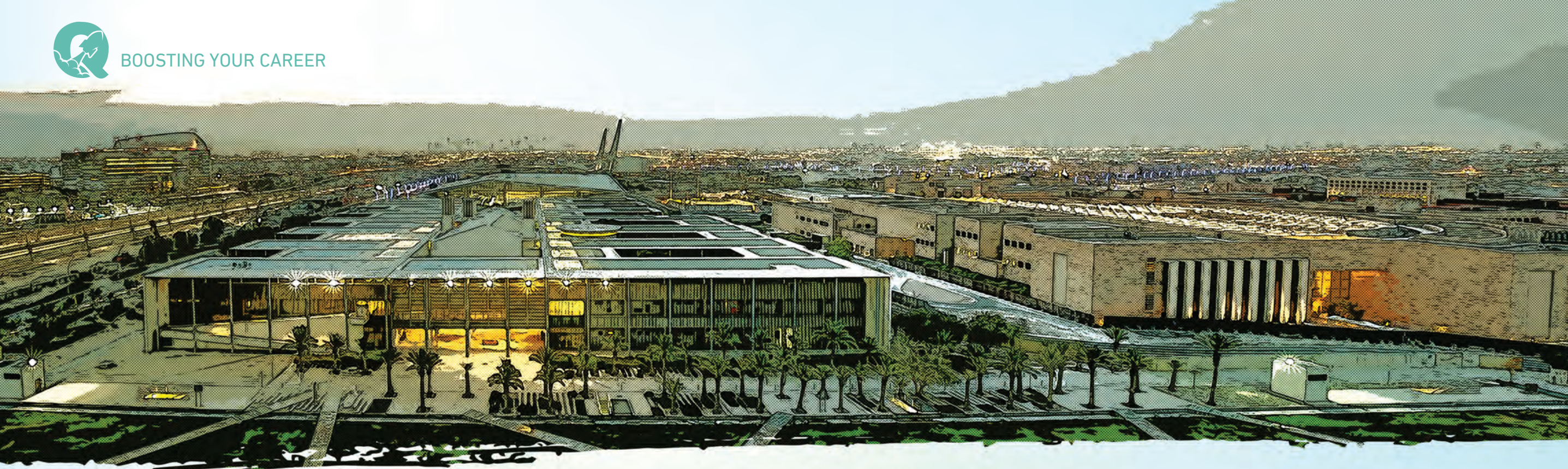
- Free.
- Accessible on browsers.

Tutors

Stepwise Math (stepwisemath.ai)

Struggling with math? Powered by AI, this personal tutor identifies your struggles and guides you through problem-solving, teaching you everything from simple equations to complex calculus, integrations, and differential equations. Stepwise Math tailors courses to your pace, generating assignments to enhance your skills. It is your go-to for acing math tests.

- Paid, with different discounted subscription options for students, families, and schools.
- Accessible on browsers and through mobile device (Android and iOS) applications.

10 TIPS FOR AN EXCELLENT UNIVERSITY APPLICATION

Have you successfully wrapped up your final year in high school? If so, it's time to gear up for the exciting journey of university life.

During your high school years, you should have become well-acquainted with your strengths, passions, and future aspirations with the guidance of your school's counselor. You've likely charted a course for your desired career path and thoroughly explored various universities and programs that align with your ambitions.

With all this groundwork completed, you've probably even shortlisted the universities you aspire to join and evaluated your chances of acceptance at each institution. So, what's next? Don't waste any time; dive into preparing your applications for your chosen universities.

Explore the following tips that ensures your application is comprehensive and boosts your acceptance chances:

1

Get Organized and Start Early

Map out the application procedures for each university on your list and the specific requirements for each. Application prerequisites and deadlines vary from one institution to another, and each country has its distinct application and admission process. Assemble your information and necessary documents, and reach out to those you've chosen to write recommendation letters for you. Make sure you submit your applications and all relevant materials well ahead of the deadlines. Good organization will save you valuable time and effort.

2

Verified Information and Details

Precision is paramount. Ensure your application information is accurate and devoid of any errors. Carefully review it multiple times to guarantee it is correct. Ensure accuracy and include as much details as possible. You might also consider tapping into the expertise of one of your teachers or your counselor to ensure your application is polished and refined. Compile a checklist of all the required documents and confirm that all are submitted.

3

Keep Track of Recommendation Letters

Most universities require letters of recommendation to support your application, showcasing your academic and personal strengths. Coordinate this aspect with your teachers or school counselor and make certain they have the correct contact information for the respective universities. Provide them with ample time to craft recommendation letters that effectively highlight your attributes.

4

Keep Backup Copies

Keep duplicates of crucial documents and significant communications, such as passwords and email correspondence with each university, in a secure location. This could entail cloud storage or an external hard drive. This precaution ensures that unforeseen technological issues won't impede your progress.

5

Communicate with Admission Offices

Never hesitate to engage with the admission offices of the universities for further guidance in cases of ambiguity. Also, reach out to them if you haven't received automated confirmations regarding the receipt of your application, recommendation letters, or supplementary test scores.

6

Regularly Check Your Email

Use a professional email address that reflects your name, possibly incorporating your initials. Establishing a designated email for university applications is also helpful to ensure important messages from universities don't get lost in the clutter of your inbox. Monitor your email daily; you might receive requests for additional information or documents from universities.

7

Craft an Authentic Personal Statement

Many universities require a personal statement in which you expand on your background, articulate your interest in your chosen field of study, and justify your selection of that particular institution. Accentuate your distinctive skills and accomplishments across your academic journey as well as your extracurricular endeavors, whether that be volunteering, sports, or scientific and artistic pursuits. Cite instances that highlight your soft skills like leadership and teamwork. Outline your career aspirations that you aim to realize through university education. Avoid copying others' content; draft a statement that genuinely embodies your unique identity and allocate enough time for this task to gather your thoughts and articulate your sentiments.

8

Prepare Ahead for Additional Examinations

Certain universities require taking evaluation exams like SAT, ACT, or English language proficiency tests such as TOEFL and IELTS. Typically, the results of these exams are directly sent to universities. Register for these tests early to ensure that your scores reach the universities before application deadlines. Thoroughly prepare, particularly in your final year of school, to achieve the required scores.

9

Mind Your Social Media Presence

Social media has emerged as a crucial tool for projecting a professional image. If your accounts are publicly accessible, a quick online search could reveal considerable information. Ensure that your open accounts don't contain inappropriate content that could impact your acceptance prospects.

10

Ready Yourself for Interviews

Certain universities might require a personal interview, especially for early admissions or scholarships. Prepare yourself to answer questions about why you've selected that university, your passion for your chosen major, and your familiarity with it. You might also discuss your future goals and plans. In any case, enthusiasm is a valuable asset!

For some, the university application process might seem daunting and exhausting. Yet, with adequate preparation and effort, it's far from insurmountable. Ultimately, it marks the initial steps into a fresh phase of your professional journey and provides an avenue for personal growth. Don't stress while awaiting application outcomes, as it won't change anything. Regardless of the result, remember that while obtaining a university degree is pivotal, it's not the only determinant of your career success. Your future is always shaped by your thoughts and actions.

ALL YOU NEED TO KNOW ABOUT

Whether you are a student seeking university admission or scholarships, a graduate aiming to enhance your employability, or a seasoned professional striving to develop your career skills and embrace lifelong learning, mastering a second language will be an essential aspect in your endeavors. There are various factors to consider before choosing a language to learn, such as the specific institutions you wish to apply to or the country you plan to work in. However, the most popular choice worldwide is English – the language of opportunities. With over two billion speakers, English stands as one of the most widely spoken languages globally and is recognized as the official or one of the official languages in many countries. Furthermore, technological advancements and heavy reliance on computers and the internet have propelled the widespread use and significance of English in the daily lives of students and professionals alike, extending even to leisure activities and hobbies. As English fluency became a fundamental requirement in numerous academic and

professional fields, diverse educational, governmental, and professional entities have developed various proficiency tests and assessment systems with the aim of establishing a unified standard for English language proficiency worldwide.

However, possessing a skill and having tangible proof of that skill are entirely different things. Holding tangible certification that attests to your English language proficiency will open up numerous opportunities in education and employment. Prestigious universities worldwide, like Yale, Princeton, Oxford, and others, as well as universities in Qatar such as Qatar University and Education City universities, often require students to obtain either TOEFL or IELTS certifications with specific minimum scores. Additionally, thousands of organizations and institutions around the globe recognize these certificates as evidence of English language proficiency when evaluating their employees. Notably among them are the United Nations on the international level, Qatar Foundation locally.

Which One to Choose?

No doubt you have heard of the "Test of English as a Foreign Language" (TOEFL) certificate, offered by the American Educational Testing Services (ETS); and the "International English Language Testing System" (IELTS) provided by the British Council in collaboration with the Cambridge Assessment English, and the Australian International Development Program. As previously mentioned, obtaining a certificate of this kind aims to open as many doors as possible for its holder. Therefore, the first criterion for choosing the appropriate test should be the global recognition of the certificate.

The second criterion relates to your purpose in obtaining this certification. If you intend to apply to a specific institution, you should reach out to them to determine which certificate they recognize. It is important to know that the nature of the test itself varies depending on the purpose. For IELTS, you can opt for the Academic test, which qualifies you for university admission and higher education, or you can take the General test – relatively easier than its counterpart, designed for immigration purposes.

It is also advisable to choose a test that aligns with your linguistic background. TOEFL is based on American English and is, therefore, recognized in American and Canadian universities, while IELTS relies on British English, making it accepted in the United Kingdom, Australia, and Scotland. Although the two dialects are quite similar, you will find that accent is not the only difference between them. Some words are spelled differently and carry different meanings, and there are certain words used in American English that are not employed in its British counterpart, though they may be understood.

If you have reached this stage and your choice is still unclear, and both tests offer what you need, understanding the testing mechanisms might help you decide:

The IELTS test is conducted 48 times per year and is offered in both Academic and General formats. It is administered in pre-designated centers, totaling around 900 centers worldwide. The test duration ranges from two and a half to three hours. On the other hand, the TOEFL test can be taken on paper or online (known as the TOEFL iBT test). It is available in more than 4500 equipped centers worldwide, offering the test over 50 times annually. However, the online version cannot be taken from home and has a duration of approximately four hours.

Both tests consist of the same four sections:

Listening

The TOEFL test takes 60-90 minutes, while the IELTS test takes 30 minutes. This section evaluates your ability to comprehend English speech by listening to conversations or short lectures and answering questions related to them.

Reading

The TOEFL test takes 60-80 minutes, and the IELTS test takes 60 minutes. In this section, you will read multiple texts on various topics and answer questions derived from these texts to assess your reading speed and comprehension without the aid of translation tools.
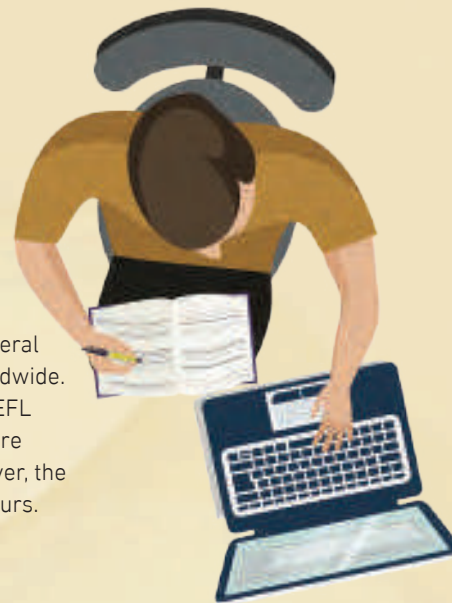
Writing

The TOEFL test lasts for 50 minutes, whereas the IELTS test gives you 60 minutes. You will be required to write a short essay on one or two topics or provide explanations for presented charts or graphs.

Speaking

This is a fundamental and significant difference between the two tests. In the TOEFL test, your speech is recorded using a microphone, and your pronunciation is evaluated later. The speaking section lasts for 20 minutes. On the other hand, in the IELTS test, you will have a face-to-face interview with an examiner from the application center, which typically lasts for a quarter of an hour.

Consider carefully which of the two testing systems suits you better in terms of test duration and style, especially concerning the speaking test. Some individuals might find it challenging to speak their second language in front of another person, and in such cases, the TOEFL test format may be more suitable.

Preparing For The Test

Now that your decision is clearer, it is essential to understand that English proficiency tests assess your language abilities, unlike other subjects where memorization and comprehension of specific topics help you pass the exams. Nonetheless, preparation for these tests is crucial, and it involves enhancing your language skills and practicing test-taking strategies to perform well within the limited time provided. While you can always retake the test if you are dissatisfied with the results, it consumes both your time and money. Therefore, it is better to prepare well from the first attempt.

The preparation process consists of two essential stages:

First Stage:

Focus on improving your language abilities and practice using English in writing, reading, speaking, and listening. There are various resources available to assist you during this stage. We recommend concentrating on sources that use the dialect in which you will be taking the test, whether it is American English or British English.

For example, you can visit news websites that publish materials in English to practice reading news articles quickly and understanding them. Listen to the accompanying audio recordings to assess your comprehension of spoken English. Utilize these written materials to expand your English vocabulary and improve your ability to express yourself in writing by imitating the style of English journalistic writing. Choose a topic from the ones you have read and write your opinion about it, while keeping track of the time needed to complete the writing.

Do not overlook the significant benefit of watching movies or English-speaking videos on platforms like YouTube. They will help you train your ear to different words and accents, enrich your English vocabulary with words used in daily life, and enhance your conversational and listening skills.

During this stage, practice using English as a means of communication, either by conversing with English speakers or practicing with family members to reap the benefits together. You can also practice pronunciation alone if you do not have someone to converse with, using the voice pronunciation feature available in most electronic dictionaries. Try pronouncing and repeating words you find challenging. You can even have conversations with yourself on a chosen topic in English, asking and answering questions in a smooth and straightforward manner, depending on your language proficiency.

Enrolling in in-person language courses is also an option if you have the ability and time. Notably, there are intensive training courses specialized in preparing candidates for English proficiency tests, guiding you through different examination sections. These courses particularly shine in the speaking section, providing you with peers and instructors ready to converse with you and improve your language skills in general.

Second Stage:

This stage involves preparing for the actual test by relying on available online resources that allow you to solve sample tests of the examination you will take, assessing the speed and quality of your performance. Once you officially register for the test, the organizing authorities will provide you with various training materials, including test samples and tips from expert trainers on time management during the test. These tests are known for their strict time constraints, which some find challenging. Nevertheless, with proper preparation, you will find the test easier, and see its allotted time to be more sufficient.

In conclusion, be realistic in your expectations regarding the result you aim to achieve and give yourself ample time for preparation. Test yourself at the beginning of your preparation journey, and then reassess your performance after some time to ensure that your preparation approach yields the desired results.

Do not get discouraged if you feel like your progress is slower than anticipated. Learning a language is a complex process influenced by many factors, and it is a gradual process that rewards dedication, perseverance, and practice. Either you use and develop your language skills, or you simply lose them.

CAREER DEVELOPMENT INTERVENTIONS IN EARLY FORMATIVE YEARS

Life is a journey, filled with crossroads that shape the path ahead. One of the most significant crossroads in this journey is the choice of a career. Although career development might seem distant for young children, research shows that early career guidance plays a pivotal role in shaping their future. In this article, we explore the profound importance of early career development in children's formative years, drawing insights from established theories and innovative initiatives that are transforming the way we prepare the next generation for their academic and professional futures.

Theoretical Foundation: Understanding Early Career Development

The pursuit of a career is a journey of immense significance. At its core lies a multitude of choices, each contributing to the intricate design of an individual's life path. Unraveling the intricacies of career development requires a deep understanding of the theoretical background that underpins this transformative process. The evolution of career development theories has witnessed a dynamic shift toward recognizing the importance of early engagement with children's career aspirations. In earlier times, career theories primarily focused on adult stages of life, often neglecting earlier stages. However, the paradigm has since transformed, acknowledging that the foundations of career development are laid long before one enters the workforce. Many comprehensive theories emerged. One of which was Donald Super's career development theory, which underscores the role of self-concept and the interplay between personal attributes, interests, and the world of work. Super's insights suggest that individual career paths are not isolated choices but rather manifestations of evolving self-concepts and aspirations. Building upon this foundation, John Holland's vocational interests theory adds another layer of depth. By emphasizing the link between individual preferences and career satisfaction, Holland's theory highlights the critical connection between early exploration and long-term career fulfillment. Both of these foundational theories emphasize the significance of early career guidance, as they reveal how the seeds of career choices are sown during childhood, cultivating a sense of purpose and direction that will shape future decisions.

As our understanding of human psychology deepened, so did the realization that career identity starts taking shape in childhood, spurred by experiences, influences, and aspirations that begin to manifest at an early age. These evolving perspectives challenge us, as career development specialists, to pivot our efforts toward interventions that empower children to explore, discover, and align their innate potential with future career paths, ultimately shaping their journey of self-discovery in a purposeful and informed manner.

Practical Experience: Qatar Career Development Center Leads the Way

The dynamic nature of today's job landscape demands that children be exposed to the diversity of careers early on. Notably, Qatar Career Development Center (QCDC)'s "Little Employee" initiative has emerged as a resounding success in achieving this objective. This initiative provided children with a firsthand glimpse into different careers and work environments, sparking curiosity and kindling a sense of exploration that can profoundly shape their future decisions. The impact of "Little Employee" was remarkable, drawing participation from over 600 children across 21 prominent institutions in Qatar. The positive feedback received from both parents and educators attests to its effectiveness. Similarly, QCDC's collaboration with KidZania has met significant success by offering engaging edutainment experiences. This initiative allows children and adolescents to immerse themselves in various career tracks under the expert guidance of specialists. Moreover, it equips them with transferable soft skills that promise to benefit them irrespective of their chosen career paths. Through these initiatives, QCDC effectively underscores the notion that early exposure informs career decisions, and more importantly, nurtures a culture of career curiosity among children.

The transformational bridge between theoretical frameworks and practical application lies in interactive learning that turns theoretical concepts into tangible real-world scenarios. Career games, such as QCDC's "Career Heroes" card game or "What do I Want to Be When I Grow Up?" puzzle, intertwine learning with entertainment, offering children a dynamic approach to developing decision-making skills and exploring career options, while providing parents with the opportune context to initiate dialogue with their children on these topics.

The power of gamification in career development cannot be overstated, introducing an element of excitement and engagement into the career exploration process. Through interactive challenges, simulations, and virtual experiences, gamification captivates children's attention while simultaneously instilling valuable skills. Research shows that gamified career development initiatives enhance decision-making abilities, and promote critical thinking, problem-solving, and strategic planning – skills that are crucial for future success.

Such guided programs have also shown massive effects on participants' confidence, which is the cornerstone for future success. Hence, early career guidance directly influences the development of self-confidence in children, as they explore different careers, learn about their interests, and recognize their abilities, they develop a sense of self-assurance that is invaluable for future endeavors. Childhood is also a period of mental and physical growth. As cognitive abilities develop, so does the child's capacity for decision-making. Research emphasizes the impact of early career guidance in cultivating robust decision-making skills. Thus, career guidance interventions can provide children with practical experience in planning and goal-setting, fostering skills that will serve them well as they navigate their careers. By introducing the concept of informed choices early on, we empower children, assisted by parents and guardians, to approach decisions confidently and strategically.

In conclusion, the significance of early career development in children's formative years cannot be overemphasized. The theories, initiatives, and practices discussed underscore the significant impact of early exposure to career guidance on shaping individuals' life trajectories. As career development specialists, educators, and stakeholders, it is our collective responsibility to further these efforts and empower our children with the tools they need to succeed in the world of tomorrow —a success that extends beyond individual aspirations to be an investment in a collective future that is innovative, adaptable, and resilient. By sowing the seeds of career awareness in children's formative years, we pave the way for a generation equipped to navigate and lead Qatar's development efforts through the complexities of the modern world.

CALLS FOR A NEW WAVE OF INNOVATION IN CAREER GUIDANCE AND COUNSELING SERVICES

The world has witnessed numerous transformations centered around innovation, renewal, and revival in various sectors and fields, especially during the COVID-19 pandemic. As a result, voices advocating the redesign of educational and training opportunities have intensified, emphasizing the need to equip individuals to tackle challenges and focus on transferable skills and readiness for future professions.

Defining and identifying careers of the future is not a simple task, as current practices reveal. These careers may include traditional occupations revitalized through modern tools or professions that are linked to tourism and national identity requirements. They may also encompass careers that are entirely novel, particularly within the digital technology sector.

Undoubtedly, it is essential to connect the selection of future careers with a suitable system of career guidance and counseling. Despite the considerable advancements in the field of career guidance since its inception in the late 19th century, pioneered by the American Professor Frank Parsons, there is an increasing interest in reviewing the services and programs related to career guidance and counseling provided globally and locally.

This is to enhance awareness and understanding of the policies and practices in career guidance and to challenge practitioners and policymakers worldwide to consider the risks and opportunities that future will bring, integrating these ideas into career guidance policies and practices.

This notion is supported by a report issued by the European Training Foundation (ETF) in 2020, where several models from around the world were studied based on their innovative impact, such as the use of information and communication technologies, content management system development, community partnerships, the role of parents, positive impact guidelines, effective implementation, and the adaptability to different contexts.

When reviewing this report, it is important to note that these practices have been developed and tailored to address distinct challenges encountered by the career guidance systems in each country. Initiatives and models related to vocational education and training (VET), lifelong learning, and all types of service providers, including public employment services, schools, universities, and non-governmental organizations, have been observed. It has been also noticed that all the countries mentioned in the report offer career guidance systems in schools and universities, and the government supports vocational centers to assist unemployed workers and employees. Moreover, employed and working individuals have access to a wide range of services provided by numerous professional trainers and advisors. There is also, there is a government vocational rehabilitation system that supports people with disabilities in entering the workforce.

Considering all these examples elaborated in the detailed report, the focus should be on designing career guidance programs and services that prioritize the human element and their needs, also known as "Human Centered Design." These programs and services should encompass personalization and consider that career guidance and counseling aim not only to secure employment but to enhance mental well-being, demonstrate the societal impact of individuals, and highlight their multifaceted roles that extend beyond a certain age. This way, individuals can unlock their full potential, pursue opportunities, or even create new ones for themselves.

Dr. Rich Feller, a professor of career guidance and development at the University of Colorado and past president of the National Career Development Association (NCDA), offers a unique model of innovation in career counseling services through revisiting and redesigning a set of specialized tools and programs. These tools explore human capabilities, interests, and inclinations, such as the 'YouScience' assessment program, which assists students in understanding their abilities and talents to match them with real-world job opportunities.

In 2021, Dr. Jaana Kettunen, Deputy Director of the Finnish Institute for Educational Research, conducted a study titled 'Career Experts' Conceptions of Innovation in Career Development.' The study concluded that innovating in career guidance and development involves the introduction of new services, the creation of programs responsive to population needs and demographic changes, the development of governance and service standards, and investment in synergy and collaboration between sectors.

When discussing innovation, it is essential to mention the call for reevaluating and developing theories related to career guidance and counseling, or even developing a comprehensive theory from an Islamic perspective. There are also calls for reinventing assessment tools, incorporating various dimensions, particularly comprehensive human empowerment, considering the characteristics of different generations and their reliance on digital technology. This highlights the necessity of capitalizing on local and global digital advancements by providing platforms with worldwide and local information on key interests and values related to professions and self-guided choices for new specializations. This innovative journey can undoubtedly contribute to the development of services and programs, benefiting all sectors and individuals alike.

Dr. Rania Al Sawalhi
Education and Career Guidance Expert

EMBRACING DIVERSITY

TOWARD A CREATIVE INCLUSIVE WORKFORCE

In the modern world of business, inclusivity is taking centerstage worldwide. With local society's growing awareness of the significance of diversity, Qatar Career Development Center (QCDC) has taken the lead in opening doors for individuals with disabilities, in particular those with learning challenges and who are on the Autism Spectrum, to thrive in the workforce. Over the past years, these relentless efforts in autism awareness have laid the foundation for a more inclusive workforce in Qatar.

QCDC's commitment to autism awareness from a career development perspective is evident in the center's various programs, initiatives, and collaborations with specialized entities like Awsaj Academy. These initiatives raise awareness and enhance the understanding of the challenges individuals with autism face in joining the workforce and developing their careers. By engaging experts, decision-makers, parents, and the community, QCDC facilitates open conversations that debunk myths, promote empathy, and empower individuals with autism to lead fulfilling professional lives.

Consequently, the notion of integrating individuals with autism into the workforce is no longer a distant dream; it's an emerging reality embraced by many companies and organizations across Qatar, supported by Qatar's leadership and laws, and strategically favored in its National Vision 2030. While traditional perceptions of neurodiversity were limited, today's awareness highlights the unique strengths and abilities that individuals with autism bring to the professional arena. Their meticulous attention to detail, robust analytical skills, and exceptional memory are just a few traits that can contribute to organizational success, and long-term societal and economic development. Thus, the concept of workplace inclusion has gained momentum in Qatar, and globally, with organizations acknowledging the immense potential diverse talents offer.

The journey toward realizing this potential is paved with inspiring stories and invaluable guidance from experts like Dr. Robert Naseef, Dr. Stephen Shore, and the iconic Dr. Temple Grandin. QCDC has partnered with these bright minds across multiple years and initiatives, to deliver training programs and awareness webinars on these issues, with the ultimate goal of incorporating their inspiring stories, invaluable insights, and expertise into the inclusive narrative the center employs in this journey.

Dr. Robert Naseef, a psychologist and parent of a child with autism, has continuously offered unique insights into both personal and professional aspects surrounding autism.

His advice on collaboration between parents and professionals echoes QCDC's collaborative approach. Dr. Naseef advocates for a holistic approach that acknowledges individual strengths and challenges while fostering open communication. "As parents, you are experts about your child, while professionals are experts in autism," he advises, directing families and support networks to take further responsibility in facilitating the transition from supported education to the workforce for individuals with autism.

While, Dr. Temple Grandin, on the other hand, has led a journey that stands as a testament to what can be achieved when potential is acknowledged and nurtured. Despite being diagnosed with autism at a young age, Grandin defied societal norms and odds to become a renowned advocate, speaker, and bestselling author. Her advice to parents, employers, and individuals with autism is to focus on strengths, as she eloquently stated, "The world needs all kinds of minds," emphasizing creative aspects of diversity, including neurodiversity, as crucial for innovation and progress.

Another brilliant example that QCDC has worked closely with for years is Dr. Stephen Shore, whose story is one of resilience and triumph over adversity. Also diagnosed with autism at a young age, he faced limited expectations for his future. However, intensive interventions led by his parents set him on a path of success. Today, as a professor and a passionate autism advocate, Dr. Shore encourages embracing differences. "Different, not less," he asserts, urging society to recognize that individuals with autism bring a unique perspective that enriches our collective experience.

As these pioneers and fellow advocates continue to raise awareness on this issue, businesses and workplaces now find themselves uniquely positioned to lead the charge in creating environments that embrace individuals with disabilities, particularly those with autism. By promoting inclusion and providing the necessary support, these organizations enrich their workforce and contribute to a more equitable society that values all individuals' unique abilities and strengths.

This can be achieved by taking small steps, derived from the stories and experiences of our internationally recognized experts, which will eventually accumulate to mark a decisive change in inclusive career culture across Qatar, and around the world.

Creating an Awareness Culture

The journey toward inclusive workplaces begins with knowledge and awareness. Companies can initiate, or participate in, workshops, training sessions, and informational talks that educate employees about autism and other disabilities. There are numerous stakeholders within Qatar that offer such services, with QCDC as one of the most prominent among them. Dispelling misconceptions and fostering understanding enables workplaces to create a more empathetic atmosphere that welcomes individuals with autism.

Embracing Flexibility

Flexibility is a cornerstone of an inclusive workplace. Flexible work arrangements such as adaptable hours and remote work options are essential to accommodating the diverse needs of neurodiverse employees. For individuals with autism who may thrive in structured routines, these accommodations can significantly enhance their job satisfaction and performance.

Designing Sensory-Friendly Spaces

This is particularly important for individuals with autism who often experience sensory overload. Simple modifications such as dimmed lighting, noise-canceling headphones, and designated quiet zones can provide much-needed relief and allow employees to recharge in a calming atmosphere.

Facilitating Clear Communication

Direct and unambiguous communication is also important for individuals with autism. Businesses can implement communication strategies that prioritize clarity and avoid figurative language. Providing written instructions and visual aids can enhance understanding and reduce misunderstandings. This will prove more efficient for neuro-typical employees as well.

Mentoring and Support Programs

Mentoring initiatives can be invaluable for individuals with autism. Pairing them with experienced colleagues who offer guidance, answer questions, and provide emotional support can foster a sense of belonging and professional growth.

Leveraging Strengths and Accommodations

Recognizing and utilizing individual strengths is a cornerstone of any successful organization or business, and even more so in inclusive approaches. Businesses can empower individuals with autism to excel in their roles by assigning them tasks that align with their unique talents and providing reasonable accommodations for them.

Leading by Example

Company leadership plays a pivotal role in setting the tone for inclusivity. When leaders authentically commit to diversity, it resonates throughout the organization. This way, business leaders inspire the entire team to adopt inclusivity in all aspects of their operations.

Continuous Feedback and Improvement

Creating an inclusive workplace is an ongoing endeavor that requires constant feedback and improvement. By actively seeking input from experts, employees with autism, and their colleagues, businesses can uncover areas for enhancement and further tailor their support.

The inclusion of individuals with autism in the workforce is not only feasible but also a strategic advantage for organizations seeking to create a more diverse and innovative environment. By recognizing this, businesses can unlock a wealth of untapped talent, leading to greater success and growth.

QCDC's ongoing and future initiatives demonstrate a strong commitment to building upon this potential. By continuing to offer training programs and fostering collaborations, QCDC is taking the lead in promoting the inclusion of individuals with autism in the workforce. We must keep in mind that "Different, not less." echoes the essence of neurodiversity—embrace differences, appreciate unique talents, and create a space where everyone can thrive.

DANA AL FARDAN

A QATARI MUSICIAN WITH GLOBAL MELODIES

The first of August 2018 will always live in the memory of Dana Al-Fardan, as the curtains were raised at the prestigious Theatre Royal Haymarket in London to the grand premiere of "Broken Wings," a captivating musical inspired by Gibran Khalil Gibran's namesake novel.

Written and composed by Dana, in collaboration with Lebanese-British actor Nadim Naaman, "Broken Wings" premiered in London's West End, the historic district home to some of the world's oldest theaters: an ultimate triumph for any show. Tickets sold out, and the audience utterly captivated, she could not have hoped for a better outcome to that evening.

It was a dream come true for the Qatari musician. An ambition she had since her mother took her to witness her first West End musical performance, the timeless classic Starlight Express. This unique and inspiring experience transformed the music-loving young girl's life, as she realized deep inside that, one day, she will become a part of this magical world.

It all started when she was 10 years old. She fell in love with classical music and was tinkering on the piano trying to play her favorite tunes. Her talent was natural, and she was able to develop it in a very short time. From time to time, she would also come up with her own melodies. For her, music was a new language that she quickly learnt and mastered.

She still remembers every detail of these times: "When I was playing the piano, nothing else mattered to me. I was inside my own world, completely isolated from my surroundings. All of this developed into a lifelong passion that has been fueled by many composers and performers who inspired me over the years," she said.

In the following years, Dana's love for music never faded. She continued to learn and develop her skills in every possible way. She passionately watched one West End show after the other, and when she was attending live orchestral music concerts, she was keen on memorizing every detail and breaking down the instrumentation. Deep inside, she always wanted to be a musician, but when the time came to choose a career path, the decision seemed out of her reach.

As the daughter of renowned Qatari businessman Ali Al Fardan and the eldest of his six daughters, Dana's career path was already set. Her logical and ideal career path was to work in the family's Al Fardan Group, a business venture founded by her grandfather in the 1950s. All her decisions were planned accordingly, as she studied International Relations at the American University of Sharjah, and then moved to London to pursue a postgraduate degree in Gemology at the Gemological Institute of America, before returning home to assume her duties in the family business.

Throughout the years, she maintained her love for music, but did not have a chance to revisit her old dream. She dedicated her concentration fully to her work, and for years, there was little room to maneuver and find time for any creative side-projects. But everything changed in an inspiring moment that transformed her life forever. She became pregnant and found out she was expecting a girl. In Dana's words, "I felt that something important was missing in my life. I was not shifting my perspectives or making a real impact. I could not imagine cultivating an honest relationship with my daughter if I was denying this huge part of who I was, a musician. I understood that if I wanted to be a role model for my daughter, I had to live my most authentic life and be true to myself. The life growing inside me was the ultimate source of the surge in my creative energy."

During her pregnancy, Dana decided to record her first album. "Paint" featured nine songs that she performed, wrote, and composed by herself. It was recorded alongside classical music performed by members of the London Metropolitan Orchestra at the historic Abbey Road Studios in London, the place where all-time musical giants like "The Beatles" and "Pink Floyd" produced some of their finest works.

"Paint" marked a momentous first step for Dana to establish her name in the global music scene, while also receiving nationwide recognition at home as she became the first Qatari female singer to perform songs in English.

In the following years, Dana's music career flourished. Her works mainly targeted Western audiences, but she was always keen on shedding light on Qatari and Arab heritage and culture.

"My pursuit of music was not only a vehicle to project myself or achieve glory on a personal level, as I also try to communicate stories that reflect my love for Arabic literature, philosophy, and history in the context of my rich cultural heritage," she explained.

Dana released several music albums and singles, including "Sandstorm" in collaboration with the Qatar Philharmonic Orchestra, and "Indigo" which mixed classical music with contemporary songs and electronic technologies.

Additionally, she performed live at several local and international events, while composing special music productions for Qatar Airways, Hamad International Airport, Qatar Museums, and Qatar National Library. Dana's contributions extended beyond the music industry, as she created music for various national events. This included the commemorative release "Raise the Flag" in 2019, which celebrated the historic victory of the Qatar national football team at the 2019 Asian Cup.

She was also eager to explore different artistic experiences. In 2017, she composed "Small Box," a chart-topping Arabic hit song for renowned Syrian singer Assala Nasri, in addition to the soundtracks of "The Necromancer," a British horror movie, and "Orca," an award-winning drama film.

A pivotal milestone in her career is her work as a writer and composer for musicals, an endeavor she holds in high regard. Drawing inspiration from her idol, Andrew Lloyd Webber, she aspires to follow in his footsteps while uniquely spotlighting stories from Arab heritage. Knowing that he, too, began as a composer before ascending to a prominent figure in global musical theater, further fuels her determination to achieve this ambition.

After the Broken Wings successful premiere in 2018, the show was once again well received by the audience when it returned for an extended run at Charing Cross Theatre in London. It was also performed to a sold-out audience at the Katara Opera House in Qatar, the Beiteddine Art Festival in Beirut, Lebanon, and the Dubai Opera in the United Arab Emirates.

"Broken Wings will always hold a special significance for me, not only because it was my first musical, but also because it was my first attempt to introduce a prolific figure of Arab origin to a West End audience. It was extremely well received and set the foundations for an even greater appetite for content of Arab origin. This became my general mandate in my music career; to promote our vast and rich art forms," she said.

After the challenging times of COVID-19, Dana collaborated on yet another musical with Nadim Naaman in 2021. Titled "Rumi" and penned by Everyn Sharma, the production delved into the life of renowned 13th-century poet and philosopher, Jalal al-Din Rumi. Captivating audiences once more, the musical enjoyed resounding success during its premiere at the West End and continued its success on the stages of Doha.

Dana believes that the future of arts in Qatar looks bright as most artistic fields continue to thrive and earn the respect and celebration of society, but she hopes her country can benefit from this at an economic level, as she says: "The real challenge now is to begin structuring an economic model around arts and entertainment, in a manner that suits Qatar's development model. We should focus on making Doha a genuine hub for the arts; arts that we generate and not simply import."

She is also confident that the music industry in particular has the potential to achieve considerable growth in Qatar over the coming years. "It is an important industry that generates billions of dollars for many countries around the world. The music industry in Qatar is booming. There are more opportunities to work in music compared to the past. I am also glad to see more Qatari women emerging in this field," she added.

Dana's next major project will also be a musical. This time the show will recount the fascinating story of Elissar, also known as Dido or Elissa, the daughter of the king of Tyre, who defied all odds to establish the kingdom of Carthage in the ninth century BCE and rise as its first queen. What sets this production apart is its unprecedented focus on Elissar as the central heroine, a departure from previous depictions. "I am very excited about this. It is the first musical that I write about a woman, so this has become quite personal, and it is a beautiful opportunity for growth and introspection. It is set to premiere in London on Woman's Day, and I hope to bring it to Qatar soon after that," she said.

Just like any other working mother, Dana aims to find the right balance between work and motherhood, which sometimes looks like a juggling act. For her, family will always come first, as she describes: "There is nothing more important in my life than my daughter Layla. She is at school now and it is essential for me that I take an ongoing and genuine interest in her education and all her after-school activities, which to my delight, include learning the piano. We share a huge passion for music, and she will always correct me if I get a lyric or key wrong. I am also blessed with a husband who is a very proactive and engaged father. It helps enormously."

She never regrets the time she lost before deciding to shift her career to music, as she believes that everything she learned and every experience she acquired during studying and working, have helped build her character and vision, while providing her with the capacity to navigate through challenges.

In just under a decade, Dana established herself as one of Qatar's top artists and helped enrich the musical field in her country while bolstering her global status. She considers all what she achieved a huge source of pride, but for her, it is also just the start of a journey to bigger dreams.

Among her future goals is adapting more classic novels about the Arab world not only into musicals, but also into movies and TV productions. On top of her list are George Strickland's "The Lion of Africa," which tells the story of Hannibal of Carthage, and Amin Maalouf's "Samarkand," which is woven around the history of the manuscript of Omar Khayyam's Rubaiyat. She also hopes to collaborate with Arab authors in the future to produce her musicals for the Arab-speaking audience.

Many hope to start a career in music, but shy away from taking such a step due to the fear of failure. Dana, a seasoned musician herself has the following advice for them: "Music is the greatest universal language. It is a unique way to express yourself. Through music, you will have the wings that will help you overcome all obstacles and reach new horizons. Gibran Khalil Gibran once said: "Sincerity is what makes all our deeds beautiful and honorable." You need to be true to yourself and to express yourself in the most authentic way possible. As long as you will have your own voice and a distinctive direction, people will listen to you."