IMPRINT

Public Relations & Information Department
Sultan Qaboos University

Thursday, 21 March 2019
Issue #011

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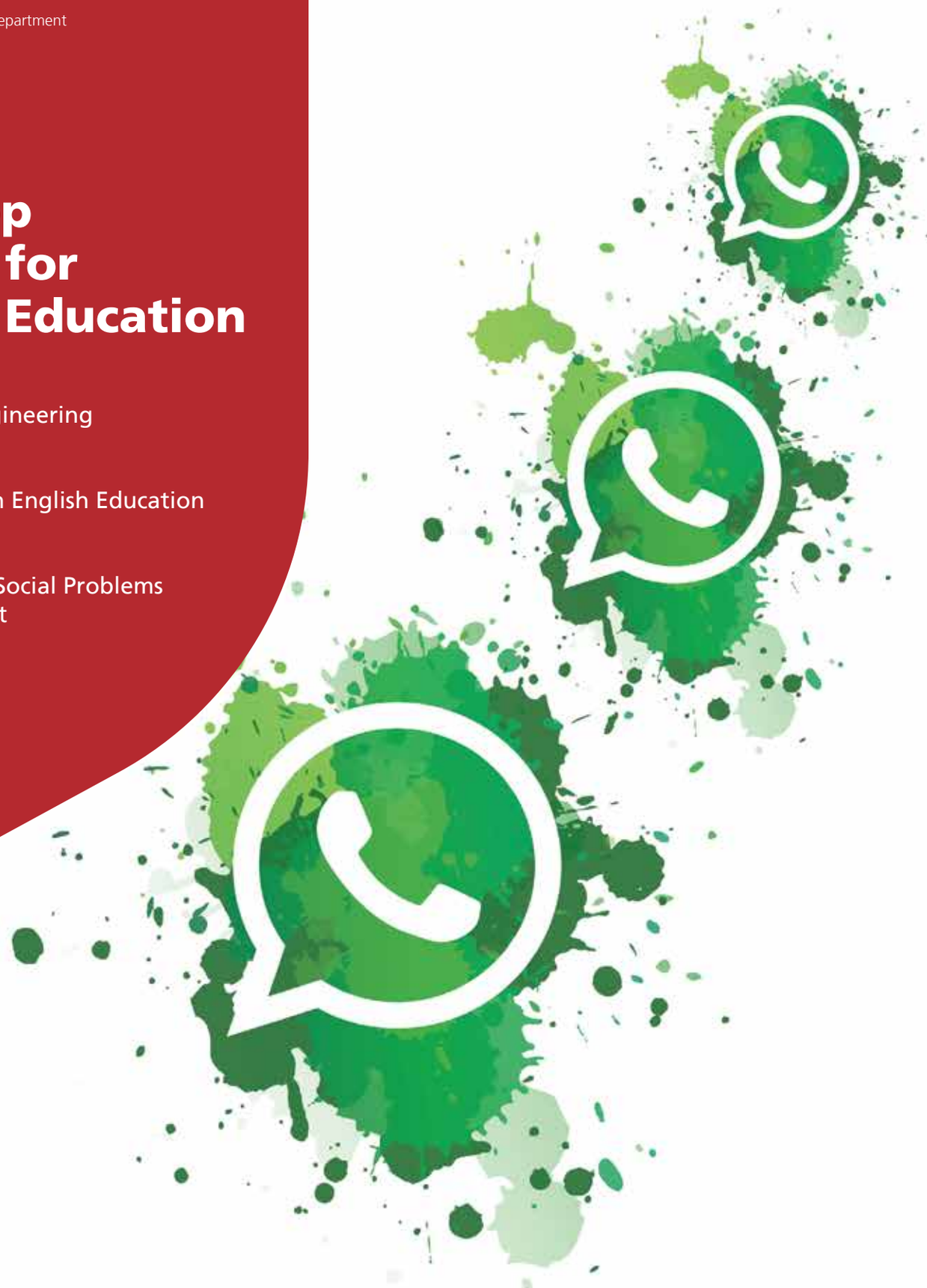

جامعة السلطان قابوس
Sultan Qaboos University

دائرة العلاقات العامة والإعلام
PUBLIC RELATIONS & INFORMATION DEPARTMENT

IMPRINT

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Catching up with the Times

Future scenarios are uncertain. Sustainability is the key word when it comes to preparing for the future and doing things in order to conserve our environment and achieving social equality and economic stability. Change is not possible without learning and learning is not possible without change. Today's world, a knowledge society, is marked by fast changes and uncertainties. We live in a fast paced society, in a knowledge society, in an era in which time is fluid, nothing lasts and everything changes. One major issue facing a knowledge society is the generation of collective intelligence and domination of it over multiple individual intelligences.

Today, the ideal that embodies education is creativity. The capacity for lifelong learning and willingness to face new things are equally important. At the same time, individuals should be able to modify their learned expectations to cope with the rapid changes in the society and equip themselves with the capacity the society requires from learned or educated individuals. There can be no learning without re-learning. In a knowledge society, education is the capacity to be creative in an environment of particular uncertainty. It is the capacity to properly manage the cognitive dissonance that gives rise to our failure to comprehend reality.

Therefore, sporadic education is not sufficient. What is required is lifelong learning. Education for Sustainable Development (ESD) has emerged as a paradigm for revising and reorienting today's education. With a world population of seven billion people and limited natural resources, we, as individuals and societies need to learn to live together sustainably. We need to take action responsibly based on the understanding that what we do today can have implications on the lives of people and the planet in future.

Universities should take serious efforts to adapt new teaching and learning approaches that enable the development of critical and creative thinking. Teaching and learning must be more active, connected to real life, and designed with students and their unique qualities in mind. What higher educational institutions do must be regarded as a service to society. Their research must anticipate social needs; and the products of their research must be shared effectively with society through appropriate knowledge-transfer mechanisms.

The Impact of Autism Spectrum Disorders

Autism spectrum disorder (ASD) represents a group of life-long neurodevelopmental disorders that occur during early childhood and interfere with a person's ability to socially relate to and interact with others. ASD is associated with a high prevalence of comorbid medical and neurological conditions and it affects the quality of life of those with the conditions, as well as their families and caregivers. ASD diagnose is still a difficult task because of the complexity and variability of its characteristics and symptoms. The prevalence of this spectrum disorder is keep on increasing globally including Arab States. According to a study, as on 2011, the prevalence in Oman was reported as 1.4 per 10,000 and another study done reported 8.5 per 10,000.

Research into ASD is still very new in the Arab world and mostly the research attention was given to aetiology and due to various reasons, the actual burden of ASD in the GCC similarly is still unclear. GCC ASD data analysis indicated that the prevalence rate range from 1.4 to 60 per 10,000 children. To date, not only is there little to no research documented in the Arab world on the prevalence of ASD, but also the services provided and support given to families, treatment outcomes, or the economic costs incurred. More revealing, ASD public health studies with an emphasis on young adults is completely lacking in the Arab world. Under-diagnosis and under-reporting are attributed to the limited availability of quality specialized healthcare services for children with neuro-developmental disorders. Some of the underreporting can be also attributed to cultural attitudes regarding disability, due to the stigma attached to most neurodevelopmental disorders. The shortage of specialists to diagnose ASD properly and the lack of parents' awareness to reorganize symptoms and seek diagnostic clarification are also contributing factors.

In a review paper titled "Autism in the Gulf States: a regional overview" that was published in "Frontiers in Bioscience, Landmark" and authored by Scientists from SQU and WISH, Qatar, a Gulf region centric view on ASD with special focus on Qatar and Oman was provided. In addition, the work outlined some of the main challenges, best practices and a path forward for the Gulf region from a healthcare perspective. Further, the role of public outreach and awareness to lay the groundwork for enlightened policy for intervention and resource allocation to care for ASD individuals were also highlighted. In Oman, the efforts are on going with the support from researchers from SQU, and Oman Autism Society to determine the magnitude of ASD in Oman at the national level using more robust epidemiological tools.

WhatsApp

As a Tool for Distance Education

Dr. Naifa Eid Saleem

With WhatsApp, faculty members can create a group for any course, communicate with students and post all relevant information. WhatsApp can also be used as an open source of information to which the students can go back to anytime they need the information. For WhatsApp to be used as a tool for distance education the students and the faculty members need a smartphone. Smartphones and other mobile digital devices such as tablets, can be surprisingly useful didactic resources for developing subjects in both distance and face-to-face university studies.

The Information Studies (IS) Department of the College of Arts & Social Sciences at SQU conducted a case study among its faculty members on to find out the reality of WhatsApp use as a tool for distance education and as a tool for teaching and learning. This study focuses on exploring the reality of the use of WhatsApp by the IS Department faculty's as a tool for distance education in teaching and learning and as an information resource. The study mainly used interviews to collect data in addition to content analysis of a WhatsApp course group. The interview respondents were nine faculty members. The interviews enabled the researchers to acquire a rich and comprehensive understanding of the factors and constructs that influence the faculty members' use of WhatsApp as an instructional orlearning tool and source of information.

The results of the study showed that three faculty members out of nine are using WhatsApp in teaching and learning. They use it for class discussions and explanations of projects. The study showed that the three faculty members in the Department of IS who used WhatsApp in teaching and learning are using it in general to communicate with the students and for educational purpose. In addition, the study showed a relationship between age, nationality and specialization. The study also proved that students used WhatsApp as an open source of information.

Commenting on the importance of this study, Dr. Naifa Eid Saleem, Assistant Professor in Information Studies Department at SQU, who led the project, said that in the past, faculty members were information controller and they were feeding that information to the students. "Those faculty members depended a lot on printed materials. As a result, faculty members and printed materials were the only sources of information. To obtain information from those resources, students attended classes, and these classes were conducted face to face and if a student missed a class, he or she would not be able to get the contents. However, the use of technology is to facilitate learning process. Because of technology, the role of faculty members has changed too. As educational institutions have started developing or adopting eLearning programs in the past decade, the role of faculty in this new environment had to be redesigned, redeveloped or re-invented in order to make faculty's contribution to student learning to be as effective as in the traditional face-to-face environment".

Dr. Naifa Eid Saleem observed that to redesign the role of the faculty members, the technology has to use facilities in the teaching and learning process as well as the faculty members have to be facilitators rather than spoon-feeding the students. In addition, the education should be delivered to everyone on the time that suits her/him and to the location that will be easier for him or her to reach. To deliver the education for the learner on their time and at their locations, institutions have to depend on distance education. Actually, distance education plays a vital role in facilitating teaching and learning process; it opens the door to everyone to achieve the principles of equal opportunities.

"One of the tools that can be used in distance education to deliver the instructional materials to the learners is the social networks. In fact, the use of social networks in education for communication between groups of students and between students and faculty members has become popular during the last decade. This use of social networks is conducted through various channels: Email, SMS, Facebook groups, Twitter, and recently, WhatsApp. Today, mobile devices have become a vital part of our daily life that shapes our habits. The combination of mobile devices and social media and free web tools especially, support interaction between students and each other and their instructor and hence increase learning".

These are the factors that prompted Dr. Naifa Eid Saleem and colleagues to conduct a research on the use of WhatsApp as a tool for distance education and teaching and learning. Dr Mohammed Nasser Al Saqri from the Information Studies Department, SQU and Aysha Sultan Al Badri from Children's Public Library, Muscat also participated in this study.

FOSS-Logisim in Engineering Design Process

Sayyid Dr. Samir Al Busaidi

Prof. Afaq Ahmad

A team of academics from Electrical and Computer Engineering of College of Engineering at Sultan Qaboos University has created a better learning environment using the Free and Open Source Software (FOSS) model. The academics with the help of lab engineers have set up teams to complement the theory of the teaching courses with at most use of FOSS model. The team developed and designed the lab setups with the vision that the FOSS model, which comprises of interesting tools and processes, can provide a learning platform where learner can create, exchange, share and exploit software and knowledge efficiently and effectively. The team realized that appropriate software tools and packages are mostly expensive and with the pace of electronics' growth, it is hard to cope with high cost of standard commercial packages that is often hardship for students and institution.

In the world, in the scenario of globalization and the rapid changes in technology, selecting various appropriate tools for the use of academics and students use is considered as one of the key challenges in the field of education. In the past few years, the FOSS model has gained momentum in higher education teaching and learning processes due to several benefits such as cost, license management flexibility, and access to source code along with security and stability. This is exactly what Professor Afaq Ahmad stated about the status of FOSS model activities in Electrical and Computer Engineering of College of Engineering at Sultan Qaboos University when he was presenting a paper in the technical session of the FOSS Conference (FOSSC'2019), held in Oman during February 11-12, 2019.

Presenting the paper in the form of a case study entitle "Free Open Source Software Logisim – A Perfect Tool for Teaching and Learning of Digital Logic Circuit Design Course – Experience and Status", Prof. Ahmed talked about FOSS-Logisim. He briefed the audience about the historical development of FOSS - Logisim and demonstrated some typical examples of modeling and simulation of engineering systems and processes to show the power of model simulation of FOSS – Logisim versions from 0.3 to 2.71. Prof. Ahmad highlighted some brilliant and amazing simulation examples of complex engineering design processes and projects simulated by using FOSS - Logisim.

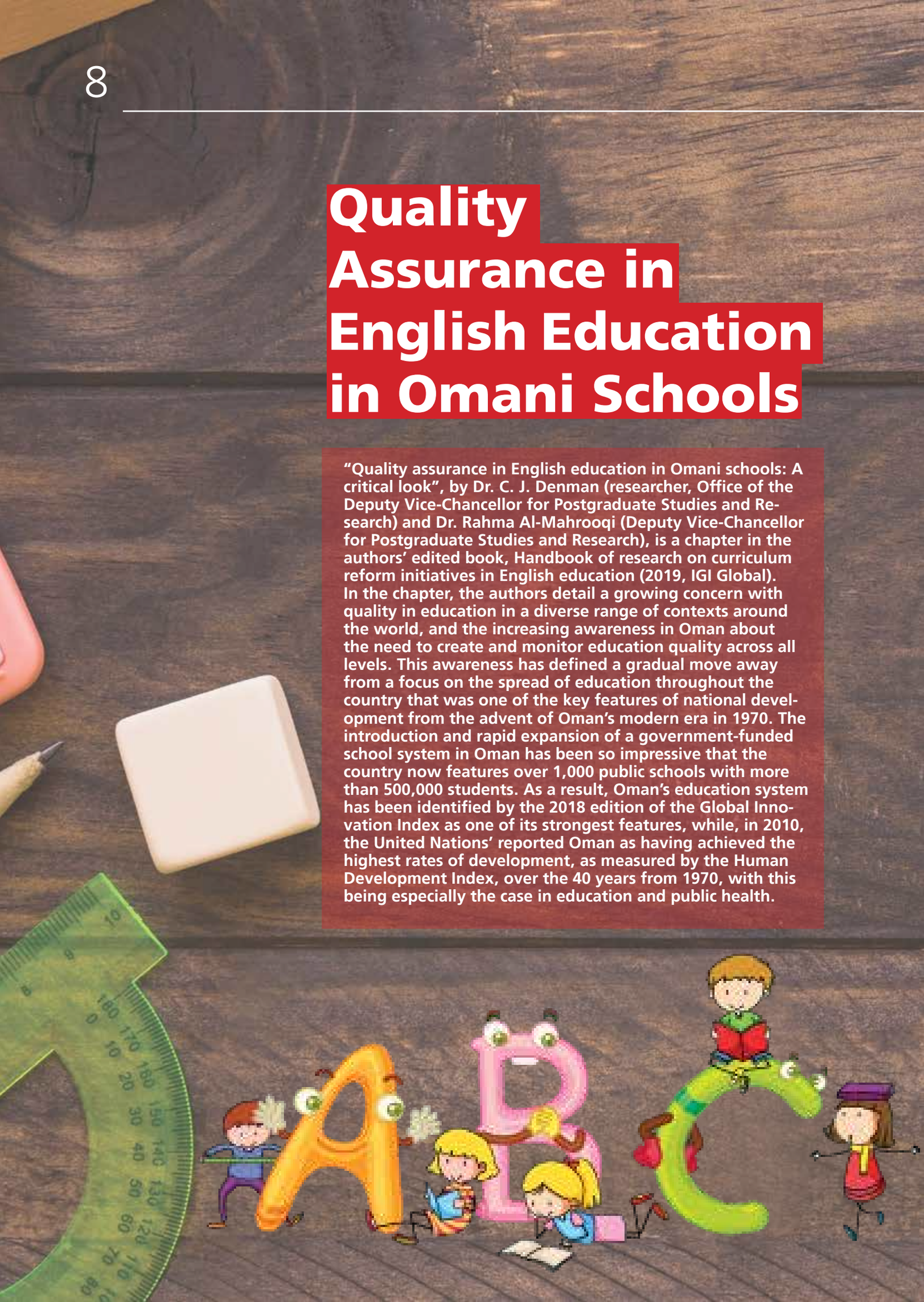
A few of them are: Design of an improved Central Processing Unit (CPU) used in a full-fledged computer; Simulation of a complex traffic light controller; Realization of sophisticated vending machine; Implementation of encryption-decryption systems; Design of coding and decoding circuits with error checking and correcting schemes; Implementation of highly secured digital locks; Design of elevator controller; Realization of parking systems; Design of washing machine, microwave and oven controllers; Realization of robot movements; Simulation of video games; and, Realization of some control systems in car automation.

Sayyid Dr. Samir Al Busaidi and Prof. Afaq Ahmad, academics from SQU, authored the paper entitled "Free Open Source Software Logisim – A Perfect Tool for Teaching and Learning of Digital Logic Circuit Design Course – Experience and Status". The authors acknowledged and thanked the entire members of the team of Digital Logic Design Lab who have taught the courses with support of FOSS - Logisim model and processes in the past and have contributed significantly to its current shape of the lab experiments for the courses of the stream of Computer Systems and Networks (CSN).

While concluding his presentation Prof. Ahmad put a recommendation proposal for the induction of Logisim – FOSS model and processes in schools of Sultanate of Oman to give an opportunity to students of understanding an engineering design process, problem solving approach and awareness of constraints. Hence, undoubtedly, FOSS – Logisim model and processes can be a booster towards technology transfer, innovation and entrepreneurship in the age of fast growing electronics and short product life. Thus, by virtue to prepare students for the world of tomorrow by acquiring the challenging knowledge, the knowledge to add in national new economy and job opportunities. Finally, he thanked the audience for being part of sharing the knowledge and urged to contribute for creating a learning generation, where all children and youth can get a platform at no cost or with a minimal cost to develop their skills that needed to thrive in the 21st century. The century for which United Nations (UN) General Assembly in its recent meetings in New York discussed about the global education in a new report "Learning Generation". A wakeup call is given for the global community on the critical nature of the education challenge around the globe. The call urges that it is possible to create a learning generation where all children and youth on the globe have skills needed to thrive in the 21st century.

Quality Assurance in English Education in Omani Schools

"Quality assurance in English education in Omani schools: A critical look", by Dr. C. J. Denman (researcher, Office of the Deputy Vice-Chancellor for Postgraduate Studies and Research) and Dr. Rahma Al-Mahrooqi (Deputy Vice-Chancellor for Postgraduate Studies and Research), is a chapter in the authors' edited book, Handbook of research on curriculum reform initiatives in English education (2019, IGI Global). In the chapter, the authors detail a growing concern with quality in education in a diverse range of contexts around the world, and the increasing awareness in Oman about the need to create and monitor education quality across all levels. This awareness has defined a gradual move away from a focus on the spread of education throughout the country that was one of the key features of national development from the advent of Oman's modern era in 1970. The introduction and rapid expansion of a government-funded school system in Oman has been so impressive that the country now features over 1,000 public schools with more than 500,000 students. As a result, Oman's education system has been identified by the 2018 edition of the Global Innovation Index as one of its strongest features, while, in 2010, the United Nations' reported Oman as having achieved the highest rates of development, as measured by the Human Development Index, over the 40 years from 1970, with this being especially the case in education and public health.



Accompanying this impressive expansion of the country's public and private education systems, has been a growing concern with ensuring the quality of instruction in Oman's schools and higher education institutions. The chapter takes as its focus efforts to enhance school learners' English language proficiency by examining the challenges reported in the literature that face the provision of quality education in Oman. It begins by detailing the important place English plays in Omani society, including its roles in the workforce and higher education. Within this context, the chapter offers an overview of numerous reform initiatives that have been introduced to Oman's education system in general, and to the way English is taught in schools more particularly. These are perhaps exemplified by the Basic Education reform which introduced English as a subject of study from the first grade, as opposed to the fourth grade in the General Education system. However, other major reforms to English teaching described in the chapter include a focus in Basic Education on learner-centred methodologies, the growing value of continuous assessments, and the upgrading of teacher qualifications from diplomas to bachelor's degrees in Teaching English to Speakers of Other Languages (TESOL).

The chapter continues that, despite this level of support, school students' achievement generally remains below international standards in English, math, and science. In terms of English, the authors explore challenges to the quality of instruction in Oman's schools associated with various factors. The first of these is teachers and the quality of teaching, and includes the limited English language proficiency of some school teachers, the continuation of teacher-centred pedagogical approaches that are at-odds with the tenets of Basic Education, and limited access to effective continuous professional development opportunities. Student-related factors are discussed next, and include limited opportunities to use English outside of the classroom, a lack of student motivation to learn English among many students (despite apparent awareness of the value of the language for their educational and professional careers), and the gender gap that sees male students continue to lag behind their female counterparts.

The authors offer the next obstacle to enhancing the quality of English education in Oman's schools as being related to the education system itself, including the challenge of ensuring efficient administration across the country's large number of schools. The next factor is inspections and assessing school performance, including an over-concern with administrative performance rather than academic outcomes, followed by the issue of assessment. In this regard, the authors note how, despite the increasing importance given to continuous assessment in Basic Education English classrooms, some teachers continue to teach towards the test and to ignore the development of their learners' communicative abilities. This issue is also impacted upon by concerns with the current English language textbooks, including the lack of stakeholder input in their development and mounting evidence of the need for their revision.

The chapter concludes that, despite the seemingly extensive nature of these challenges, there is widespread awareness of the way these obstacles impact upon the quality of English language teaching in Omani schools. As a result, the authors note that these challenges represent an opportunity for advancement. Denman and Al-Mahrooqi state that future reforms seeking to enhance the quality of English instruction in Omani government schools should involve careful strategic planning, setting appropriate goals and timelines, engaging local Omanis by trusting their expertise and knowledge, and seeking to learn from the reform experiences of other education systems around the world in both Arab and non-Arab countries. It is through the implementation of reforms that have been well-considered and -conceived, the authors conclude, that learners' English language proficiency and achievement can be fully-supported in Oman's public schools and that a positive transformation in Oman's educational system is possible if plans are carefully made and resources allocated.

“Startups that Solve Social Problems Have Greater Impact”

Dr. Belgacem Haba is one of the most successful Algerian researchers in field of electronics around the globe. Haba holds 489 US patents and over 1400 patents and patent applications worldwide. He is classified as one of the top 100 researchers in terms of the number of patents. Dr. Belgacem Haba gave a talk on “Startups Opportunities and Emerging Technologies” at SQU in December 2018. In his talk, Dr. Belgacem Haba narrated his journey of success, the challenges he faced and the ways he overcame them. He shared his experiences with the available market opportunities in emerging technologies for SMEs and entrepreneurs. He discussed the fourth industrial revolution’s emerging technologies and explained how to be prepared to adopt them and benefit from these in projects in the Sultanate. Excerpts from his interview with Imprint.

Oman is on its track achieve economic diversification through self-empowerment of its citizens and promoting entrepreneurship. In your view what are the potentials of Oman and the Omani youth in starting and being successful in IT startups that could lead to economic growth and development of the nation?

For any country to diversify its economy, it should look at its assets. For the Sultanate, Information Technology and related fields appears quite strong and promising. Startups that helps to solve the problems of the society and transform the lives of the people will have more chances for success and growth. Startups constitute 60% wealth of most countries. If the share of such startups cross the 60% mark in the economy of country, that nation would succeed. It is good for the country to maintain high number of startups to keep the economy grow.

What are the available market opportunities in emerging technologies for small entrepreneurs in Oman?

Tech startups is a good option for Oman. Entrepreneurs should now focus on the fourth industrial revolution, which is based on information and communication technologies. The fourth industrial revolution is characterized by a fusion of technologies that is blurring the lines between the physical, digital, and biological spheres. In today's world, billions of people across the globe are connected via mobile devices, with unprecedented processing power and storage capacity, and having unlimited access to knowledge. This offers unlimited possibilities. These possibilities are likely to be multiplied by emerging technology breakthroughs such as artificial intelligence, robotics, the Internet of Things, 3-D printing, nanotechnology, biotechnology and materials science etc. Country like Oman should definitely make use of the opportunity for innovation and entrepreneurship in such fileds.

From your decades of experience as a researcher, entrepreneur and inventor in electronics and IT, what is your advice for the young students in Oman who wish to excel in their respective fields of IT and business? Would you recommend any changes in the attitude of the students towards their studies and approach to life?

The change should start from the basic education system. To equip our kids to overcome the challenges of our transforming world, a shift from instructionism in the classrooms is imperative. Teachers and educators have to get out from the old teaching methods that are mostly based on the idea of the teacher teaching, usually according to a predetermined schedule, rather than on students learning from their own experiences at their own pace. Innovative teachers transform their classrooms into experiential, hands-on learning environments. A hands-on learning approach helps students build the skills they need to be career ready, developing abilities such as problem solving, teamwork, creativity and critical-thinking. Education is like giving toolbox to kids and training on how to use the different tools in the kit. By making use of the right tools and the creativity of the kid, let them come up with innovative ideas to solve different problems around him. Such an educational system would help prepare young generation ready to meet the world of future technologies.

How should a country like Oman and the young population of the country should do to adapt themselves to benefit from the future technologies that will happen in the next two to three decades?

It is not logically possible to predict the future after 10 years. For instance, our kids are rely on Google for everything. The Google story begins in 1995 at Stanford University. 20 years ago, no one imagined that Google would transform our lives after 10 or 15 years. However, by making necessary changes in the way of educating our younger generation, every country could equip their future generation to benefit from the future technologies. Education is the key to success in the case of startups too. Planning the right startups should be based on what you have studied in your schools and university. Let your kids understand the problems around them. One should look at the society and identify its problems and needs. Startups that help solve the problems of the society will have greater impact and chance for success.

In 2017, you opened the Haba Institute in Algeria to provide a fertile and supportive ecosystem for investing in innovation and creativity. It helps young entrepreneurs a lot. Is there any scope for such an organization in Oman? If so who should take the lead?

From my understanding, Oman has ample facilities and programs to promote entrepreneurship and innovation among its youngsters. The National Business Centre that promotes small and medium enterprises and the Innovation Park Muscat are some examples. The duty of the government is to ensure sound education to its younger generation and prepare them for future.

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