



June
2020

IRCETMS 2020 Proceedings



*International Research Conference
on Education, Technology and
Multidisciplinary Studies 2020
London (Virtual)
29th-30th June 2020*

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ISBN:978-1-83853-641-1

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ISBN 978-1-83853-641-1



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The Educational & Learning Management Challenges the IoT can solve by Sustainability Impact

Hamid Doost Mohammadian
University of Applied Sciences (FHM)
Bielefeld, Germany
doost@fh-mittelstand.de

Abstract— *Internet of Things (IoT), IoT-education, STEM, smartness and digitalization are new techniques and methods used in the industry 4.0 and Society 5.0 that enable universities, educational institutions to better management of resources and flexibility to respond to the business educational requirements and conditions. Demonstrators of the IoT has an important role, these resources consist of physical implementation of highly innovative experiments of IoT technologies. The demonstrators intend to be didactic labs where the students can make practical experiences in controlled situation but using real equipment or platforms. This learning-by-doing methodology is fundamental when dealing with a topic such as the ones studied in these projects, where practical skills are essential. The demonstrators will be remotely controlled; this will allow the students to use them event distance, ensuring a wider audience. Nowadays, we passed the 1st, 2nd, 3rd and 4th waves (ages). Before 1970 various businesses, education and training could affect and improve IT and the other modern technologies. Since we reached the 70ies the IT technologies and smartness able to change and improve other business, education, learning and even impact our lives. Three technological revolutions are shaping the dawn of the 21st century: 1) Decarbonization, 2) Decentralization and 3) Digitization. At the age of communications and technology, education as an irrefutable factor plays a vital role in the developing countries to extend their knowledge in different areas. It is an enabler for the intelligence appended to many central features of the modern world. We provide a survey of some of the major issues challenging the widespread educational management.*

Keywords— *Internet of Things (IoT), Education, Educational Management, IoT-Education, Industry 4.0, Society 5.0, IoT Applications in Education, Educational Challenges, Tomorrow Shocks and the 5th Wave Theory*

INTRODUCTION

Internet of Things (IoT), IoT-education, STEM, smartness and digitalization are new techniques and methods used in the industry 4.0 and Society 5.0 that enable universities, educational institutions to better management of resources and flexibility to respond to the business educational requirements and conditions. Demonstrators of the IoT has an important role, these resources consist of physical implementation of highly innovative experiments of IoT technologies. The demonstrators intend to be didactic labs where the students can make practical experiences in controlled situation but using real equipment or platforms. This learning-by-doing methodology is fundamental when dealing with a topic such as the ones studied in these projects, where practical skills are essential. The demonstrators will be remotely controlled; this will allow the students to use them event distance, ensuring a wider audience. [1,2,3].

Today, IoT application is one of leaders' new methods considered as an appropriate enable us infrastructure. It is an enabler for the intelligence appended to many central features of the tomorrow world. This paper deals with a new theory called the 5th wave/tomorrow age toward IoT technologies as solution for educational learning management challenges with forecasting, preventing and making readiness for facing educational management by sustainability impacts. In addition, this theory creates societies and business founded on high technologies, D3 (three 21st revolutions: digitalization, decarbonization and decentralization), appropriate business strategies concerned on sustainability which can create new concept and situation of business which is capable of tackled with future concerns entitled "Tomorrow's Society and Business" which is a super intelligent society with smart business environment by using AI. In this paper we will discuss how the 5th wave theory and IoB could be as solutions for learning challenges in the 4th industrial revolution.

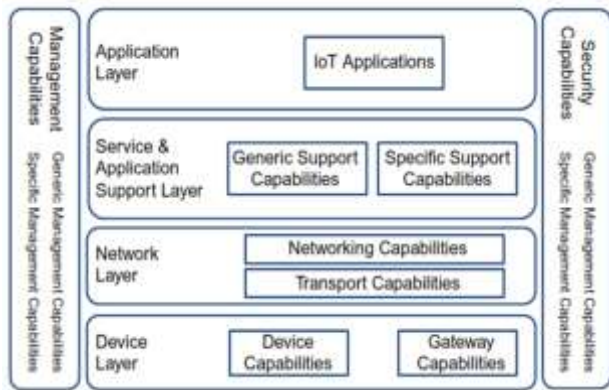


Fig. 1. IoT reference model

I will describe how IoT is capable of recognizing challenges in edge of tomorrow and help leaders to find educational sustainable digital solutions for today’s challenges tomorrow’s crises. In this regard, I will discuss about some two case studies and analysis them as experimental fullfilment in the field of IoT in education, learning and training. The proposed paper represents IoT applications to solve educational gap on IoT technologies, Human Resources Competencies (HRC), software programming and hardware equipment. [1,2,3,4,5].

Now, we passed the 1st, 2nd, 3rd and 4th waves (ages), before the 70's various businesses could influence and improve technologies, IT, IoT and after 1970 the digital technologies, smartness, IT and IoT became able to influence, change and improve the various education, training, business, economy, and even impact our lives. At the age of ICT, training as an irrefutable factor plays a vital role in the sustainable countries to extend their knowledge to forecast, prevent and face tomorrow shocks. It may be tempting right now, when it is hard to see beyond the next few weeks, to dismiss the 17 Sustainable Development Goals (SDGs) as a distraction. But they have been described as a “crowd-sourced purchase order from the future” precisely because they offer a tremendous business opportunity. SDGs are an urgent call for action by all countries developed and developing in a global partnership. According to SDGs, goal number is regarding to: Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all. [1,5,9].

Based on the author’s point of view, a new definition for sustainability is required to deal with educational challenges and sustainable development. A new concept of sustainability composing of seven pillars (7PS model) is proposed by the author, instead of the three pillars that make up the traditional notion of sustainability-environmental, economic, and social sustainability. Environmental, economic, social, cultural, educational, political, and technical sustainability are the main components of high sustainability. It is required that these seven pillars are developed fairly equally. In particular, two points are important for high sustainability theory introduced by author: The first point is that seven pillars including education, culture, social, technique, politic, economic, and environment are vital to gain high sustainability. The second point is that these seven pillars of sustainability must develop almost equally

Technology development creates new opportunities for business improvement. In recent decades, IoT has been introduced as the implementation of IoT technology into distributed educational systems to optimize the efficiency of sustainability infrastructure as solution for educational and learning management challenges. [12,18].

It can also be extended to more minor levels, manufacturing and operation units. IoT based economy and business make the training procedure faster, safer with higher productivity. People, machines, natural resources, production lines, logistics networks, consumption habits, recycling flows, and virtually every other aspect of economic and social life will be linked via sensors and software to IoT plat-form, continually feeding Big Data to every node busi-nesses, homes, and vehicles moment to moment, in real time.

In truth, the IoT provides a nearly endless supply of opportunities to interconnect our devices and equipment. The economic importance of IoT is underlined in several studies: to give an order of magnitude, a recent study of the European Committee estimates that the market value of the IoT in the EU will exceed one trillion euros in 2020.

The huge expected growth of IoT in the next years and the planned investments in the sector foresee a high demand of professionals in the sectors. According to a report from the Vision Mobile projects, while in 2014 just 300,000 developers contributed to the IoT, 4.5 million developers by 2020 are expected, reflecting a 57% compound annual growth rate and a massive market opportunity. European Universities and VET providers are not ready to face this educational challenge. Very few European Universities and VET providers offer courses on IoT nowadays. On the contrary, US Universities and private companies regularly offer courses on IoT to face the demand of professionals. At the age of Internet of Things (IoT), education as an irrefutable factor plays a vital role in the developing countries to extend their knowledge in different areas. So the educational institutions' managers have more responsibilities to survey the situation to enhance the effectiveness. People, machines, natural resources, production lines, logistics networks, consumption habits, recycling flows, and virtually every other aspect of economic and social life will be linked via sensors and software to IoT platform, continually feeding Big Data to every node businesses, homes, and vehicles moment to moment, in real time. In truth, the IoT provides a nearly endless supply of opportunities to interconnect our devices and equipment. The economic importance of IoT is underlined in several studies: to give an order of magnitude, a recent study of the European Committee estimates that the market value of the IoT in the EU will exceed one trillion euros in 2020.

The European Commission is aware of the great potential of IoT and in the past has supported several projects for the development of IoT-based applications, protocols and policies for the secure, safe and privacy preserving deployment, mainly in the FP7 and Horizon 2020 programs. Actually, the EC plans to unveil a strategy for IoT for the mid of 2016, launching a series of large-scale pilots with an investment of more than 100 million euros. The huge expected growth of IoT in the next years and the planned investments in the sector foresee a high demand of professionals in the sectors. According to a report from the Vision Mobile projects, while in 2014 just 300,000 developers contributed to the IoT, 4.5 million developers by 2020 are expected, reflecting a 57% compound annual growth rate and a massive market opportunity. European Universities and VET providers are not ready to face this educational challenge. Very few European Universities and VET providers offer courses on IoT nowadays. On the contrary, US Universities and private companies regularly offer courses on IoT to face the demand of professionals.

One of their new methods is usage of IoT-Education considered as an appropriate infrastructure technology. It is an enabler for the intelligence appended to many central features of the modern world. We provide a survey of some of the major issues challenging the widespread educational management. This paper deals with the concepts and history of IoT, the definition of education, use of educational management and its challenges. Then it is explained that the IoT technology is capable to recognize challenges in educational environment and help managers to find suitable solutions in smart environment. [52,75].

In this regard, one of the successful educational organizations in Germany (FHM University of applied sciences) are analyzed as case study of an experimental fulfillment in the field of Internet of Things. In this way, the proposed paper represents IoT applications to solve educational managers on ICT technologies, software programming and hardware equipments.

The results of this paper demonstrate that IoT-education technology can recognize it's quite evident that organizations all over the world are boarding onto IoT-driven digital transformation ventures to drive competences and education suppleness, in addition to better meet the demands of their students and teachers. There might be risks to these ventures, but, nonetheless, if coped appropriately, educational organizations could be further assured and the road to IoT-education victory and efficiency should be impartially smooth. To clarify the impress of IoT-education as a solution for educational sustainable smart SMEs challenges.

Generally, IoT-education and smart learning could be tools and motivation to improve HR competencies towards modern hybrid SMEs like tomorrow's educational institutions that are able to participate, compete and survive in markets as well as cultivating sustainable development. The 5th theory founded on HR education and utilizing high technology in businesses is a path to create modern innovative educational institutions concerned on CSR strategies, environmental sustainability and sustainable development as well as successful business that are able to conquer future concerns towards more sustainable and livable World (To balance between CSR & business). [43,65,81].

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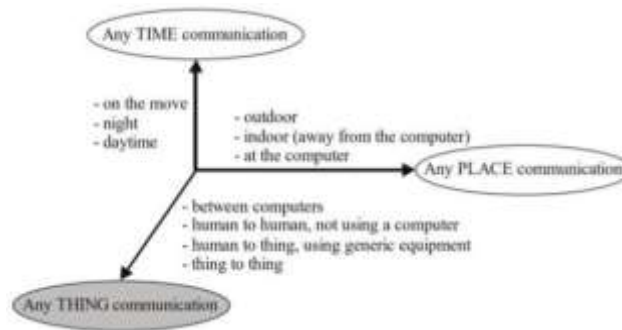


Fig. 2. New Dimension in IoT

LITERATURE REVIEW

The Internet, itself a significant component of the IoT, started out as part of DARPA (Defense Advanced Research Projects Agency) in 1962, and evolved into ARPANET in 1969. In the 1980s, commercial service providers began supporting public use of ARPANET, allowing it to evolve into our modern Internet. Global Positioning Satellites (GPS) became a reality in early 1993, with the Department of Defense providing a stable, highly functional system of 24 satellites. This was quickly followed by privately owned, commercial satellites being placed in orbit. Satellites and landlines provide basic communications for much of the IoT.

The shift from an Internet used for interconnecting end-user devices to an Internet used for interconnecting physical objects that communicate with each other and/or with humans in order to offer a given service encompasses the need to rethink anew some of the conventional approaches customarily used in networking, computing and service provisioning/management.

Most of the research attention is on how to embed intelligence into the environment using technologies such as RFID, Wi-Fi, cellular networks and Bluetooth. Researchers approached to controlling home appliances and devices using remote access and network interoperability using gateways of homes. This was the introduction of using web servers based on PCs using Wi-Fi based systems.

Internet of Business (IoB)

technology development has led to new opportunities for business improvement. Internet of Things (IoT) is a new technique used in Industry 4.0 (I4.0) that enable businesses to better manage resources and provide them with the flexibility to respond to business conditions. The digital transformation driven by 4.0 technologies is having a disruptive impact on many business sectors. These innovations allow us to respond to both the growing business demand and the maintenance cost of businesses and a reduction in downtime. The application of IoT technologies to vast types of devices has led to electrical networks being monitored and controllable in a capillary way. Big data

techniques and predictive models allow smart business management, from a national scale up to global, facilitating the spread of different business systems. New intermediaries and new business models appear in the market. The world economy has changed from a business economy to a data and business economy, leading to the concept of the “Internet of Business”. The aim of this Special Issue is to report on new scenarios, technologies, and applications related to the concept of the Internet of Business (IoB) and discuss challenges and risks on future of business revolution. Examples of this work include the description of new business models and new operating methodologies related to all business sectors, the impact of the digital transformation on the players of these business sectors, new policies and strategies for the monitoring and control of these business activities, and new models of data monetization in business. The Special Issue also aims to cover the impact of 4.0 technologies on business, including the large-scale deployment of IoT, the employment of big data and machine learning for business forecasting, the use of cloud platforms for the control of smart business, the new cyber-risks for the business sector and the future of business.

Education

The growth of society is not possible without education as the pillar on which the entire fabric of nation resides. The future scenarios of the political, social, cultural and economic sectors will depend on the contributions of the students of the universities today. More than ever before, education must be visionary and future-oriented, in the face of stunning scientific and technological innovations and changes, unprecedented socio-economic challenges and opportunities, surprising socio-political reforms, and amazing cultural reawakening. Whether a society is formed through contract or communication, education plays its vital role in preservation and transmission of social values.

The fundamental purpose of education is to transfigure the human personality into a pattern of perfection through a synthetic process of development of the body, the enrichment of the mind, the sublimation of the emotions and the illumination of the spirit.

CAPABILITIES OF IOT FOR EDUCATION

When IoT is applied in education, it is going to solve many problems and break main barriers that existed before. When teachers and students work together, they can use tablets, smartphones or even VR helmets. Or even they can arrange teaching-learning process remotely, using a webcam, Internet connection, and relevant messenger. But IoT opens much larger perspectives for educating process. Administration in each educational establishment wants it to be secure and protected from any unwanted visitors. But specialists that are involved in security guard, they cannot monitor every corner of the school. That is why IoT can help administration fix it. Facial recognition systems can be installed all around the school or college, and it will scan faces of all people and find them in the database.

DEMONSTRATORS OF THE INTERNET OF THINGS

These resources consist of physical implementation of highly innovative experiments of IoT technologies. The demonstrators intend to be didactic labs where the students can make practical experiences in controlled situation but using real equipment or platforms. This learning-by-doing methodology is fundamental when dealing with a topic such as the ones studied in these projects, where practical skills are essential. The demonstrators will be remotely controlled; this will allow the students to use them event distance, ensuring a wider audience.

EDUCATIONAL MANAGEMENT

Educational Management is distinct procedure that consists of planning, actuating, and controlling, which is performed to determine and accomplish stated objectives with the use of human and material resources (Jones & George, 2006). According to Bush (2011), educational management as a field of study and practice was derived from management principles first applied to industry and commerce mainly in the United States. It was very much influenced by the work of Taylor (1947) and the scientific management perspective in which individuals' actions were to be adjusted to be like new, efficient machines (Hoy, 2013). Other influences were Fayol (1916) and the general principles of management: planning, organizing, commanding, coordinating, and controlling as well, as Weber (1945) on bureaucracy. From a North American perspective, Hoy (2013) states that the systematic study of educational administration is as new as the modern school (Hoy 2013). He defines administration as both the art and the science of applying knowledge to administrative organizational problems (Hoy 2013). To provide general explanations to be used to guide research and practice, the author dis-cusses the role of educational administration as a science. From the author's point of view, science should be seen as a dynamic process of development through experimentation and observation.

In contrast, Hartley (1999) and Hallinger (2005) point out the changes in public management and their impacts on the adoption of flexible model production in the educational field. They replace the Taylor/Ford production model by implementing a more agile and flexible one in order to meet current market demands and to focus on customer service. They also show that their new model has been transformed from a bureaucratic model to a bureaucratic flexibility model. The process of educational management consists of five basic functions; a manager uses these functions to achieve educational organization goals and objectives.



Fig. 3. Functions of Educational Management

THE SCOPE OF EDUCATIONAL MANAGEMENT IS RELATED TO

- Development related goals
- Planning and implementing the programmes
- Administration
- Solving the problems
- Professional development
- Evaluation and its consequences

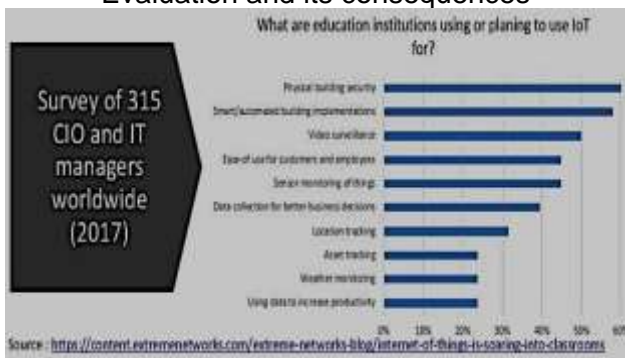


Fig. 4. Reasons of using IoT in Educational Institutes (n:20000)

Web Services for IoT

Today’s Web Services are not suitable to be used with the Internet of Things.

TCP, HTTP, XML (SOAP) WHAT IS NEEDED IS:

- ✓ Restful architecture for good Web integration
- ✓ Native push model with subscribe and notify
- ✓ UDP-based transport with multicast support
- ✓ Overhead suitable for constrained networks
- ✓ Complexity suitable for constrained nodes
- ✓ Build-in Web discovery and security

Therefore, a major concern in adopting and implementing this new technology is several items:

- Bulk Data

- Security
- Privacy and reliability
- Complexity
- Connectivity
- Adaptability

Big Data Storage in the Cloud for Smart Educational Environment

The growing exploitation of smart environments and audio/video streams is causing a massive generation of complex and pervasive digital data. Sensing equipment and sensor networks are deployed to monitor phenomena of interest providing many heterogeneous measurements and multimedia data. Then, data are stored, shared and processed for several purposes, such as healthcare, air quality monitoring and risk management. For many years, enterprise organizations have accumulated growing stores of data, running analytics on that data to gain value from large information sets, and developing applications to manage data exclusively. However, a new trend is arising, where data production, information management and application development are decoupled, thus giving to business companies different roles in the market. In such a scenario, flexible solutions to merge activities of vendors, manufacturers, service providers, and retailers are necessary. In this paper we focus the attention on data storage services, and we present a new storage architecture specifically aimed to monitoring activities in smart environment. Many effort in the industry and in the research community have been focused on the storage of IoT data, in order to balance costs and performance for data maintenance and analysis. Indeed, the design of powerful storage systems can efficiently handle the requirements of big data applications and Cloud computing is expected to play a significant role in IoT paradigm. A Cloud storage solution able to store huge amount of heterogeneous data, and provide them in a uniform way. Indeed, Cloud storage offers huge amount of storage and processing capabilities in a scalable way. Thus, we designed a monitoring-oriented Cloud architecture for the storage of big data, that can be exploited for the development of application and services useful in many different applications for smart environments (e.g., smart cities, homeland security, disaster prevention, etc.). The meaning of "Big Data" today deals with very large unstructured data sets (PetaByte of data), that need of rapid analytics with answers provided in seconds. However, strategies to manage Big Data strongly depend on the specific type of data. Observations can generate Big Data because monitoring activities in a wide geographical area produce several tuples in short time interval. Thus, in long periods (days, months, years) a huge amount of data need to be structured and stored. Observations can be made available through Documents, where they are encapsulated in a standardized internal format.

Digitalization, Smartness and Ubiquitous

Smart and smartness have been utilized in different sciences in order to improve function. When new technologies and open systems of innovation started to manipulate, about 1970's, applying smartness in citizens, enterprises, cities have been occurred to enhance quality of human life [4,5]. Medina-Borja declared smartness as an idea that covers Internet of Things, artificial intelligence, and the all smart services like smart phones, smart cities and etc. [4].

Digitalization like smartness plays significant roles in various aspects of life like different businesses in recent decades. Digitalization is about integration of digital technologies into everyday life, that can be digitalized. Digitalization could be applied as one of the tools to develop sustainability in countries as well as in businesses [6].

Enhancement of high technologies like ICT, IoT, IoE and so on, create and develop ubiquitous concept, even smartness [7].

Ubiquitous is derived from the noun *ubiquity*, that means omnipresent or being presence everywhere or in many places at the same time. [8]. These days, ubiquitous computing is utilized in several aspects of life including urban development and planning, banking, shopping, learning, energy management and so on etc., that would influence on humans' life and Sustainability [8, 9].

Smart Management

Nowadays, economic, social and environmental risks are controversial phenomena that threaten the future of the world and human beings. Therefore, it is vital to deal with challenges to maintain the World for upcoming generations as well as improving quality of livability and life for present. Smart and Sustainable Management is one of the paths to deal with economic and environmental challenges [10].

Based on ISO 50001, energy management system (EnMS) process is founded on Plan-Do-Check-Act Framework:

Plan: This step is concerned on conducting energy review, establishing the base line, developing resources and action plan.

Do: This step is about implementing action plan.

Check: Monitoring and measuring processes to determine energy efficiency against energy policy are done in this step.

Act: The last step is concerned on taking the action to enhance energy performance and EnMS [14].

Fundamentally, energy management is concerned on energy efficiency, utilizing renewable energy, and waste as new source of energy, being environmentally friendly and cost efficiency to improve efficiency and productivity of business with lower cost and environmental effects [12, 13].

The Waves/Ages (1st, 2nd, 3rd and 4th waves):

The world has been changing through human civilization development and improving technologies every day. Based on industrial revolution changing from mechanization by water and steam power, mass production to information technology; four waves were realized [22, 23]:

First Wave (Agriculture Age):

First wave introduced as pre-industry period or industry 0.0 was commenced around 70000 years ago through fire, light and wheels. This focused on mechanical production and agriculture industry [Doost Mohammadian, H.].

Second Wave (Industrial Age):

Second wave happened around 17th century when steam power, mechanization, chemical industry and water machine named industry 1.0, besides of mass production, assembly line and electrical energy introduced as industry 2.0 were applied [Doost Mohammadian, H.].

Third Wave (Post Industrial Age):

Advent of the Digital Revolution at 20th century, created industry 3.0 based on developing of computers, automation, electronics, information and communication technology [23].

Fourth Wave (Digitalization Age):

Fourth wave is introduced also as I4.0 has been emerged at the second half of the 20th century through digitalization and automatization of every part and manufacturing process of company. It makes not only huge changes in production, but also in every aspects of life [23, 24].

Industry 4.0 (I4.0):

As it was mentioned, at the second half of the 20th century through developing industrialization, industry 4 has been emerged [24]. I4.0 was introduced by German government founded on technological

changes on manufacturing and policy framework for companies in order to be survived in global competitiveness [22].

I4.0 is about intelligent and smart networking of products and processes based on five technology areas: Embedded systems, smart factories, strong networks, cloud computing and Information Technology (IT) security, although according to Rießmann et al, it is based on 9 different technology areas: automated robots, simulation, horizontal and vertical system integration, industrial IoT, cyber security, cloud-based services, additive production (3D printing), augmented reality, and big data analysis [25]. I4.0 play significant roles in successfulness of organizations. The main benefits of I4.0 are:

- Reducing cost including production costs, logistic costs and quality management costs
- Creating more friendly and effective environment
- Sustainable energy management
- Improving mass production
- Improving customer services and products
- Reducing processes of releasing new product to market [26]

The main challenge of I4.0 is concerned adjusting leaders, managers, entrepreneurs, labors and generally capitals to utilizing new methods and processes based on I4.0 and creating significant changes. To deal with this challenge, education and training play vital roles [27].

I4.0 influences on company's value chain that this impact is shown at the below figure:



Fig. 5. Involving of I4.0 to a Company's Value [24]

Society 5.0:

The rapid evaluation and improving of information and communications technology (ICT) and other kinds of high technologies like digitalization make significant changes in industry and society.

Society 5.0 concept is one of idea created through these evaluations by Japan. Basically, society 1.0 is hunting society emerging on birth of humans' beings. At 13.000 BC through development of irrigation techniques, society 2.0 named as Agrarian society was started. Industrial society as society 3.0 founded on invention of steam power machine and mass production was emerged at the end of 18th century. Society 4.0 is an information society via improving technology at the second half of 20th century, and society 5.0 as super smart society has been emerged from the 21st century [28].

Society 5 is concerned on every aspects of life such as mobility, manufacturing, food production, reducing disasters, energy, finance, public services, cyberspace, and efficiency of organizations, regions and cities [29]. Fundamentally, society 5.0 is a tool to make balance between economic development and social sustainability. The below figure declares economic advantages and social enhancement of society 5 [30]:

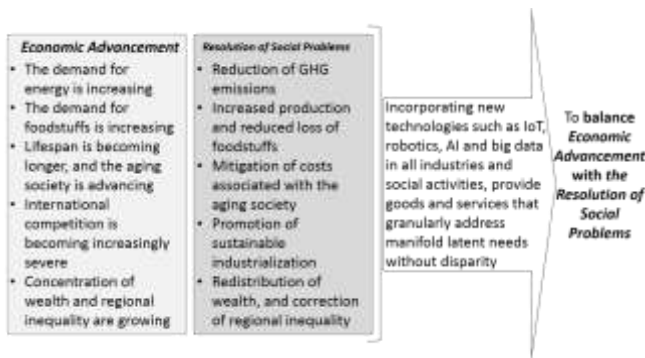


Fig. 6. Society 5.0 Advantages [30]

DISCUSSION

Based on the the references (18-34,45-68,70-83), I am going to discuss about the following:

Educational Management Challenges

While demands for large scale improvements in education systems increase worldwide, education system structures continuously fail to meet, or even make notable advancements, toward these demands. Inseparable from this problem is the very similar way in which education systems are managed. Educational managerial structures have become so universal, perpetual, and therefore, deeply ingrained in society, that they remain almost entirely unchallenged; this encourages the misleading, nearly unquestioned assumption that managers are not responsible for educational failures and that teachers are at fault. This paper argues that the core of most educational problems lie within current educational management structures. It calls for a complete rethinking and rebuilding of such structures in order to aid educational systems in reaching their full potential, therefore helping students within these systems fully develop 21st century skills and meet future global challenges.

Modern challenges in the field of educational management require highly developed problem solving, critical thinking and interpersonal skills if these complex and multi-dimensional challenges are to be productively overcome. Approaching educational management and/or administration from a theoretical perspective provides an opportunity for educational managers, planner, students and practitioners to explore education issues in an environment that is conducive for their respective professional development and reflections.

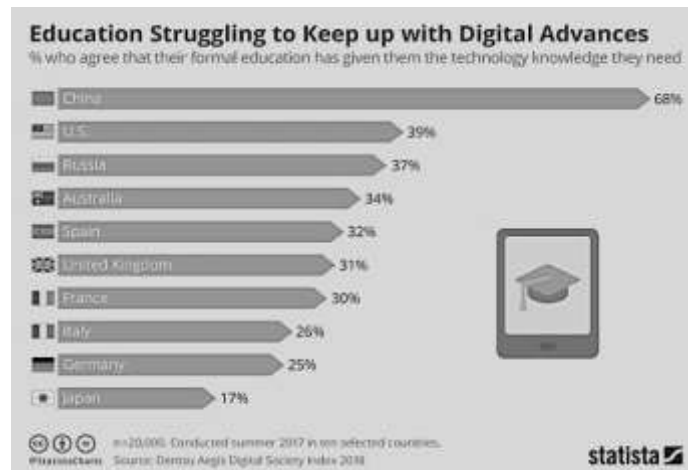


Fig. 7. Education struggling to keep up with Digital advances

What are the potential benefits of IoT in education for administrators?

- **Smart buildings and a better management of equipment and resources (HVAC, light, locks, displays, ...)**
- **Provides a safer learning environment**
- **Enrich LMS content**
- **Lowering costs of STEM labs**

STEM is a curriculum based on the idea of educating students in four specific disciplines — science, technology, engineering and mathematics — in an interdisciplinary and applied approach. Rather than teach the four disciplines as separate and discrete subjects, STEM integrates them into a cohesive learning paradigm based on real-world applications.

- **STEM (Science, technology, engineering, and mathematics)**

According to a report by the website STEMconnector.org, by 2018, projections estimate the need for 8.65 million workers in STEM-related jobs. The manufacturing sector faces an alarmingly large shortage of employees with the necessary skills — nearly 600,000.

The field of cloud computing alone will have created 1.7 million jobs between 2011 and 2015, according to the report.

The U.S. Bureau of Labor Statistics projects that by 2018, the bulk of STEM careers will be:

- (1) Computing – 71 percent
- (2) Traditional Engineering – 16 percent
- (3) Physical sciences – 7 percent
- (4) Life sciences – 4 percent
- (5) Mathematics – 2 percent

STEM jobs do not all require higher education or even a college degree.

The most important Challenges of educational management is related to

- **Curriculum:** The term curriculum refers to the lessons and academic content taught in a school or in a specific course or program. It should be up-to-date and Future-based. If it would be according to current needs, it may face failure.

- **Human Resources:** The function of human resource management in education includes staff maintenance, staff relations, staff development, procurement of staff and job performance reward. The challenges of human resource management include poor working condition, problem of staffing, funding, incessant transfer of teacher among others. The educational managers should be skillful for that position to make correct decisions and teachers should be suitable to transfer knowledge to students.

- **Financial Restriction:** Education finance refers to governmental and organizational processes by which revenues are generated (through taxation, tuition, fees, and philanthropy), distributed, and expended for the operational and capital support of formal schooling. It is the common problem to buy new technological equipments.

- **Distance Learning / E-Learning:** With the advent of e-learning technology, academics are facing the challenges of acquiring and implementing IT skills for the purposes of teaching. According to some distinguished researchers, that internet is a perfect tool of learning that offers flexibility and expediency to learners at the same time offering endless opportunities for innovate teaching. This method may not have enough influence on learners. Most of learns do not prefer virtual teachings.

- **Cultural Challenge:** The effect of culture can't be ignored. Among the challenges faced by educators in promoting critical thinking is that of cultural compatibility. Multicultural education encompasses practices and theories that support equitable opportunities and academic achievement for all students. An educational planning may be suitable for a special culture. So it should be customized.

- **Applicable and Practical courses:** Learning during internship is the best way of acquiring knowledge by using both practical and theoretical aspects of a thing or situation. Theoretical knowledge has its own importance in the

learning. Theoretical knowledge is the base of doing anything practically. The curriculum should be mixture of Academic, Applied sciences and Vocational to gain the best results. This method can train skillful graduates.

- **How to trust the exams:** The consequences of cheating, however, can be truly dire and range from temporary academic difficulties to serious legal problems and permanent reputation damage. It is important to make participants sure about the online education system and don't let them to cheat.

- **Logistics:** Use the Drop shipping Techniques can make the transfer the documents easier.

- **Quality of Curriculum:** Curriculum as a guideline conduct the learners to a correct path with a suitable program according their major. Quality of Curriculum depends on policy changes, emerging new technologies, globalization and the refugee and immigration issue.

- **Competitors:** Getting students involved in competitions and challenges are a fantastic way of engaging them with new subjects, whilst building their confidence, teamwork and practical skills. A new method with high satisfaction level of the users can be more interesting.

- **Gap among Theatrical topics , Market and Industry:** Despite this gap, the learners can't use their academic knowledge at the external environment. Therefore the academic studying will be useless.

- **Lack of Confidence:** According to the latest research report shared by the State of IoT Security, which was released at the end of October 2018, showed the following information:

- ✓ 96 percent of companies and 90 percent of consumers believe there should be IoT security code of practice.

- ✓ 54 percent of consumers possess an average of four IoT devices, but then again only 14 percent consider that they are familiar with IoT device security.

- ✓ 65 percent of consumers are petrified about a hacker monitoring their IoT device, whereas around 60 percent are fretful of their personal or professional data being leaked.

- **Lack of Balancing:** The different learning needs of learners can make difficult the use of a certain method for all of them. The educational manager should select appropriate strategy for teaching system.

- **Respecting expectations:** Educational managers should respect expectations from learners and pay attention to their studying goals.

- **Changing job market:** Students have to focus on their human skills if they do not want to be left behind and made redundant. This means that instead of instilling qualities that machines are designed for – such as obedience and memory recall – education in 2018 needs to focus on developing soft skills that machines cannot do. In order to prevent mass structural unemployment in the future, education in 2018 needs to look forward to the economy of tomorrow and focus on the skills that will be relevant to pupils when they enter the job market.

- **Social and emotional intelligence:** In an increasingly unsteady political world, which is becoming more digitized by the day, social awareness and emotional intelligence are two of the most important students skills. While education used to prepare students for the industrial world, 2018 is the year education has to restore the damage the industrial world has done.

Internet of Business can be a solution for "The World After Corona".

According to the Matthias Horx as a researcher for future studies in Germany, and his colleagues at the "Institute for Future Research" have recently published a book entitled "The World After Corona", which has been widely reported in the German medias. Referring to the crisis caused by the outbreak of the disease, he writes: "These days I'm often asked, 'When will Corona's era end and we'll be back to normal?' 'I say: never. There are some historical periods that change the course of the future. We call these periods a "deep crisis" We are now in this position and the result of his team research"

(1) The world will change: The contagion of Covid-19 made us realize how much we don't understand. / Families, neighbors, and friends became closer

(2) Behaviors will change: Digital culture technology has taken its place in practice. / Most co-workers, who previously avoided remote video conferencing and preferred mission flights, now realize that it's a more practical

and constructive approach. / Education stakeholders (professors, students, and executives) have learned a lot about Internet education, and working in online form (Home-office)

(3) Humanity will return: The medical staff helps, but along with advanced medical techniques, our social behavior is also crucial. / After the outbreak, we look back and remember how much humanity was really before contagion.

(4) The economy after the contagion crisis: Humans will also look at the economy to see how far the economy has been weakened, without dying. / Although we have experienced infrastructure damage and stock markets have fallen by 50 percent and many companies have gone bankrupt, we have never reached zero, the notion of economics is a living being that can sleep and even dream but continue to live.

(5) The main losers of the contagion of the Covid-19: Those who want to incite people against each other are not playing a role in future issues

He has shown the result of a research concerning the most likely challenges, risks and crises in next year as below:

The 31 risks have been grouped into five major categories:

- (1) Economic: 10 risks
- (2) Societal: 9 risks
- (3) Geopolitical: 6 risks
- (4) Technological: 4 risks
- (5) Environmental: 2 risks

At the end he forecasted the next huge crises until 2030 as below:

- 1) Today, Contagion of the Covid-19 challenge
- 2) Tomorrow, Recession Crises
- 3) Tomorrow, Climate Change Crises
- 4) Tomorrow, Biodiversity Collapse Crises

Sustainable Development

Sustainable development is one the most important and controversial phenomena of recent decades [3]. It is concerned with strategies, policies and efforts utilized to improve human well-being and to maintain the world for future generations through the management of human environmental systems [4].

Sustainable development, based on three indicators—social, economic and environmental sustainability—is a solution to provide basic human needs, creating environmental development and protection, achieving equality, ensuring social self-determination and cultural diversity, and preserving ecological integrity in order to improve the quality of human life [5,6].

The authors believe that sustainability has more pillars than the three abovementioned ones. We contend that seven pillars are required to develop sustainability: environment, economic, social, educational, cultural, technical and political aspects form sustainability. These aspects make a puzzle in which all of the segments are directly or indirectly related to each other. Figure 1 presents seven aspects of sustainability (7PS model) and its classification. This model is focusing on seven pillars of sustainability as below:

1. Economy
2. Social
3. Environmental
4. Political
5. Cultural
6. Educational
7. Technical

In order to achieve sustainability all these seven parameters should improve approximately equably. With this model we can calculate the sustainability in each company, business, city, or area. Sustainability has occurred when the figure is more regular. In addition, the ratio could influence the achievement of sustainability. Generally, the blue shape is more sustainable than the red one. Not only is the blue one's ratio higher but also the blue one's regularity is more proper than the red one. These two reasons make the blue shape more sustainable than the red one. In other words, approaching a high ratio of sustainability and developing approximate equability are required to achieve sustainability and sustainable development [7].

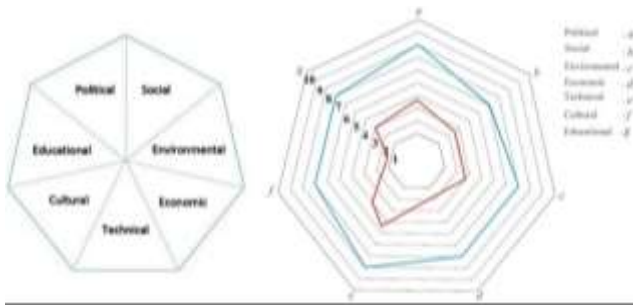


Fig. 8. 7 PS Model [7,63].

Generally, high quality of livability and life, health and prosperity with social justice, being environmentally friendly and preserving the earth’s capacity to support future life are the main aims of sustainable development [8].

The Covid-19 pandemic

The Covid-19 pandemic is changing our society on diverse dimensions (not only on an economic or social level). Since the 1970s, the emerging digitization and modern technologies began to influence urban infrastructures, societies, and individuals’ lives. Particularly, large cities are sensitive to challenges like pollution, lack of infrastructure, gentrification, economic instabilities, and recently, health crises. Sustainability is the sufficient key for cities to improve their livability and quality of life. To gain sustainability, a new urban life a concept needs to be suggested. The world economy has already changed from a business economy to a data and business economy, leading to the concept of the “Internet of Business” with many popular IoT applications involved (i.e. wearables, smart city, smart society, smart retail, smart supply chain).

One of the aims of this proposal is to report on new scenarios, technologies, and applications related to the concept of the Internet of Business (IoB) and discuss consequences, challenges, risks and crises on future of business revolution. Examples of this work include the description of new business models and new operating methodologies related to all business sectors, the impact of the digital transformation on the players of these business sectors, new policies and strategies for the monitoring and controlling of these business activities, and new models of data monetization in business. The proposal also aims to cover the impact of 4.0 technologies on business, including the large-scale deployment of IoT, the employment of big data and machine learning for business forecasting, the use of cloud platforms for the control of smart business, the new cyber-risks for the business sector and the future of business.

The theoretical basis for this approach is diverse, but the focus lies on “the 5th wave theory” which has implications on 1) SMEs with environmental responsibility including a focus on blue-green sustainability, 2) SMEs with social cohesion and 3) SMEs with economic efficiency (figure 8). It is critical to focus not only on profit optimizing but instead also on sustainability and CSR for the environment and saving of resources (figure 2). The 5th wave theory is concentrating on the readiness to change into the new age we are just entering. Within this project, the applicant wants to implement the readiness strategies with designing a future scenario and testing the applicability of my theories to design empirical investigation from my theoretical approaches. (cf. on 5th wave theory) for (1) Forecasting (2) Preventing and (3) Facing to the Post Sustainability Impact of Contagion of Covid-19, today’s social challenges/consequences and tomorrow’s social crises/shocks with using open innovation, implementation, development and applying these technologies to provide readiness strategies with CSR approach. (e.g. for the SME 5.0 in Industry 5.0 and the super intelligent society or Society 6.0). Getting the world back on its feet, with environmental responsibility, social cohesion and economic efficiency for investments! Cohesion is crucial to ensuring a balanced recovery from the coronavirus pandemic and making sure no one is left behind. With the REACT-EU initiative, we want to extend the crisis response and repair measures to the most affected sectors and regions. It will help us: 1) Reinforce the health care system 2) Support affected citizen’s lives and jobs 3) Enhance basic services for citizens and 4) Make the world economies more resilient and sustainable.

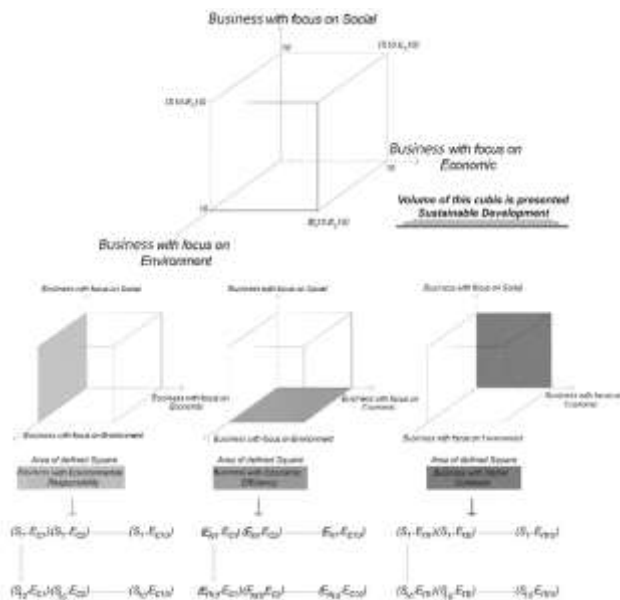
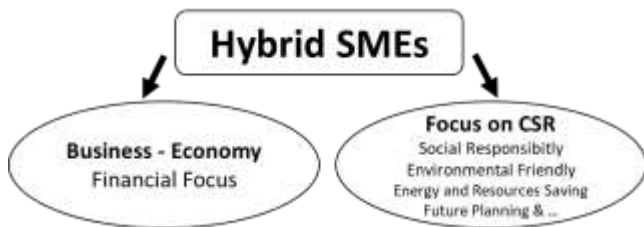


Fig. 9. Sustainable SMEs with focus on 3D Socio Eco Environment (Doost, 2019)

Hybrid SMEs

Generally, IoT, digitalization and smart education management could be tools and motivation to improve HR competencies towards modern hybrid Companies/SMEs like Companies in I4.0 or SME 4.0 that are able to participate, compete and survive in markets as well as cultivating sustainable



development. The 5th theory founded on HR education/training and utilizing high technology in businesses is a path to create modern innovative SMEs concerned on CSR strategies, environmental sustainability and sustainable development as well as successful business that are able to conquer future concerns towards more sustainable and livable World. (To balance between CSR & business)

Fig. 10. Hybrid SMEs [Prof. Dr. Hamid Doost Mohammadian, 2019]

IOT – A SOLUTION FOR EDUCATIONAL AND LEARNING MANAGEMENT CHALLENGES

Most of us today are living in a time where we’re harnessing the true potential of technology, including the connectivity of data and all the wonders of the online world. Anyone who denies that the internet is playing a part in the rapid change of society isn’t living in the real world. One way of harnessing this power is in the classroom environment. Today, more and more educators are using the Internet to make changes in the education system. However, it’s not always in the classroom, in fact, the classroom can be transported outside in the way of open university education and through the use of tablets and e-learning software. Smart schools have facilities that function in a smooth fashion with highly personalized learning methods. The physical technology that underpins this can make use of Wi-Fi and networks to send and receive data, instructions, and learning materials. This, coupled with

the sheer computational power of IoT, can create a brain behind schools to track and maintain lesson plans, keep an eye on student progress, tailor certain materials for weak students, and a whole lot more. It’s certainly an exciting time to be alive. [12,54,76].

Internet of Things enables various devices that we use on a daily basis can interact with each other via Internet. This ensures the devices to be smart and send the information to a centralized system, which will then monitor and take actions according to the task given to it. Internet of Things can be used in wide range of domains including healthcare, transportation, entertainment, power grids and smart buildings. It is expected to act as a catalyst for the future technological innovations and its use is expected to rise exponentially over the coming years.

The idea behind Internet of Things is creating a system that stores all data required by human beings without having a direct hand in collecting it. Research suggests that the impact of Internet of Things on the world will be monumental in upcoming years. The growth in its influence and application can be assessed from consumer patterns for entertainment and media, infrastructure and energy management, agriculture, transportation and even medical care. Given the current trends, the impact of Internet of Things on human life is increasing exponentially and will only continue to rise.

With a massive amount of devices connected to the Internet and the huge data associated with it, there remain concerns about the security. By security we mean the degree of resistance to, or protection of the IoT infrastructure and applications. Many of these devices are easy targets for intrusion because they rely on very few outside resources and are often left unattended. Once the network layer is compromised, it is very easy for a hacker to gain control and maliciously use a device as well as attack other devices nearby through the original compromised node. In particular, appliances that maintain an online presence are easy to attack. These devices that do not have any virus protection or malware protection are highly susceptible to being used as “bots” to forward malicious code to infect other devices. The International Data Corporation predicts that more than 200 million devices will be connected to the Internet. By the year 2020, with a good amount of these being appliances; there will be a large opportunity for hackers to use these devices to their advantage through “denial of service” attacks, malicious email, and other harmful worms or Trojans. A recent HP study reveals that 70% of Internet of Things devices are vulnerable to attacks.

Potential IoT Benefits for Students
Adaptive/ personalized learning
2- Just in time learning - It refers to making learning available when needed by the student , and at the time that the student needs the information or knowledge. - He can also have a personal assistant to help him to use the various contents.
3- Increase student engagement
4- Better students outcomes

Fig. 11. Potential IoT Benefits for Students

Potential IoT Benefits for Professors
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1- Better tools to explain subjects and theories
2- Help professor to run educational activities in various educational scenarios
3- Better professor engagement
4- Reduce administrative procedures (e.g. attendance tracking)
5- Better tools for measurement students' performance and achievements
6- Better tools to elaborate experiments (e.g. improve STEM teaching)

Fig. 12. Potential IoT Benefits for Professors

IOT APPLICATIONS IN EDUCATION AND LEARNING

Now, let's have a deeper look into the applications of IoT in the education sector.

- **Interactive Learning:** Today, learning is not limited only to the combination of images and texts but much more than that. Many textbooks are joined to web-based sites that incorporate additional videos, materials, animations, assessments, and other materials to aid the learning process.

This provides a broader perspective to the students in gaining knowledge on new things with a better understanding and interaction with their friends and teachers. The real-world problems are discussed in classroom by the educational professionals and students are made to find the answers for these problems.

- **Security:** As there will be many students present in a class of any educational institution, monitoring the whereabouts and activities of each and every students is not an easy task. Moreover, the students in an educational institution are more exposed to risks and require smart security when compared with the population at any other places of work. IoT can add an immense value in terms of enhancing the security of schools, colleges, and any other learning centres.

With the help of technologies like 3D positioning, students can be monitored 24/7 and their presence can be reported at any given point of time. The option of distress buttons can also be provided by these technologies for raising an alarm if in case the need arises.

For monitoring the student behavior, intelligent camera vision can be used in the campus. Recently, computer vision technologies have improved a lot and can monitor any signature movements. This activity can automatically can stop any unexpected incidents from taking place.

- **Educational Apps:** The educational apps leveraging IoT can be regarded as powerful creative tools and are transforming the way in which teaching and learning is done. They also enable the teachers and students to create 3D graphics textbooks which feature videos and provide the capability to take notes.

These kind of apps can be considered as game changers as they provide a large number of educational games. These games provide numerous features that offer interesting possibilities in teaching and learning. This makes education more appealing than ever before.

• **Increasing Efficiency:** In many schools and colleges, a lot of time is spent on activities that do not add any value to the core aim of their very existence. For instance, attendance of the students' needs to be taken several times a day. Additionally, this data has to be sent to the central office for different purposes. The IoT can put an end to this inefficient system.

With the help of IoT end-devices, this data can be collected and sent to the central office server automatically eliminating the need for any human intervention. Due to this revolutionary shift towards the IoT, the tedious task of teachers and students can be minimized. This allows them to concentrate more on teaching and learning which the core function of any center of learning is.

• **Electronic certificates:** Electronic certificates are a more reliable way to store data, if they are not located exclusively on a personal computer. These documents can be stored online in different personal accounts, which limits third-party access; furthermore, storing such documentation in centralised systems, which constitute the majority of those online, does not eliminate the risk of loss.

Rating of teachers and schools: Teacher's ratings will be formed according to student grades and academic achievement, and publication citations. School ratings will be formed based on the rating of their teachers, the academic achievements of its graduates, and other information, such as that school's participation in different academic events, which can help to assess the attractiveness of the school for prospective students.

CASE STUDY: EDUCATIONAL SYSTEM OF GERMANY

The Fachhochschule des Mittelstands¹ is a private, state accredited University of Applied Sciences based in Bielefeld, Germany

FHM secrets on IoT infrastructure

- Future based curriculum
- Combination of Academic-Vocational and Applied Sciences
- Serious Internship
- Executive Professors
- Focus on SMEs
- Training with Entrepreneurship approaches
- It promotes thinking and acting entrepreneurially
- IT supports a holistic development of personality
- It causes individual and societal benefit
- It assures and improve the quality of their services

Skills

- general business skills
- specialized subject skills
- personal and social skills

Economic Competence	Personal and Social Competence	Activity and Operational Competence
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¹ University of Applied Sciences (FHM) – www.fh-mittelsland.de

-Business Administration	-Self-management and marketing	-Studies in Practice (SiP)
-Enterprise Management	-Business English	- Scientific Methodology
-Marketing	-Team Management	- Strategic Career Planning
	-Presentation & Moderation	- Company Foundation
Professional Competence for the specific degree program		

Fig. 13. Skills

German Mittelstand: The German Mittelstand provides a constant high level of employment und productivity and is therefore the spine of the German national economy. More than 99 percent of all German corporations belong to the "German Mittelstand" and contribute virtually 55 percent to the complete economic performance. Mittelständische middle-sized corporations are innovative, successful abroad and an important job generator for young people.

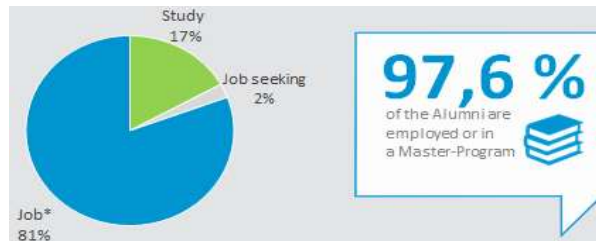


Fig. 14. Success rates of alumni (2016 I/II)

CONCLUSION

This paper reviewed definition and application of IoT, a new generation of technology which can be applied in differenet issues specially in the field of education. We can't ignore the fundamental role of education in the age of technology development, the effect of educational managers to fulfill educational project and some of the major challenges facing the Internet of Things.

Based on my EU Erasmus Plus IoE-EQ project, **FIRST RESULTS:** Analysis of training and educational needs are as below:

- (1) Developing new business models
- (2) Design of smart application
- (3) Lack of technical skills/Competences
- (4) Security concerns

Many of the research challenges are expected to be effectively addressed, and distributed applications, as well as technologies developed in recent years, are once again tested in the real world. The Internet paradigm of things and

the promise of more efficiency in education and distributing technology represent the future of all actors in the education system.

In conclusion, IoT's application in education are limitless and we are already seeing it in some of the smart schools today. However, we haven't even scratched the surface when it comes to learning applications. Although IoT devices need high upfront capital investments, the benefits can outweigh the drawbacks in the future. It not only provides a better learning process for students but also reduces operational costs.

The results of this paper demonstrate that Internet of Things technology is capable to recognize it's quite evident that organizations all over the world are boarding onto IoT-driven digital transformation ventures to drive competences and education suppleness, in addition to better meet the demands of their students and teachers. There might be risks to these ventures, but, nonetheless, if coped appropriately, educational organizations could be further assured and the road to Internet of Things victory and efficiency should be impartially smooth. To clarify the impress of IoT as a solution for education, we introduce FHM university of Applied sciences as a case study. It is one of the successful educational organizations in Germany. (third business school in Germany)

FUTURE RESEARCH SUGGESTIONS

As it mentioned, IoT has vast application in different contexts which other scholars can choose to reach new results according the previous researches as a guide map. Considering the importance of energy's as valuable resources and train human resources in our life, the following titles are neotric matters which may cause to wonderful findings and assistance for managers to conduct subsequent plans:

- Developing IoT technology approach to solve the educational challenges
- Preparing the European Universities and VET providers to face this educational challenge and offer courses on IoT
- Alternative ways of replacing renewable energy sources
- Role of IoT for communication, education in preservation and transmission of social values to sustainable development
- Defining the domains affected by the implementation of intelligent educational management system
- Presentation of a model for the implementation of Internet technology of education
- Understanding the infrastructure of Internet technology implementation
- Developing a multifaceted technology approach to Internet of Things security, interoperability, management and privacy
- Developing the educational infrastructures by using IoT
- Using IoT educational solutions to implement the cultural synergy for social capital
- Considering lightweight, scalable and adaptive security solutions in place to secure the users' information and preserve their privacy in the Internet of Things.

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Urban wind ventilation across current developments

Elton Hala¹, Florian Nepravishta¹, Neritan Shkodrani²

¹Faculty of Architecture and Urban Planning; ²Faculty of Civil Engineering, - Polytechnic University of Tirana, Albania.

Abstract

People's comfort and safety depend also on microclimate conditions and particularly urban wind that is directed by urban obstacles. To take advantage of micro-climatic conditions, we have investigated the relationship between airflow and urban patterns. Since every city has a unique layout, wind flow remains complicated and hard to predict. This paper tries to enhance the natural ventilation and promote a better living urban context. CFD simulations were used to understand the aerodynamic performance in the studied area. The results of the simulations are three-dimensional fields of velocity and wind pressure covering the entire computational domain. Results show that adjacent buildings are unfavorable to urban ventilation, but they didn't influence at large the wind flow, mostly because of their low-rise. However, prolonged structures should be separated or if it's possible, they should be avoided. With the recommendations coming out from this study, urban planners would become aware of the wind ventilation issues at the beginning of their work, thus avoiding negative effects in their final designs.

Keywords: natural ventilation; urban wind; wind flow; urban pattern; adjacent structures; low-rise buildings; wind corridors

Introduction

An increase number of people are living in cities and town, particularly in the second half of the last century (UN World Urbanization Prospects, 2018). The green spaces within the urban area are diminishing progressively, therefore, the landscaping gives way to buildings and other technological pavements. Undoubtedly most of the cities are spread continuously and the major reason for this expansion is the fast-economic growth these cities are characterized. The development often leads to dense urban contexts, especially in the center areas. In these dense urban contexts, natural ventilation is not conducted easily since a small amount of air can infiltrate these public spaces. Wind performance inside an urban area is affected mainly by topography and the architectural barriers. The situation can worsen if these intense urbanizations are surrounded by harmful air pollution produced from vehicles and industry. These intense developments often demonstrate difficulties toward efficient natural ventilation due to their ability of air obstruction within them (Hala and Shkodrani, 2020). Also, (Hala, 2017), confirmed that the direction of breezes is influenced by surrounding forms and could differ from the prevailing wind. Ventilation could be realized in two ways; the passive way (natural ventilation) or the active way (assisted ventilation).

According to (Sani, 1993), the improvement in local legislation and other mitigating strategies has not been sufficiently effective to solve the problems on existing contexts. In many subjects, the quality improvement of urban life has become an important domain. Previous investigations such as (Bosselmann and Arens, 1990), demonstrated the presence of an unpleasant environmental condition related to the urban context in the city of San Francisco. Outdoor public spaces are designed particularly for recreational activities. Therefore, an insufficient ventilated area would reduce the time spent in it. Hence, they show the urban design difficulties into the regional and seasonal environmental elements.

Natural ventilation is related also to seasonal demands. It would be meaningful if it happens naturally during summer when the heat is accumulated especially in the urban gaps where no air infiltration is possible. While in winter, buildings should be protected from wind at high velocity. Hence, strategies for moderating temperatures in the city relate to seasonal requirements.

According to (Crosbie et al. 2008), the wind is indirectly visible in contrary to other environmental elements. Its motion could be detected in the movement of tree branches, in the cloud's overhead, in the dust streams, or in the swirling snowflakes in front of our headlights. However, the motion of the air particles is not directly visible.

According to (Dias, 2015), the incapability to visualize wind motion is a common problem since the way that an air mass moves over and around forms in the environment is unpredictable and a complex fluid flow phenomenon.

Much research is done over the years to visualize the wind flow in the urban patterns included but not limited to ventilation purposes such as (Qingyan, 2004), that made use of computational tools to factorize the urban wind. He also asserts that analytic solutions or on-site analysis are disadvantageous in comparison to computational software. On the other hand, (Kazim et al. 2014) point out the importance of studying in advance the neighboring buildings to obtain an effective natural ventilation system in dense areas. Many other researchers performed an extensive analysis focused in the airflow, heat exchange, steam transportation, fire spread, and other physical phenomena using Computational Fluid Dynamics (CFD) models, to recommend mitigation strategies, and to gain the experiences for creating a better livable city (Crosbie et al. 2008). Wind flow can be evaluated field-level by devices such as anemometers. Though, on-site analysis and wind tunnel tests present insufficient information when comparing to CFD (Hala and Shkodrani, 2020).

Various authors emphasize CFD as an appropriate methodology to deliver precise information in order to better understand this complex phenomenon. Reiter (2010), recommends the usage of CFD as and correct approach to analyze the wind flow in environmentally sensitive domains. On the other hand, there are also skeptic authors such as (Castro and Graham 1999) that are uncertain in the accuracy of CFD, particularly in unverified cases. They sustain that CFD engages a significant amount of computation even while running uncomplicated tasks. The paper evaluates the natural ventilation in the existing building layouts using CFD.

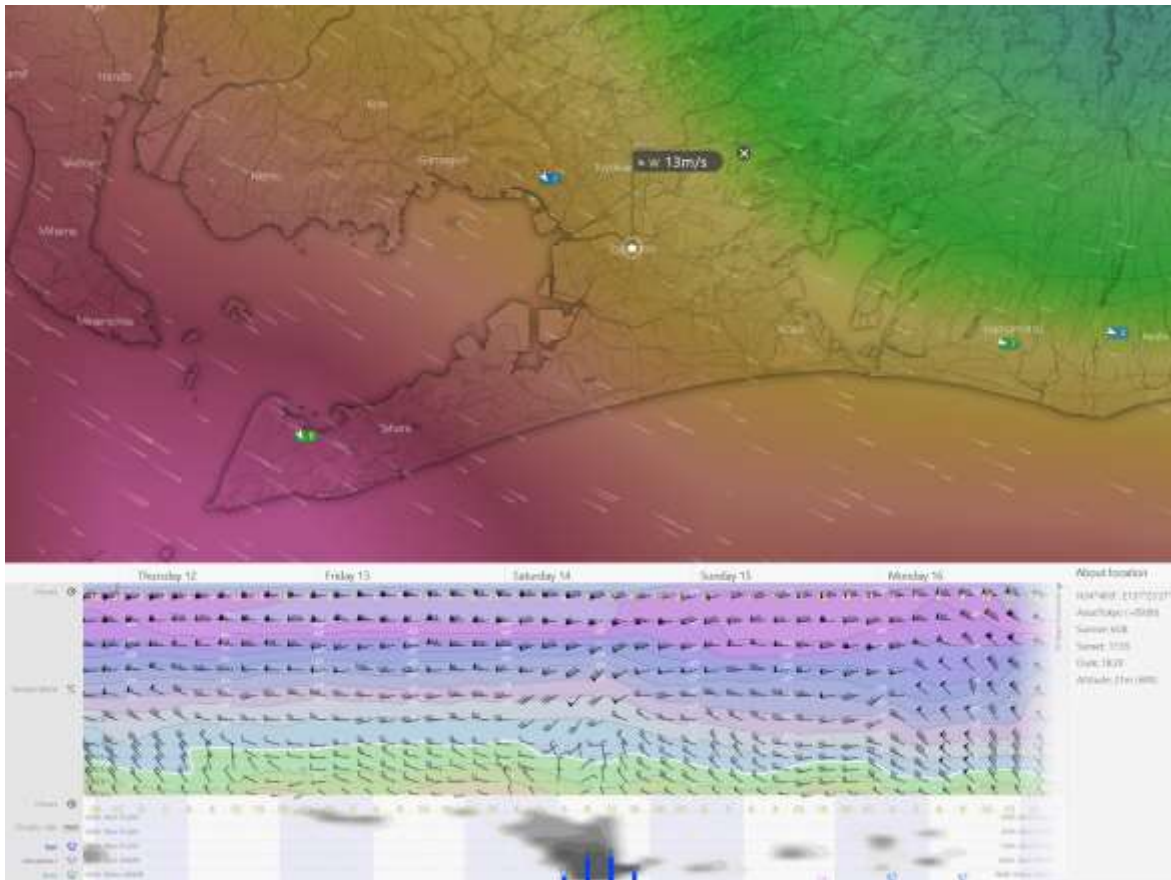


Figure 1: Toyohashi weather according to Windy website

According to the (Weather Spark, 2020), and (Windy, 2020) Toyohashi city in Japan is known for having warm and oppressive summers while the winters present cold weather with strong winds. The wind prevails from

the south (Pacific Ocean side). However, the wind at any given location is conditioned from the topography and wind gusts that change direction often. The winder part of the year last for 5.1 months, from November 15 to April 17, with an average wind speed of more than 10.4 miles per hour (4.65m/s). The calmer time of the year remains the rest of 6.9 months. The average wind velocity during this period does not exceed more than 7.4 miles per hour (3.3m/s). As it seems, wind power represents a great source of energy for improving the thermal comfort inside the city (Figure 1).

Extreme humidity levels variations also define Toyohashi since it is found along the Pacific Ocean. During summer Toyohashi suffers from a muggier period which lasts for about all summer. 25% of summer is characterized by a miserable muggy period (Weather Sparks, 2020) and (Windy, 2020). summer coincides also with the lowest wind velocity which is combined from high levels of humidity thus, often creating discomfort to the people (Figure 2). In hot seasons, people must adapt their behavior with the difficult outdoor environment.

To receive attention from the people of Toyohashi, we have decided to study a sensitive area near Toyohashi



Figure 2: Humidity comfort levels according to Weather Sparks. The percentage of time spent of various humidity comfort levels, categorized by dew point.

train-station that is intensively frequented. Presently, city authorities have made the decision to demolish some old buildings due to the structural degradation placed in the vicinity of the main boulevard. This site matched my criteria to assess the wind flow and natural ventilation in the main boulevard throughout two different scenarios (before and after the building demolition). My study tends to create advantageous conditions in the public spaces of the main boulevard, providing pedestrian comfort when reducing excessive heat during summer. This paper tries to enhance the natural ventilation in a dense urban context where high temperature is present during the hot season (Figure 3).



Figure 3: View from Toyohashi city

Method

The 3D models were built after several on-site investigations. We used to match the exact geometries of the selected area and its surroundings. The dimensions were kept in a 1:1 scale in comparison with reality. Some building details were diminished since we judge it is incapable of affecting the flow mostly because of their small dimensions such as balconies, canopies and so on. No magnification was made in the Z-axis for amplification purposes. The focus was to shape in real scale all the buildings that obstruct the sea breezes dominating from the south.

Different software were used for this simulation, starting with AutoCAD for the matching geometries and the Ansys CFD software package used for the simulations. This 3D model was used to perform simulation analysis to evaluate the effect of wind around the simulation domain. There are many file conflicts between CAD software and a CFD. The CAD file should be readable from CFD and after a couple of adaptations with its format, we were ready to export the file in the CFD software, preserving the exact geometry (Figure 4).

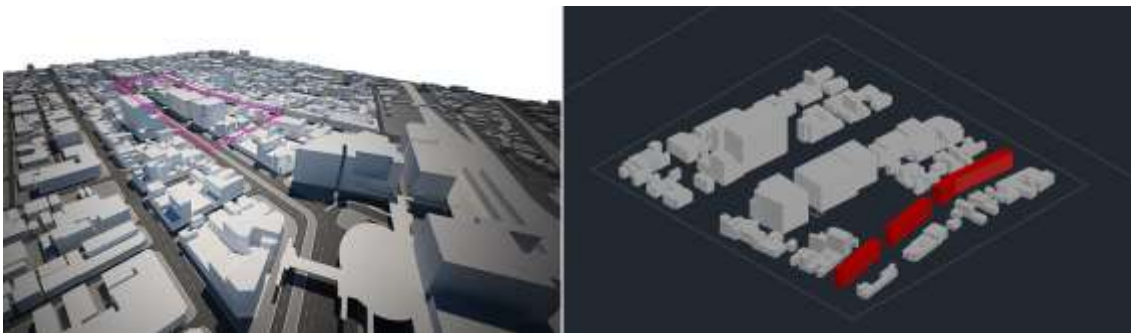
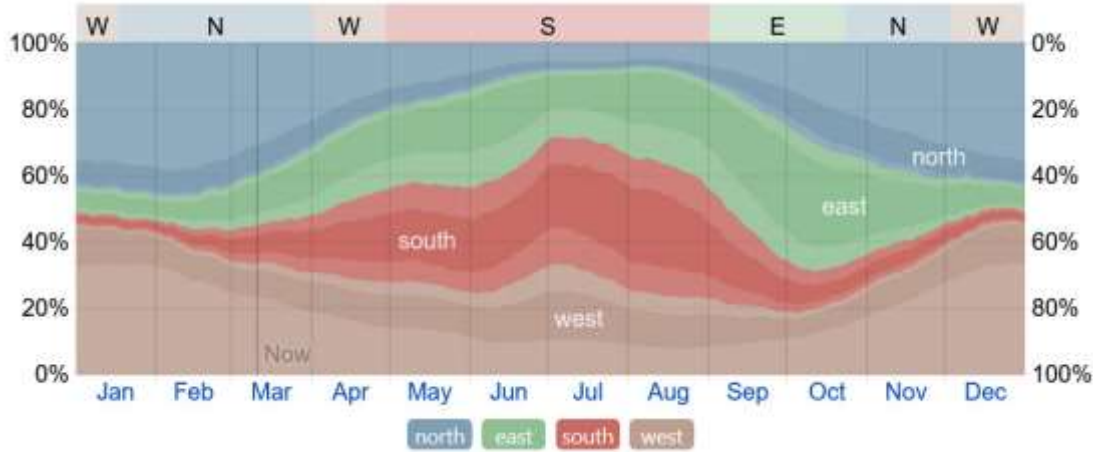


Figure 4: Three dimensional models for the studied area.

Two models were used for the simulations, but the environmental conditions were identical for both models. For both models, the wind direction matched with the statistics gained from the Weather Spark. We chose the prevailing wind from the South. The first model is accurate to the existing geometry with no refinement, while the other model reflects the authority decision to demolish some buildings along with the street (Figure 4). For definition purposes, the buildings to be demolished are painted in color.

According to Weather Sparks [12], Toyohashi wind is most often from the south for 4.1 months, from April 29 to September 1, on July 23. Hence, the wind direction in the simulation matched with the land-sea breeze



breeze coming from the south, dominant in Toyohashi during 41% of the entire year (Figure 5).

With the help of CFD

Figure 5: Wind direction according to Weather Sparks. The percentage of hours in which the mean wind direction is from each of the four directions.

simulations, we were able to acquire different velocity fields. The comparison between these velocity field graphs was the main source for our evaluation.

The turbulence parameters for the model were: Model of turbulence=k-epsilon; Turbulent kinetic energy=0.015; Turbulent dissipation rate $\epsilon = 1.9256E-06$ and Specific Dissipation rate $\omega = 0.0015143$. The wind tunnel parameters were: Kinematic Viscosity: $1.5e-005m^2/s$; Density $1.25kg/m^3$. The calculation is made based on: Numerical solver: Open FOAM, Maximum number of iterations: 500, Convergence criterion (P-Residual) = 0.001.

Results and Discussion

The wind flow was obtained in a horizontal plan 1.5 above the ground that match with the pedestrian high. Both simulations have almost the same geometry. Initially, we used a denser grid to optimize the computational parameters, particularly the time. The results of this model were not considered. Subsequently, we obtained the appropriate combination of parameters and they were as follows: Model dimensions: X=2700m; Y=1000m; Z=2450m. Model mesh information: 1,654,597 cells, 1,928,985 nodes. Model drag force summary: $F_x=824.021kN$, $F_y=62.669kN$, $F_z=621.110kN$. Wind Profile=150m (high). Inlet Wind Velocity=10m/s. This grid has been proven to be efficient in terms of accuracy and computational time.

1. The urban wind is directed from the urban morphology and may vary according to the layout. Within the urban area, the wind direction and particularly the wind velocity can differ from the prevailing wind. High-velocity wind gusts are created especially in small sections (Figure 6).

The wind velocity can vary from 8.9m/s to 9.2m/s which is considered unpleasant for these areas and sometimes danger for pedestrian, according to these studies (Durgin, 1997; Soligo et al. 1998; NEN, 2006; Koss, 2006).

2. The buildings to be demolished do not block a considerable amount of air coming from the south. The

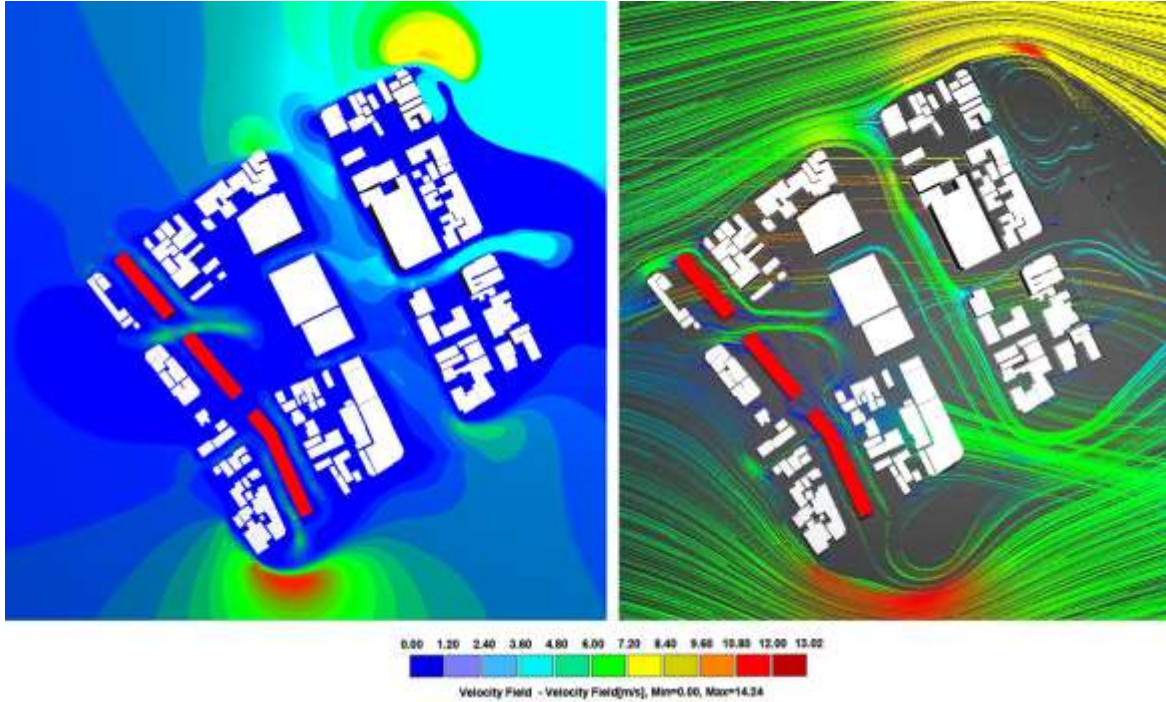


Figure 6: Wind velocity graphs for the studied area without any optimization.

wind velocity in the main boulevard slightly raised from 4.8m/s to 5.2m/s only in certain spots where the air pressure dropped. The velocity field (Figure 7), showed the insufficiency air flow mass to penetrate the boulevard. Even though these buildings, marked in red, are placed transversal to the wind flow, they are insufficient to affect the wind flow. The major reason is found to be their low-rise. This fact is also confirmed from the section view in which it's visible the inability of these buildings have to influence the wind flow (Figure 8). These can't perform as a "wind catcher", typical tall towers that enhance the passive ventilation.

3. The demolition of the existing buildings in red would have resulted in a well-ventilated area. The air circulation was improved from 12% ventilation to 64% ventilation. The wind velocities went up to 6m/s in specific points. The reason for this outcome is found in the lack of wind obstacles such as building or other natural components. This fact also confirms that wind performance inside an urban area is affected mainly by the transportation of the evaporated water of the plant leaves to other areas nearby (Jamei et al. 2014). The wind that passes along water or vegetation is cooler. By doing so, we can contribute to a better air quality during the summer.

According to (Newman 2005), evaporative air increases outdoor comfort by reducing indoor cooling loads, thus reducing energy consumption.

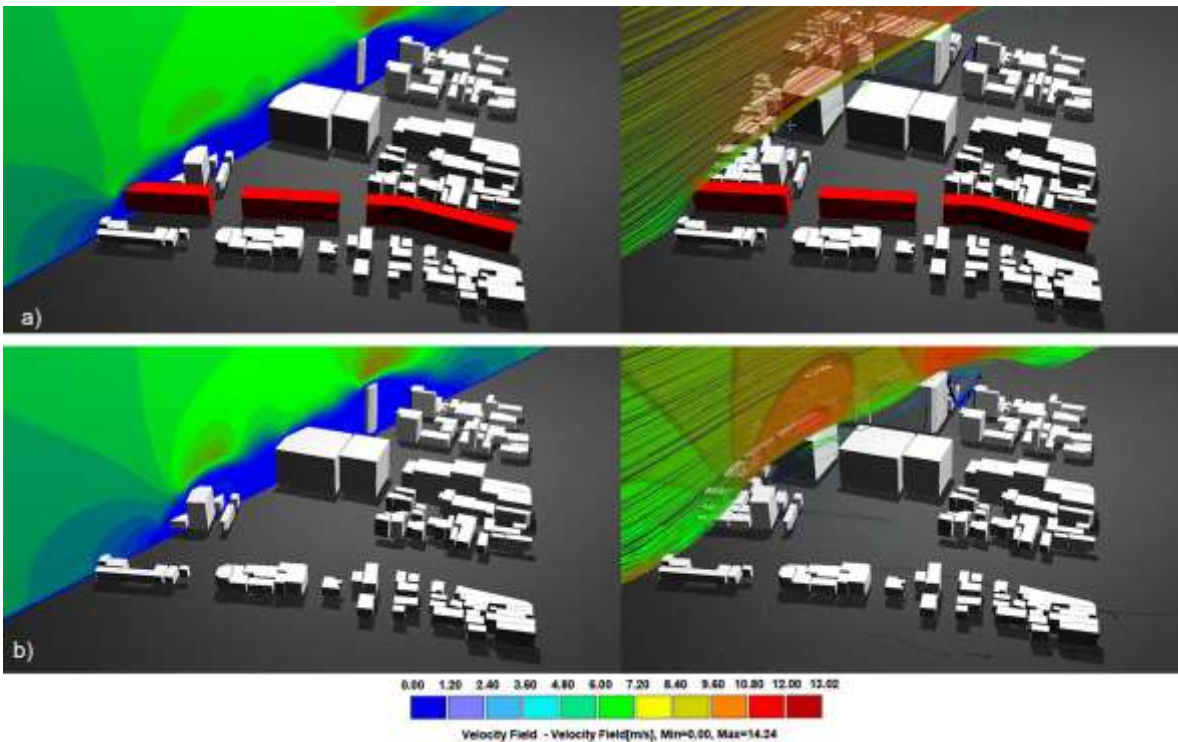
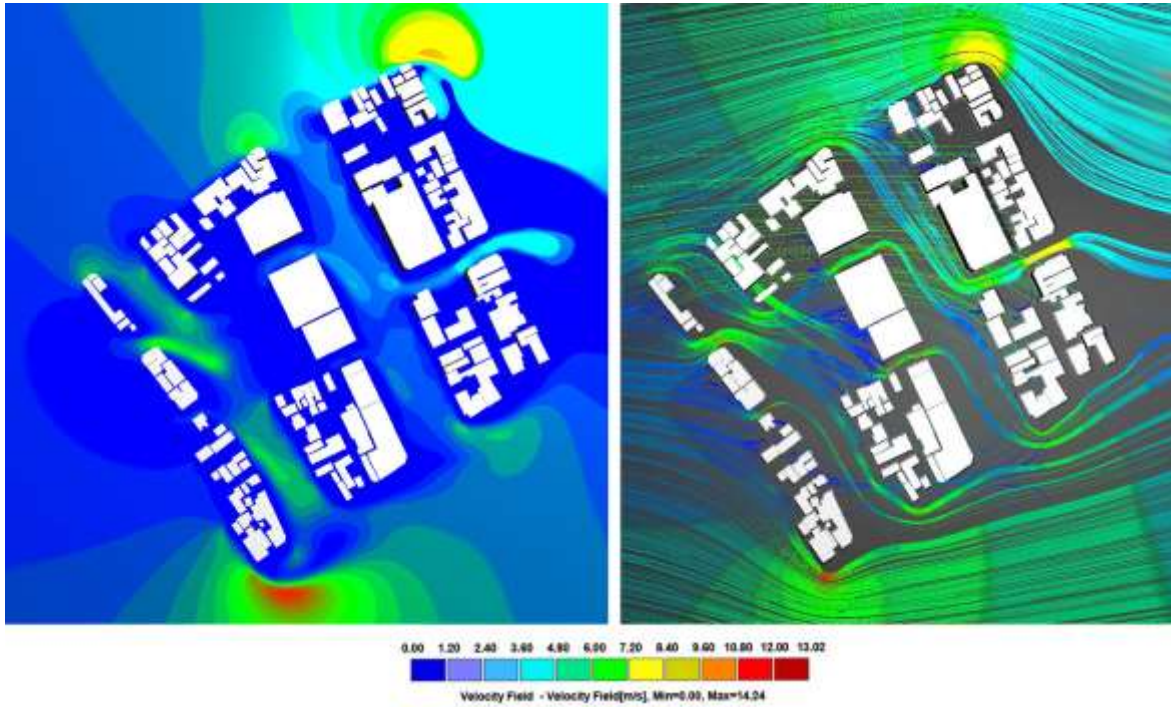


Figure 8: Elevation view; a) current situation without any optimization; b) after the urban design optimization

Conclusions

In this paper, efforts were done to highlight the important role that planners can play in improving the quality of urban life, in two main directions: the use of this natural force to improve microclimate conditions in urban contexts with high density, and in reducing discomfort at the pedestrians level. This paper has analyzed the wind distribution generated in an existing urban context in the city of Toyohashi. A significant outcome was revealed during the model's comparison. After the results we could summarize as follows:

1. This study showed that the method can process three types of information: geometric information, statistical information obtained from meteorological stations, parameterized analytical information in airflows. Through this method we can solve different issues such as: controlled speed and direction of air circulation in the required sectors, the Venturi effect in straits, the effect of vortices in closed sections, the effect of downdraught wind from high buildings, the effect of street canyons, and the effect of immediate wind-gusts.

2. Low-rise buildings cannot affect the wind flow at large since the higher you go the more wind velocity you achieve. The ventilation can be affected mostly from the high-rise buildings.

3. Natural ventilation of outdoor spaces can be achieved in several ways, but one of the most effective would be sensitive urban planning. For a better living space, ventilation paths must be considered for every climate-sensitive city.

4. High - velocity wind is generated in gaps so every urban planner should pay attention to prolonged structures. The scenario without the building provided better ventilation, primarily because of the lack of obstacles.

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Boko Haram Insurgency in North-East of Nigeria; Causes and Challenges to Socio-Economic and National Security

MAUNDE USMAN MUHAMMAD
Department of Islamic Studies, Faculty of Arts
Taraba State University, Jalingo-NIGERIA
usmanmaunde@gmail.com
+2347033087888 & +923185004910

Abstract

Over a decade, a wide ambit of narratives has been proffered on the Boko Haram insurgence in northern Nigeria, particularly its causes and possible solutions. Most of these narratives conflict and thus compete with one another. This is effectively making it difficult for the government of Nigeria and the international community to devise a clear-cut approach to deal with the crisis. The Boko Haram insurgency started in 2002 as a domestic Islamic religious group in Maiduguri, Borno State, in northern Nigeria. The insurgent group clearly opposed the Nigerian government and Western influence in the Northern part of Nigeria as it sought to introduce Sharia law. Like most insurgent groups, the Boko Haram sect resorted to the use of violence and guerrilla tactics against the Nigerian state in an attempt to undermine the government. Unlike other insurgent groups, the Boko Haram wanted to replace government rule and establish a Caliphate within the Northern region. Despite the efforts by the Nigerian government to curtail the insurgent group Boko Haram has transformed into a transnational threat, thereby creating more concern for the international community. Boko Haram currently operates throughout the Republic of Niger, Chad, and Cameroon. The group has carried out series of coordinated attacks against citizens, government officials, military forces, and foreigners in order to create fear, gain popularity, or inspire other Islamic extremist groups and individuals. The methodological approach used in this paper is completely organized based on the published secondary data and evidences. The paper largely takes the documentation of history into account. Meanwhile, the descriptive, prescriptive and annalistic approach has also been applied in the Paper

Key Words: Boko Haram, Insurgency, North-East, Nigeria, Security

Introduction

Terrorism can be defined as “the premeditated use or threat to use violence by individuals or sub-national groups in order to obtain a political or social objective through the intimidation of a large audience beyond

that of their immediate victims.” Although state agents can engage in terrorist acts against the people, the term “terrorists” is usually used to describe those who act outside the normal framework of society by engaging in illegal and often lethal and destruction activities that compromised state cohesion. We expect their motivations and grievances to be related to the types of attacks that they perpetrate. Terrorist attacks on people, communities, governments and infrastructure have resulted in tension and panic around the globe. Some terrorist organizations have international ambition while some do not. Some, on the other hand, have territorial ambition and therefore capture territory through force and establish new government-like structures. (Adesoji & Abdullahi 2016)

Given the growing incidence of terrorism around the globe, is now generally viewed as a leading global security threat. This has spurred broader thinking about its causes, what it entails, and how it impacts on people and society. However, the complexity of terrorist behaviour and the diversity of root causes and objectives make it difficult to answer these questions. Also, significant gaps remain in public understanding of terrorism and in the understanding of policymakers about public perception. Knowledge of what constitutes the root causes and objectives of terrorist organizations continues to evolve in response to the needs of governments, international organizations and security experts to develop strategies to prevent and manage terrorist attacks. For example, regarding root causes, there is growing evidence that terrorism is largely explained by socio-economic, political and religious factors. (Michael 2017)

Although extensive research has been conducted on the various underlying factors on terrorism, one key missing element in the literature is how the public perceives these factors. Especially for Boko Haram, a unique terrorist organization due to its territorial ambition and regional focus, a survey of public opinion is helpful in identifying how the public perceives it. For example, if the public perceives Boko Haram’s cause as legitimate, challenges may face government agencies empowered to address the problem. If the public feels that the cause is government ineffectiveness, it may be difficult for the government to convince the public that its solutions will be effective. Terrorist organizations tend to recruit from within a pool of sympathizers. It is often argued that terrorists are aware of the importance of public opinion, hence, plan their attacks in order to sway opinion in an intended direction and this is evidenced by the frequency of their attacks, place location, timing and targets of their attacks. This implies that terrorists manipulate public opinions and reactions to their advantage. An understanding of public opinion about terrorists can also enable policymakers to implement programs that have more popular supports and better gauge the effectiveness of government actions. This study investigates causes of Boko Haram, which has

had a devastating impact on the Northeast part of Nigeria. The study focuses on the perceptions of citizens from the immediate areas of Boko Haram attacks, as well as other areas in Northern Nigeria. Drawing on existing literature, I developed an interest to obtain information on the main objectives of the Boko Haram insurgents and how it becomes one of the security challenges of Nigeria.

I structure the rest of this paper as follows. Next, I summarize the history of Boko Haram and its activities. Next, I present a literature review on the root causes and objectives of terrorists. Then, I present my key research questions and results. Finally, I offer some conclusions.

Review of Literature

Boko Haram has intensified its operation in the North-East of Nigeria despite the state of emergency that was declared by the federal government in the three states in the northern region where Boko Haram activities are concentrated. The activities of the sect have been of concern to scholars who have written various academic papers on the modus operandi of Boko Haram. Eme and Ibieta (2012) analyze the origin and ideology of the sect, from their analysis they posit that Jama'atu Ahlis Sunna Lidda'awati Wal-Jihad better known as Boko Haram is an Islamic terrorist group that has a strong operational based in the northeast of Nigeria. The ideology of the sect according to them is to bring to an end the secular system of government and introduce sharia law in Nigeria. However, Lister (2012) did not subscribe to the notion that the Boko Haram aim is to Islamize Nigeria through the introduction of sharia law. According to him, the foot soldiers of the sect are disgruntled youths who have been paid by unscrupulous politicians to cause mayhem in the country because of their selfish ambitions. This is the assumption from the southern part of Nigeria, where the past president comes from that the activities of the sect was more intensified because of the emergence of the previous president who is a southerner. The high rate of poverty, unemployment and political corruption have been blamed on the elongation of the conflict. Most of the foot soldiers of Boko Haram are youths that are frustrated because they lack employment, income and they have been disdained by politicians after being used by these politicians for their elections victory. Cook (2013); Awojobi (2014); Onuoha (2014) all assert that the youths enlisted into Boko Haram because of the prevalence of poverty. Aside the killings, kidnapping and bombing of the sect, their activities constitute a hindrance to the socio-economic development of the northeast where their operation is focused and Nigeria as a whole. Eme and Ibieta (2012); Ogochukwu (2013); Odita and Akan (2014); Ovaga (n.d.) agree with their study on the Boko Haram insurgency that the sect heinous crimes hinder socio-economic

development in Nigeria. For the major attacks and modus operandi of the sect see (Eme and Ibieta 2012; Ovaga, n.d.; Odita and Akan 2014).

The Concept of Boko Haram

Adesoji & Abdullahi (2016) define Boko Haram, a radical Islamist group, has heightened the state of insecurity and become a major destabilizing force in Nigeria and surrounding countries. Formally known as “Jama’atu Ahlus-Sunnah Lidda Awati wal Jihad”, its origin can be traced back to 2002 when its members organized around its charismatic leader, Mohammed Yusuf, in Maiduguri, the Borno State capital. Yusuf instilled in the group an extreme Islamic ideology and a high degree of disdain for western principles and culture. Boko Haram, simply translated from Hausa to English, means “western education is forbidden.” It aims to create an Islamic state, impose sharia law in Northern Nigeria, do away with western principles and culture, and rid society of bad governance, corruption and moral depravation. These, they believe, are against the tenets of Islam.

They also say: Boko Haram’s violence became palpable in July 2009 when it commenced its attacks, including the killing of police forces and the bombing of government officials, places of worship, public institutions and innocent civilians. Although the movement started with a strong criticism of northern Muslims for engaging in un-Islamic practices, it remained largely non-violent until 2009 when violent crackdown by the Police led to the arrest of some key members, including, Mohammed Yusuf, who was subsequently killed by the police. The killing of Yusuf and other members of the sect spawned anger amongst the group, leading to violent attacks against police forces and innocent victims. (Adesoji & Abdullahi 2016)

In the aftermath of violent crackdowns, Boko Haram sect as the “most recent extremist group in Nigeria,” which continues to commit a lot of violence atrocity against soft targets. Despite Nigerian government efforts to combat the sect, it continues to prove resistance as they claimed that the government lacked the solution in dealing with the challenge of violent extremism. Boko Haram became a highly destructive and lethal group, killing thousands and displacing millions in Northeast Nigeria. Boko Haram vigorously uses brutal tactics such as suicide bombings, assassinations, roadside shooting, car hijacking, kidnapping and bomb explosions to wage war against what it considers as enemy targets. Boko Haram has also wreaked havoc on public institutions, civilians, police forces and government property. The Amnesty International reported that Boko Haram fighters have bombed and killed several civilians, burnt villages and abducted

and assaulted teachers and students during their attacks. According to the Global Terrorism Index 2015 report, Nigeria experienced the most significant increase in terrorist deaths ever recorded by any country, from 1,595 in 2013 to 6,118 in 2014. These statistics made Boko Haram, the deadliest terrorist group in the world that year. It is noteworthy that Boko Haram attacks have shifted remarkably from attacks on security forces to attacks on civilians. (Azama 2015)

Boko Haram attacks have destabilized economic activities, derailed economic development, and caused the worst kind of humanitarian crisis in the Northeast ever, with millions of people displaced from their homes, jobs and communities. For example, Borno State, which was worst affected by Boko Haram attacks, has 1.3 million people, especially women and children, displaced and in need of humanitarian aid. Terrorism affects a larger spectrum of society than the immediate victims. In the aftermath of Boko Haram attacks, fear and anxiety have heightened not only among the target population but the broader population of people beyond the immediate impact area of Boko Haram. These attacks have drawn large public sentiments and media headlines from around the globe. For example, Boko Haram's kidnapping of schoolgirls from Chibok in 2014 caused international outrage and affected public opinion. Similar outrage surrounded their most recent abduction of schoolgirls from Dapchi in 2018 and so many unrecorded schoolgirls and boys that has been abducted. (Othman 2015)

The root Causes of Boko Haram

Studies have examined the root causes of Boko Haram terrorism group and their objectives. Identified root causes can be classified as follows: economic, social, religious, ethnic and political. We now examine these studies briefly.

lack of economic opportunities

the lack of economic opportunities has been found as a root cause of terrorism. A study by Gassebner and Luechinger found a negative relationship between lack of economic opportunities and terrorism. The study further shows that countries that restrict economic freedom are susceptible to more terrorist attacks than countries that promote economic freedom. For example, Mohammad argued, the deterioration of socio-economic conditions in the Middle Eastern societies has contributed in many ways to the eruption of terrorism. In his study that examines the relationship between poverty, minority economic discrimination and domestic terrorism, Piazza revealed that countries that subject minority groups to economic discrimination are more likely to experience domestic terrorism than countries where minority groups

not affected by economic discrimination. Lai also found evidence to show that states with greater economic disparities between groups are susceptible to higher terrorist attacks. (Anneli & Martin 2017)

Low income and economic inequality are found to be possible causes of terrorism. Pinar Derin-Gure found evidence that the greater the income inequality there is in a country, the greater the incidence of domestic terrorist attacks. Krieger and Meierrieks sampled 114 countries between 1985 and 2012 and found that income inequality is correlated with terrorism. In addition, Enders et al. found a robust nonlinear income-terrorism relationship, which suggests that terrorist attacks are more concentrated in middle-income countries. But, other empirical studies have found no support to suggest that the income distribution of a country is related to terrorism. (Othman 2015)

In northern Nigeria, there is the common perception that violent extremism is entrenched in the socioeconomic problems of the country. For example, Ayegba argued that poverty and unemployment are the driving forces behind the insurgency in Nigeria. Further in the study, Ayegba claimed that the high rate of youth unemployment has resulted in poverty and insecurity in the country. David et al. argued, “socioeconomic indices such as poverty, unemployment, inequality, economic underdevelopment, low education, inter alia, underlie the emergence and persistence of Boko Haram terrorism.” These assertions suggest that the pervasive poverty and unemployment in northern Nigeria create the condition for especially young people to be manipulated and recruited by Boko Haram. Although, some studies have found no link between poverty and terrorism, however, the vicious cycle of poverty and unemployment make it easy for people to become prey for Boko Haram recruitment. A study by Botha and Abdile confirmed that, due to adverse economic conditions and unemployment in Somalia, some people viewed al-Shabaab as a potential employer. A recent public opinion study on Boko Haram by Botha et al. revealed that some of the respondents interviewed perceive that people are motivated to join Boko Haram because “they are unemployed and see Boko Haram as a job. (Ayegba2015)

Religious and Ethnic Causes of Terrorism/Boko Haram

Religious and ethnic tensions are found to cause terrorism. Historically, Nigeria has experienced intermittent ethno-religious clashes. Although, it is hard to claim that the emergence Boko Haram is related to religious or ethnic conflict, some studies have found a positive relationship between religious and ethnic tensions and terrorism. This implies that societies experiencing religious tension can become a breeding ground for terrorists to operate. (Azama 2015)

It is common belief that religious tension and religious fundamentalism cause terrorism. There is empirical evidence to support this argument. With respect to Boko Haram, religion plays a vital role in their discourse. The group holds extreme religious ideology, which they use as the basis to commit their heinous crimes. Akinola argued that the rise of Boko Haram is embedded in Islamic fundamentalism, which they use to justify their actions. For example, the group aims to promote Sharia law and create an Islamic state in Northern Nigeria. As a result, it has waged war on any group or western idea, which they believe is against Islam. This has created the notion that terrorism is linked to religion fundamentalism. In the study, why do people join Boko Haram? Onuoha found that, “ignorance of religious teaching is the leading factor influencing the adoption of extreme religious views, especially among youth” in all the northern states surveyed. (Azama 2015)

In addition, Sharia law, practiced in northern Nigeria, can be traced back to the late eighteenth century, when Sheikh Usman Dan Fodio, an Islamic scholar, and his followers mostly from the Hausa-Fulani tribe became passionate supporters of strict Islamic compliance across the region. From 1804-1808, Sheikh Usman Dan Fodio and his followers led a successful holy war (jihad) against Muslim rulers of the Hausa’s Dynasty because of their failure to adhere to strict Islamic practices. In 1809, Sheikh Usman Dan Fodio established an Islamic Caliphate in Sokoto district, from where most the northern regions of Nigeria were governed throughout most of the nineteenth century. They built on this in the years in Maiduguri, providing guidance and instructions in accordance with the Salafist teachings of the Qur’an. Yusuf’s teachings and recordings expanded into neighbouring states, including Kano, Yobe, Bauchi, Niger, Adamawa, and Gombe of the northeast Nigeria. The complex was later relocated to Yusuf’s hometown of Kanama Yobe state where the group eventually transformed to a fundamentalist revolutionary movement. (Othman 2015)

Strategical and Political Causes of Terrorism

Lack of political rights and incompetent government Grievances in regards to the insufficient political participation and governmental failures seem to dominate Boko Haram discourse, together with its anti-Western rhetoric. Boko Haram criticizes high levels of corruption and “Western orientation” officials causing the economic crisis in Nigeria on a long-term-basis. The first clashes occurred during Yusuf’s leadership, when he attacked local Muslim community- ulema- as a reaction to their close relationship with governor Sheriff known for his predatory and corrupt governmental policies (Mohammed 2014).

Such claims are supported by international NGOs such as Transparency International, which ranks Nigeria as 136th out of 168 in corruption measurement tools and confirms that over 90% of population thinks that the governmental security forces are corrupted, while 45% assumes the same about the military. All is accompanied by the proofs of highly ranked officials embezzling funds appointed to the regional development (Transparency International 2014).

Boko Haram generally refers to current power-holders as yan boko- modern elites which were educated and trained in secular way, and which are therefore responsible for ills of Nigerian government and unjust due to their relations with West. The roots of violence and mistrust in government can be also found back in 2009 in the violent clash between police and Boko Haram members in an argument over newly introduced Bike Helmet Law, which Boko Haram disobeyed during funeral procession of some of their members and in following dispute 17 of them were killed by the police forces. The same situation happened with extrajudicial killing of Yusuf in 2009, which both lead to the radicalization of the group, their growing insurgency and critique of Nigerian government and its incompetence. The relative deprivation theory in this case can be understood as the feeling of not enough religious rights and the voice in political matters, as well as disproportional discrimination in usually common situations such as mentioned Bike Helmet Law incident, which was seen by majority of Boko Haram members as unequally targeting their group and through anger and frustration increasing their radicalization. (Lenka 2016)

Similarly, with respect to the political root causes of terrorism, several studies have indicated that the lack of civil liberties, corruption, weak political institutions, political instability, weak government, high level of repression, civil wars can foment the incidence of terrorism. In addition, a study by Piazza shows that societies with large complex multiparty systems are more prone to terrorist incidence than those with few homogeneous systems. Also, democratic countries, which are assumed to be in a better position to stop terrorist attacks, are more prone to terrorist attacks than autocratic countries. Krieger and Meierrieks argued that democratic countries are prone to terrorist attacks due to the promotion of democratic ideals like respect for civil liberties and free press, which open doors for terrorists to operate and also hinder counter-terrorism measures. (Adesoji & Abdullahi 2016)

On domestic terrorism in Northeast Nigeria, some studies blamed the emergence of Boko Haram on the country's elite politics. Botha et al. argued that "Boko Haram is a political construct, sponsored by politicians." According to Mbah et al., Boko Haram emerged from the struggle among northern and southern political elites to gain control of state political power, especially after the death of President

Yar'Adua. The re-election of Jonathan Goodluck in 2011 then led to the use of Boko Haram as an instrument of destruction by northern political elites. However, these claims cannot fully explain the emergence of Boko Haram, since other political and social phenomenon could contribute to the rise of the group. For instance, some scholars have argued that emergence of the group could be linked to bad governance, corruption and economic deprivation in Nigeria, which has fostered the rise radical extremist groups. (Andrew 2015)

Objectives of Terrorists groups

In general, the literature suggests that terrorists operate with particular goals in mind. Studies have shown that terrorist organizations may have political, religious, social and economic objectives, which inspired their operations. The objectives of a terrorist organization influence its choice of targets and modes of attacks. Like other terrorist organizations such as the Islamic State which has a core goal of establishing a caliphate in the Middle East, Boko Haram has the objective of removing all western and un-Islamic influences and establishing a society built on Islamic law in northern Nigeria. With this goal in mind, Boko Haram insurgents use violence as the acceptable means to bring about the change they want. The objectives of terrorist organizations may play an important role in how they recruit and radicalize people. (Azama 2015)

The Socio-Economic Implications of Boko Haram Insurgency in the Northeast of Nigeria

Aside the human cost in the Boko Haram insurgency, the atrocities of the sect have socio-economic implications, especially in the northeast where Boko Haram has dominance. The economic, social and psychological costs of the insurgency cannot be quantified. Commercial activities in the northeast have been reduced because of the unprecedented attacks by the sect. Banks, markets and shops do not open regularly due to the fear of the coordinated attacks from Boko Haram. According to Okereocha (2012) human capital and investors drain is hampering economic development in the northeast this is due to the attacks on banks, markets, parks and government departments. The attacks on these commercial areas have led to the migration of people to other parts of the country. (Oarhe. 2013) posits that: "The Maiduguri Monday Market said to be the biggest market in the city is reported to have been seriously affected as hundreds of shop owners, especially Southerners are said to have closed their businesses and left the troubled city. About half of the 10,000 shops and stalls in the market were said to have been abandoned by traders who have fled the city".

Aside the migration of people who have business in the northeast to other parts of Nigeria, foreign nationals of Chad, Cameroun and Niger are being repatriated to their home countries for what the government of Nigeria said they constitute the members of Boko Haram. Evidence has shown that not all the repatriated nationals of the above countries are members of Boko Haram. Definitely, those who have business in cities like Maiduguri, Damaturu and Yola will form part of those that are sent homes which will actually affect the economic activities in these cities. BDN (2012), asserts that under this situation, the economy of the northeast will seriously be affected if foreign citizens who contribute large quota to the development of the northeast vis a vis their economic activities are sent back to their countries of origin. The never-ending attacks by Boko Haram in Borno, Yobe and Adamawa states have a severe impact on the economic lives of people living in these areas. A case in point is that the working duration of most commercial banks in the affected areas hit by Boko Haram bombings has been reduced from eight hours to three hours (Mohammed, 2012). “In Maiduguri, Borno state, where the sect originated, the frequent bombings and clashes between Boko Haram and the security agents have weighed down seriously on the commercial and businesses activities in the city as many businesses have reportedly crumbled while many people have fled the state” (Oarhe. 2013)

Prominent Nigerians who have bemoaned the economic impact of Boko Haram insurgency in northeast Nigeria including the President Goodluck Jonathan and Northern Governors Forum According to Obaremi (2014) “Economic affairs in the north is already depleting due to a massive departure of people and financial institutions from the northern region. But if the government delays in the implementing comprehensive plans to tackle insecurity from its roots, then not only will the northern region be economic desolation, the country as a whole risk losing billions of dollars in foreign direct investment” The business activities of telecom operators have not been left out from the attacks of Boko Haram. For instance, some telecom masts belong to some major mobile telephone operators were destroyed by Boko Haram and the banning of telephone services by the military affected the income generation of some of the mobile phone operators. (Awojobi2014)

Just as the economic implications of Boko Haram atrocities cannot be quantified, the social costs are enormous. The church, school, market, clinic and mosque are potential targets of Boko Haram. For example, in April 2014, a federal government girls’ college was attacked which subsequently led to the abduction of over 250 female students. Attacks on these social places have prevented people from going to these places. Some students have stopped going to school, others have been transferred to the southern

part of the country to continue their education. Christians are afraid to go and worship in the church on Sundays due to the fear of being attacked by the sect. Same for the Muslim faithful's who abandon their worshipping centres because of Boko Haram attacks. The markets have become deserted. The National Youth Service Corps (NYSC) that was created by the government after the end of Nigerian civil war to foster unity among Nigeria is under threat due to Boko Haram attacks. The NYSC directorate posted 4171 corps members to Adamawa state, 1041 of the corps members have to abandon their national duty due to the precarious security situation. Some parents from the south of the country have protested vehemently against the posting of their children to the northeast. Aside the socioeconomic implications, the human cost is more worrisome, more than 10.000 have been killed, a lot of people have been maimed and women have been kidnapped and raped These have left the family of the dead, the injured, the raped and the kidnapped in agony. In a nutshell, most of the family members of Boko Haram victims are going through a traumatized period. Many have left their homes and over 650 thousand Nigerians have been displaced according to the United Nations High Commissioner for Refugees (UNHCR). (Onuoha 2014).

Boko Haram as National Security Challenge

Amid the growing concern about the large displacement of people from Boko Haram attacks the federal and state governments of Nigeria, as well as international humanitarian agencies, have mounted major humanitarian strategies. The Nigerian government also responded to Boko Haram's threat by using military force, especially in Borno, Yobe and Adamawa States where Boko Haram attacks were strongest. For example, in 2015/2016, the deployment of the military troops led to the recapturing of the control of Maiduguri from Boko Haram. Boko Haram found refuge in the Sambisa forest. More recently, Boko Haram continues to launch attacks in several parts of the Northeast. (West African leaders 2015)

The effectiveness of the Nigerian government, and its military and security agencies in fighting Boko Haram has come under criticism from both local and International agencies. A report by Transparency International indicated that the Nigerian armies are unable to defeat Boko Haram due to corruption in the Defense Sector and the inadequate supply of equipment and materials to confront Boko Haram. Further, in the report, it was recounted that Nigerian soldiers sometimes fled from Boko Haram attacks due to the shortage of ammunition and fuel, which were withheld by corrupt senior officers. Amnesty International also accused the Nigeria military of committing war crimes against humanity, due to the mass arrest, interrogation and detentions of suspected members and supporters of Boko Haram, specifically detainees with no connection to Boko Haram who are subjected to torture, starvation, malnutrition and this

resulting in thousands of deaths at army run detention facilities. The Nigerian government has typically denied these allegations. A study such as this one that is focused on public perception is helpful in understanding whether or not the public is closer to foreign critics or to domestic government officials. (Amnesty International. June, 2015)

Furthermore, it has been noted that there are bad relations between the American military specialists who are assisting the Nigerian military, as the American specialists have chosen to work with security officials from Chad, Cameroon and Niger. This makes it difficult for Americans to provide adequate intelligence to Nigerian authorities in fear of compromising their sources. It is troubling that relations between the two militaries have degenerated to this point as the assistance of the international community and development partners is critical in diffusing the radical activities of Boko Haram. This flawed relationship has also been cited as the reason for the US's decision to block the sale of American-made Cobra attack helicopters to Nigeria by Israel in the summer of 2013. Clearly, this has hampered the government's efforts in fighting the insurgents. Finally, the Nigerian government spends some US\$6 billion of its annual budget on security within an economy of approximately half a trillion dollars. Also, the military is made up of 90 000 active duties, and 25 000 reserve components, for a country of 180 million people. This is woefully inadequate in light of the complex security threats and challenges facing the country. It has been argued that the budget deficits are as a result of chronic corruption on the part of Nigerian commanders. This inadequate budgetary allocation to the security sector at a time of challenging and sophisticated security threats has led many experts to accuse the Nigerian government of lacking the goodwill to tackle this menace. These events broaden the implications for the fight against a complicated insurgency system such as that of Boko Haram and also deter other international partners who might wish to join the fight against Boko Haram. (Addaney 2016)

Recommendations

As far as the above stated study of causes and challenges to the Nigerian economics and security, the following may be part of the way out to the problems:

1. The Nigerian government needs to initiate policy that will generate employment for the army of unemployed youths in the country, because most of the crisis, insurgency and insecurity related issues use to be raised by youth as the future leaders and also solid future of the Nation they need be considered first.

2. Boko Haram has sponsors, the government should go after those financing the operations of the sect, where ever they are and also they need to be put in book and penalise accordingly, since no body is above the law, and it can also serve as deterrent to who so ever feels like joining hands with them.
3. The Nigerian government should open a dialogue channel in order to know what are the grievances of the sect. though it has been started but it need to be expanded and to be tactically organized in a very good manner.
4. Reports from the battlefield indicate that security personnel are not being provided with modern fighting equipment. The government should endeavour to supply the army with sophisticated and modern military equipment which can be faced with the current challenges accordingly.
5. The problem of Boko Haram shall be therefore thought about in the sense of mix of factors and incidents, some of which can be addressed or altered, but others remain highly challenging for final resolution, Nigerian government need to make special provision for all the necessary issues related to financial matters.

Conclusion

It can be said that the activities of Boko Haram constitute a serious threat to the development of Nigeria. Aside the socioeconomic implications, the human cost is of great concern to everybody in Nigeria. Thousands of people have been displaced due to the persisted attacks from the dreaded Islamic sect called Boko Haram. It is time to put an end to terrorism in Nigeria and every Nigerian should have the freedom to live in any part of the country without the fear of being attacked by anybody.

While Boko Haram began as and maintains elements of a basic Islamist movement, it has evolved into a hardened and sophisticated terror network. The challenge facing Nigeria and its partners is to break up the group and eliminate its operatives, while at the same time reducing its broad public sympathy among northern Nigerian Muslims. However, the professional competence of the Nigerian security forces remains a complex obstacle which requires multiple simultaneous efforts to enhance their capabilities

Finally, this study was based on qualitative research on the causes of Boko Haram insurgency on the economic and national security situations in the northeast of Nigeria. A quantitative research is needed for further study to investigate the effect of Boko Haram activities on the economy of Nigeria as a whole.

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Drawer Fort: A Heart in the middle of Cholistan

Ar. Muhammad Qamar

Ar. Muhammad Shaheer

Students B.Arch Department Of Architecture And Planning, UMT

Ar. Ayesha Mehmood Malik

ayesha.malik@umt.edu.pk

**Assistant Professor, Department of Architecture and planning, SAP, University of Management and Technology, Lahore.*

ABSTRACT

Once Drawer fort was included in the most important strategic locations within the desert of **Cholistan**. Its traditional fort was center stage amid the Rajput and **Daudputras** competition during eighteenth century. Drawer fort is located at 28°46'04" N and 71°20'02" E. Many names have been assigned to this settlement like **Derajat, Dilawar, 2, Derarawal and Derawet**; different folklore are associated with the origin of these names. Now days, most popular rendition among these names is Drawer. **This paper will focus on the history and present condition of Drawer fort, to protect the built heritage and conserve the local traditional and cultural values of fort for future generations.**

Keywords: Cholistan, Derajat, Dilawar, Derarawal, Derawet

INTRODUCTION:

Drawer Fort is a large square fortress in Yazman. Drawer Fort could be a massive sq. defense in Yazman. Approximately a hundred thirty metric linear unit south of the town of Bahawalpur, the forty bastions of Drawer area unit visible for several miles within the Cholistan Desert.

The walls have a perimeter of 1500 meters and stand up to thirty meters high. Drawer fort was first built in the 9th century AD by Rai Jajja Bhatti, a Hindu ruler of the Bhatti clan, as a tribute to Rawal Deoraj Bhatti, the king of Jaisalmer and Bahawalpur.


In the eighteenth century, the fort was confiscate by Muslim Nawabs of Bahawalpur from the Shahotra tribe. It was later rebuilt in 1732 by Abbasi rulers Nawab Sadeq Muhammad, but in 1747 the fort slipped from their hands owing to Bahawal Khan's preoccupations at Shikarpur. Nawab Mubarak Khan took the defensive structure back in 1804. 1,000 year-old catapult shells were found within the rubbish close to a decaying enclose the fort. This historically significant fort presents an enormous and impressive structure in the heart of the Cholistan desert, however it's apace deteriorating and in want of immediate preventative measures for preservation



PERIOD OF CONSTRUCTION:

In the 18th century, Rai Jajja Bhati, a Hindu Rajput from Jaisalmir, was the first to build a fort on the site. However, the Nawab of Bahawalpur, Sadeq Mohammad Khan I, captured the fort in 1733 and had it rebuilt to how it looks today. The fort was taken away from the Nawab in 1747 but in 1804, Nawab Mubarak Khan reclaimed the fort. No such repairs after it was rebuilt in 1733. It was used as Royal Palace and underground cages were used for prisoners.

World heritage site:

NAME	IMAGES	REGION	CATEGOR Y	YEAR SUBMITTE D	DESCRIPTION	RE F
DERAWER FORT		PUNJAB PAKISTAN	Cultural; iii, v	2016	Drawer fort was built in the 9th century by Rai Jajja Bhatti, a Rajput ruler of Bhatti clan	[31]

Drawer during 18th Century:

Almost every Afghan or Irani intruder of eighteenth century attacked Drawer Fort. In

1739 Nadir Shah of Iran (r. 1736-1747), sent his commander Tamasp Shah to plunder Drawer. In this attack, 17 of Nawabs joined Tamasp. This allied force moved towards Drawer, Shahamet says about this event:

This force besieged the Drawer fort but they failed to capture it then they use a tactic. Ex-servant of Dadputras named Moosa, who had now shacked hands with Noor Muhammad secretly, was sent to Drawer fort. Moosa pretended to be a messenger sent by Sadiq Khan, who was in Afghanistan in the Darbar of Nadir Shah. Moosa gave a fake message to Governor Mohammad Maroof the then incharge Drawer, who out of fear of incurring Nadir Shahs displeasure let the allied force enter in the Drawer fort to avoid further inconvenience. Moosa also took the oath of his loyalty with dadputras. The governor along with some of his chief officers appeared in the camps of foes and they were surprised on their immediate arrest and imprisonment but it was too late. Now force of Dadputras was left behind without commanders so they could not resist therefore they ran away to the woods to join their tribe men. The force of Multan occupied vacant fort. (Ali, 1848, 28-9)

The Tamasp chased the fugitive Dadputras in person with his force. Dadputras first put their women to death than drew their swords. Great slaughter took place and royal army totally routed. A number of soldiers of royal force had fallen victim to the deadly desert heat, were wounded and fatigued but Tamasp managed to reach Sindh with his remaining few men. On the other side, Sadiq Khan-I was successful to win the trust of Nadir Shah. Resultantly, Sadiq Khan- I was sent to Tamasp along with a messenger of

Shah, Mirza Askar Ali. Tamasp welcomed them on arrival in Shikarpur, and Sadiq's territories were returned to him. Nadir Shah not only returned this fort to Nawab moreover awarded him the hereditary title of 'Nawab'. (Ali, 1848, 28-30) Then in 1785 C. E. Timur Shah (r.1747-1793) the Shah of Afghanistan, sent Sirdar Maded-Khan Durrani to invade Sindh. On hearing about the impending Afghan forces Nawab hastened to strengthen and garrison his fortresses, especially

Drawer. 18 The Governor of Multan Muzaffar Khan joined Maded and this force assaulted Drawer fort twice. In first attempt they failed succumbing to the heat and scarcity of water. In the second attempt, Maded Khan succeeded but after receiving 60,000-rupee nazrana he stepped back from Nawab of Bahawalpur. (Ali, 1848, 77-80, 190-1) The nazrana being a gesture of allegiance and subservience was enough to placate Timur Shah temporarily.

Soon in 1788, Timur Shah again moved his armies for second attack on Sindh. On his way he attacked Drawer with besieging machines which rendering the Dadputra forces totally helpless to defend the fort. After this victory, Timur Shah went back to his kingdom and he left Drawer fort under the custody of Afghan garrison under the command of Shah Mohammed Khan, a Afghan of Badzai tribe and resident of Multan. (Ali, 1848, 77,79) After departure of Timur Shah Nawab, went straight for the Achilles heel and conquered the Sitpur fort in which all women of Afghan garrison were staying. Nawab brought them to the Drawer fort. In this way Nawab tactfully bargained Afghan families in return of Drawer fort. (The Punjab Government, 1908, 58) About this incident, Tod says: About thirty years ago an army from Kandahar invaded Dadputra, invested and took Drawer, and compelled Bahawal Khan to seek protection with the Bhattis at Bikampur. A negotiation for its restoration took place, and he once more pledged his submission to the Abdali king, and having sent his son Mubarik Khan as a hostage and

guarantee for the liquidation of the imposition, the army withdrew, Mubarak had to face exile in Kabul for three years,

was at length restored to liberty and made Khan of Bahawalpur, on attempting which

he was imprisoned by his father, and confined in the fortress of Khangarh where

he remained nearly until Bahawal Khan's death. (Tod, 1920, 1302-3)

In 1799, Nawab Bahawal II dispatched a well prepared force from Drawer fort, under the command of Prince Sadiq Khan against rebellious Prince Mubarak Khan. Sadiq trapped Mubarak Khan and eventually imprisoned him in fort Derawar.¹⁹ Later on, to affect his escape, Khuda Bakhsh, an enemy of Nawab, his personal servant named Dilawar with sent his fifty armymen, who secretly released Mubarak Khan from Drawer. (Ali, 1848, 103-4) After some time Mubarak was again captured and imprisoned in Drawer fort.

Drawer during Nineteenth Century:

For centuries and centuries this fort stood in stoic manner; silently watching the bloodbath or bloodshed; unabated conspiracies; ruthless wars of succession; and grim killing triggered by vaulting ambitions. In similar manners, in February 1800, Mukhdum of Uchch sent two men Jewan and Gul Bag in the disguise of baggers, to kill Bahawal Khan II. Gul mixed up with the horsemen of Nawab and the other joined falconers. From these two Jewan somehow reached the palanquin of the Nawab but he was caught red handed and killed. (Ali, 1848, 103-4) But in 1809, Bahawal Khan II²⁰ died in this fort and was buried in royal graveyard near it. On 13th August 1809, Sadiq Khan II (r. 1809-1826) sat on the throne but he was not feeling safe since the rightful heir of throne Prince Mubarak was still alive, to nip the evil in the bud, Sadiq engaged the services of his Prime Minister Naseer Khan. Naseer engaged Usama to kill the Prince Mubarak. According to orders after taking out Mubarak Khan from Drawer, Usama killed and buried him in the sands of Cholistan. (Ali, 1848, 148-152) It was not end, during Sadiq Khan Era, Drawer fort became the hub of activities of Nawab Sadiq Khan. After holding an official *darbar* to announce his ruler-ship Nawab Sadiq Khan-II returned to Drawer, in the same year Shah Shuja came into power in Khorasan, so to display Khan's loyalty to Shah Shuja a royal salute was fired and town and fort of Drawer was light up at night. In same year, Sadiq Khan-II celebrated Eid at Drawer. (Ali, 1848, 150-5). However, this tranquillity was troubled when an assassin Sunji Khan attacked Nawab. He was hired for this task by two conspirators Fattah Mohammed Ghori and Ahmad Khan who were actually army officers of Nawab. However, Nawab escaped and arrived at Ahmadpur East

safely. Nevertheless, to avoid further inconvenience, Nawab moved back to Drawer on same night along with his malcontent troops.

When conspirators failed in their plans then both of these commanders decided that along with their friend Dhuman Sing left Drawer unnoticeably with their under command armies. Each of these three army officers had under their command 500 equestrians and infantryman. (Ali, 1848, 163) Making us draw the conclusion that in total 1500 horses and foot were stationed there. Eventually, Nawab's army fought courageously and against these rebels and imprisoned Ahmed Khan with his 50 followers. He was decapitated and his head was

sent to Nawab staying in Drawer for his satisfaction. (Ali, 1848, 177) Drawer continued to witness more and more conspiracies. Sadiq Khan, too fell a victim to such plot, when his brothers revolted to depose him. Actually, these brothers were imprisoned in this Fort but men of influence in the tribe set them free.

Then these brother murdered their guards, and eventually declared Ahmad Bakhsh Khan a new Nawab in Drawer fort. Nevertheless, the Khan came back on time and suppressed the rebellion by killing his three brothers and two nephews involved in this conspiracy, all 21 were killed on 22nd March 1811. (Ali, 1848, 166-7) But this incident left unusual effect on Sadiq Khan, as due to this frightful event he stayed in his harem at Drawer for a month. He was afraid to allow anyone to approach him without interrogation. Therefore, he received all news and passed order on different issues through his herms. After reign of sixteen years, Sadiq Khan II expired at Drawer on 7th April, 1826 and he was buried in Drawer necropolis. On the same day, his elder son, Rahimyar Yar Khan ascended the throne at Drawer and assumed the title of Bahawal Khan III. (Ali, 1848, 178, 201-2). From 1826 to 1852 Bahawal Khan ruled the State he was the Nawab who established his palaces at Dera Nawab near Ahmadpur East.

Bahawal Khan III mostly resided at Dera Nawab, from here the decline of Drawer was started. Nawab Sadiq Khan-III (r. 1852-1853) ascended the throne at Drawer and imprisoned his brother Fateh Khan, but very next year Nawab Fateh Khan (1853- 1858) became the defacto ruler of the State and Sadiq Khan III ran away to Lahore where he got shelter under British umbrella. After Fateh Khan, Nawab Bahawal Khan-IV (1858-1866) became ruler of State at Drawer. Most of the time of this Nawab was spent in suppressing internal revolts. In 1866, Bahawal Khan IV was poisoned so after

him his four year old son, Sadiq Khan IV, titled as Nawab under the protection of first British Agency (1866-1879). (The Punjab Government, 1908, 67-85) All of these Nawabs ascended

throne and died at Drawer fort.

period	User group	Building condition	Any changes made to the structure	Comments/ ref pictures
18 th century	Prince Sadiq Khan	Very Good	None	/
19 th century	Nawab Sadiq Khan-II	Quite Good	got damaged by attack	/
British	British Umbrella	Very Good	Restored damages	/

British interference:

The British, fully cognizant of Bahawalpur's economic and strategic value, signed treaties with

Its rulers on their own terms and conditions, it had become a coveted prize for the British not only the Marwar desert for Afghan expedition the help

Of Bahawalpur State was essential. Resultantly, they sent their agent to Bahawalpur chief. The Governor General of India ordered Mr. Seton, the Resident at Delhi to send a ambassador to Nawab of Bahawalpur to initiate friendly terms with him. Consequently, Mir Izzatullah Khan, dignitary of Delhi, was sent to Bahawalpur court with a letter from British Government. The meeting of Mir and Nawab held at Drawer fort. Bahawal Khan- II assured the British of his full co-operation. (The Punjab Government, 1908, 142) Thus, this agreement opened the way for a century of servitude and colonial exploitation of the land and its resources. Bahawalpur soon acquired the status of a front-line state for British the missions and campaigns to Afghanistan, Punjab and Sindh. The records of British travelers have a unique significance to reconstruct the history of Drawer fort as these travelers are giving eyewitness accounts of Drawer in different period. Most of the traveler visited this State during first half of the Nineteenth Century. The first half of Nineteenth Century was a time when State was not regularly keeping records of a variety of things. Therefore, to complete the history of a fort in far-flung desert travelers accounts are one of the main primary sources. In 1808, a mission to Kabul reached Bahawalpur under the command of Mr. Elphinstone. (Elphinstone, 1839, 9-27) In 1826, Charles Masson travelled through Bahawalpur State, during this journey he recorded about Drawer fort as: Durawal, a fortress, eighteen *cosses* distant in the desert, where, it is understood, he [Nawab] keeps his treasures, as in a safe place, and where he frequently account of the experiences of an explorer and

Orientalists over a period of thirteen years from 1828 to 1841. Included are not only details of the

Scenery and routes but maps and sketches.

Sr no.	Building part/ section	original	modified	Year of modification	Picture for reference if any
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1	All damages to the building.	Preserved Drawer Fort in real shape.	Boundary wall of the fort, its towers, rooms, mosque and the road leading to the fort repaired and renovated.	1954	
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Drawer at the Crisscross of Transit Trade:

Caravan trade routes were also crisscrossed Drawer fort. These routes connected India with Central Asia, Egypt, Persia and Arabia. The geostrategic position of this fort made it perfect to Stage a check-post to impose taxes and customs duties. Moreover, Bahawalpur State was exporting different kind of cloths, indigo, cotton threads, *mung*, ghee, wheat, rice, red tobacco to Kabul, Delhi, Shikarpur & Khairpur, Khorasan, Hyderabad & Allaiyar, Marwar. Khorasan and Sindh was the biggest purchaser of Bahawalpur cloth whereas most of the English cloth, coming to Bahawalpur markets was from Bombay. Bahawalpur was also importing *nawabi* silk, Black-pepper, English cloth, copper, pewter, lead, needles, woolen cloth, *haldee*, iron, brocade, Sugar, metals, cloths, cotton, *madarpat*, brass utensils, velvet, silk, ginger, *hareer*, rock-salt, *Kandhari-takas*, *lokars* etc.

Decrease in the significance of Drawer Fort:

After decline of Mughals, when British appeared as only political power capable of controlling India, they signed various treaties with all Rajputana states, which compelled them to finish Their inter-States mutual rivalries. Wars and rivalries were a huge offset to their trade and Commerce activity. In 1818, Jaisalmeer State became British Protectorate State after signing a Treaty of friendship with British. This treaty protected Jaisalmeer from intrusions and Supported royal family in matters of successions. In return, Jaisalmeer had to provide the services of the British in 1829 to ward-off a war with Bikaner. Bahawalpur got protection under British umbrella in 1833, when State signed a treaty with Paramount power. This treat ensured defense against attack from western side, either by Sikhs. right bank of Suttlej River, Nawabs took refuge in the Desert and Drawer fort. Forts of Rajhistan or Cholistan served as haven for defender rulers; therefore, extraordinary attention paid to fortify these fortresses. Additionally, its geo-strategic, isolated and safe location of these forts made them perfect for Royal courts,

Harems and treasures. Nevertheless, the signing of peace treaties after 1833, rendered these services useless, security and defense was no longer required so Drawer too lost its importance as the Safe House. That's how a gradual decline of its fortunes began. It thrived on conflict and Wars of successions, with the coming of one colonial master and the increased dependency on safe and secure trade routes, Drawer lost its one eminent position. Finally, in March 1845, British demarcated the borders of Bikaner, Rajputana and Bahawalpur that ended the wars for more land among these states. (Shahab, 1977, 26) Now even Bahawalpur State was safe from attacks of eastern state Bikaner and southern State Jaisalmeer. With these steps, the man-to-man warfare on boundary disputes and threats of invasions were ended. Of course, this situation affected the importance of fortresses in desert. Consequently, the race of capturing, building and strengthening the defensive fortifications of Rajhistan was ended, and Drawer was also one of those forts. The tax collecting activities were affected by the intervention of British because after 1833 signing a treaty with Bahawalpur State British started trade through Sutlej.

Mackeson recorded the opening of these rivers for British in early 1833 four boats laden with 2700 maunds of merchandize, this number of boats increased yearly unusually that in 1843, after ten year it was almost 280 % increase in number of boats with total 1125 boats cross Sutlej to Mithankot laden with 2, 44, 416 maund. (Mackeson, 1844, 313). This extraordinary volume of trade decreased the value of land trade routes especially the routes which were crossing desert, because travelling in desert was cumbersome. Decrease in trade meant less caravans and less taxes and this phenomena diminished the importance of caravanserais and Drawer being the biggest desert caravanserais of Bahawalpur State which also became the victim. Moreover, under British, renovation of old roads

and construction of new roads and canals opened new trade routes with better facilities. But more than any other factor, it was the coming of railways which drastically changed the trade

patterns and routes.

As Empress Bridge (Railway Bridge) on Sutlej was opened in 1878 and Lahore-Karachi Railway line built in 1880, moreover in 1898 Southern Punjab Railway line crossed from Bahawalpur State. In a nut shell, from 1833 to the turn of the Nineteenth Century Drawer fort gradually lost its worth, both politically and financially, as is evident from the

fact that in 1833 it was producing 31,000 Rs revenue but in 1867 was roughly estimated at 20,000 Rs a year. (Leech, 1839 b, 80) In the changing scenario under British Raj Nawabs also adopted the British living styles. Second half of nineteenth century was marked with slowly and steadily shift of Nawab of Bahawalpur's towards royal palaces in the cities from the forts in deserts. Residences were shifted from medieval forts of the Cholistan desert to newly styled palaces as Nur Mahal was constructed (1872-1875) at a cost of 1.2 million rupees by Sir Sadiq Muhammad Khan VI for his residence. Daulat Khana 1881 was built by Sadiq

Muhammad Khan IV for his residence at a total cost of 0.2 million rupees. From 1882-1895

Sadiqgarh palace was constructed by Sadiq IV for residence at a total cost of 1.135 million (Dar, 2007, 122; The Punjab Government, 1908, 332, 357) so till the end of Nineteenth Century Drawer fort was forgotten. Last nail in the coffin was from its owner Nawab Bahawal Khan V. Actually, Sadiq-IV was blessed with his second son in October 1883, who later emerged as Bahawal Khan-V.

This Prince was born from Nawab's second wife who was a less likened wife. Due to internal-politics and jealousies of harem this queen and her son was confined by Nawab in Drawer fort from 1884 to 1894. This exile left immense effect on Bahawal- V hated this place for his whole life and always tried to avoid the memories of Drawer fort, (Aziz. 1939, 10-3) although in 1905 Bahawal Khan V visited Drawer fort (Tahir, 2010, 212, 247) but he never wanted to visit that place again. This was the time when eventually this fort lost into the dark clouds of ignorance and is still positioned in retreating condition in the hope that someday a Nawab will come and restore it to its prior prestige and glory.

GOVT SET ASIDES RS100M FOR DRAWER FORT RENOVATION:

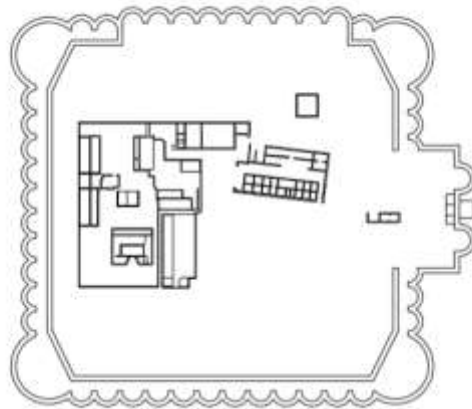
It may be recalled that Abbasi family of former Bahawalpur princely state had taken Drawer Fort into custody in 18th century. But after the merger of Bahawalpur State into Pakistan in 1954, each government neglected the historical fort which was constructed by Rajput ruler Rai Jajja Bhatti in 9th century.

Bahawalpur Commissioner Capt (r) Saqib Zafar took notice of the dilapidated condition of Fort Drawer and started negotiation with notables of the Abbasi family for renovation and repair to the fort.

The Abbasi family gave NOC to the Punjab government at instigation of the commissioner and the government released Rs100 million for the renovation and repair to the fort. As per official sources, the Punjab government had provided Rs6 million last year for repair to the fort but the funds were insufficient.

Now renovation of the fort, started at the instigation of Commissioner Capt (r) Saqib Zafar, would complete within next two years. Official sources said that boundary wall of the fort, its towers, rooms, mosque and the road leading to the fort will be repaired and renovated. The two-year project would help preserve Drawer Fort in real shape, sources claimed

Architectural Drawings:



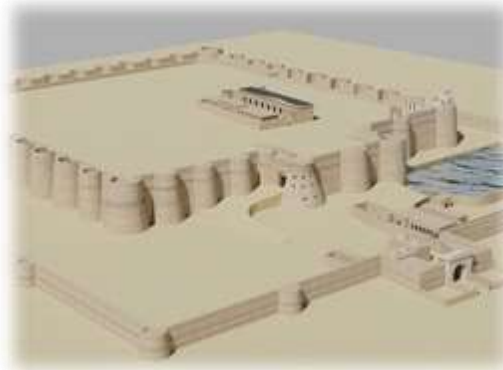
PLAN



EXTERIOR WEST ELEVATION

WEST ELEVATION:

RENDERS:



CONCLUSION

Derawar fort is very impressive from outside as inside and supported by 39 enormous buttresses with four on each corner, nine on three sides including West, South and North and eight on eastern side. The fort has emerged as a good place for picnic, particularly after TDCP chose it to hold country's mega desert car sport event every year.

And the beauty of Drawar fort is destroying day by day because of no maintainance. Such place like derawar fort needs some attension towards its maintainance because it is a visual history as itself.

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Experiences of Exclusion: Racialized and Indigenous Youth Attending Alternative School Placements

Prof. Lorenzo Cherubini
lorenzo.cherubini@brocku.ca
Brock University, Ontario (Canada)

Abstract

Like Indigenous students, racialized youth are linked to disproportionate rates of substance abuse, poverty, violence, and lower levels of academic achievement compared to mainstream students. Alternative education school placements offer racialized youth non-traditional learning environments tailored to their needs and interests. For both racialized and Indigenous youth considered to be “at-risk” of succeeding and coping in mainstream public schools, alternative school placements honour their racial identities and epistemologies by nurturing and incorporating their socio-cultural worldviews into the teaching and learning process. This research project investigates the sense of exclusion experienced by racialized and Indigenous youth attending their respective alternative school placements in Canada both in pre- and post-COVID-19 pandemic realities. Given the school closures mandated by provincial governments across the country, this research examines how the politics of difference are essentially underscored for racialized and Indigenous youth prevented from accessing alternative education programs. It will account for how alternative school placements cater to at-risk learners’ academic needs, as well as a variety of socio-emotional supports in flexible arrangements to meet students’ unique realities; moreover, for how the disruption of these services, in response to preventing the spread of the virus will not only hinder the academic progress of racialized and Indigenous youth but also impede their socio-emotional development. The research will consider the implications for educators to consider the potentially difficult outcomes on racialized and Indigenous youth denied access to the physical, cultural, emotional, and academic spaces that bridged the exclusion they experienced with formal education and mainstream schools.

Racialized youth often experience feelings of marginalization in publicly-funded schools. Like Indigenous students, racialized youth are linked to disproportionate rates of substance abuse, poverty, violence, and lower levels of academic achievement compared to mainstream students (Cherubini, 2014; Keeshin & Campbell, 2011; Kirst et al., 2011). Alternative education school placements offer racialized youth non-traditional learning environments tailored to their needs and interests (Nichols & Doberstein, 2016). Like the alternative education placements offered by Friendship Centres across Ontario (Canada) that include culturally-appropriate programming for Indigenous students, alternative schools for racialized

youth provide more invitational spaces that better represent their social identities (Cohen & Garcia, 2008; Gray, Hope, and Matthews, 2018).

For both racialized and Indigenous youth considered to be “at-risk” of succeeding and coping in mainstream public schools, alternative school placements honour their racial identities and epistemologies (DeCuir-Gunby, 2009) by nurturing and incorporating their socio-cultural worldviews into the teaching and learning process (King & Swartz, 2015). To some extent, these non-traditional school placements may be in response to the dominant and white colonial knowledge paradigms, values, and traditions that have resulted in the racial conditions that exclude Indigenous and racialized youth from mainstream schools (Dillabough & Yoon, 2018).

This research project investigates the sense of exclusion experienced by racialized and Indigenous youth attending their respective alternative school placements in Canada both in pre- and post-COVID-19 pandemic realities. Given the school closures mandated by provincial governments across the country, this research examines how the politics of difference are essentially underscored for racialized and Indigenous youth prevented from accessing alternative education programs and the partner social services (see also, Berg & Sigona, 2013; Berg, Gidley, & Sigona, 2016). It will account for how alternative school placements catered to at-risk learners’ academic needs, as well as a variety of socio-emotional supports in flexible arrangements to meet students’ unique realities (Lehr, Tan, & Ysseldyke, 2009); moreover, for how the disruption of these services, in response to preventing the spread of the virus, will not only hinder the academic progress of racialized and Indigenous youth but also impede their socio-emotional development. The research includes the implications for educators to consider potentially difficult outcomes on racialized and Indigenous youth denied access to the physical, cultural, emotional, and academic spaces that bridged the exclusion they experienced with formal education and mainstream schools.

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A Response to Canada's Truth and Reconciliation Commission Report: Engaging in Purposeful Conversation with Australian Colleagues

Prof. Lorenzo Cherubini
lorenzo.cherubini@brocku.ca
Brock University, Ontario (Canada)
Abstract

The histories of the Indigenous Peoples of Canada and Australia share a rather poignant narrative. For both First Nations, Métis, and Inuit peoples of Turtle Island and the Aboriginal and Torres Strait people of Australia, the values and traditions (not to mention rights and interests) of pre-colonial contact were altered drastically by European expansion. The colonial doctrine of 'terra nullius' rendered Indigenous peoples' rights and land claims as non-existent. Europeans did not consider Indigenous peoples as stewards to the land, and certainly did not perceive any legitimacy to their traditional and holistic educational paradigms. Among the outcomes of colonization was the cultural genocide of Indigenous peoples' linguistic and spiritual worldviews. For some, education is considered an agent of colonization that embeds a history of appropriation in both Canada and Australia. The 2015 Final Report of the Truth and Reconciliation Commission (TRC) addressed the context of residential schools in Canada and accounted for nearly 7,000 heart-rending testimonies and statements from survivors, families, and other community members. It is significant to note that national inquiries have been commissioned in both Canada and Australia to investigate the socio-political implications of the policies of assimilation; namely, the *Royal Commission on Aboriginal Peoples* (1996) and the national inquiry report, *Bringing Them Home* (1997) respectively. This presentation will include a discussion of mainstream educators in publicly funded schools across Ontario and Canada that are taking the lead from Indigenous knowledge-keepers, elders, and community partners to meaningfully engage in the TRC's Calls to Action in order to bridge the gaps in learning paradigms and ideologies between Indigenous and non-Indigenous learners. Although the mandate of the TRC's Calls to Action are far from simple, educators are making a marked attempt to invite school-aged children and youth into reconciliatory practices. These educators are encouraged to engage in conversations with principals and teachers in Australia to discuss and interrogate the respective intended curriculum and the landmark policy documents related to Indigenous education across the provinces, states, and territories of both countries in order to isolate and verbalize not only the specific challenges, but more importantly to share creative and thoughtful possibilities for educators to foster Indigenous and non-Indigenous students' capacity for intercultural understanding and respectful relations. Perhaps only then will all students, as prospective critical citizens, be willing and able to comprehend how the collective traditions, knowledges, and spirit of Indigenous peoples complement their own experiences.

Introduction

The histories of the Indigenous Peoples of Canada and Australia share a rather poignant narrative. For both First Nations, Métis, and Inuit peoples of Turtle Island and the Aboriginal and Torres Strait people of Australia, the values and traditions (not to mention rights and interests) of pre-colonial contact were altered drastically by European expansion. The colonial doctrine of ‘terra nullius’ rendered Indigenous peoples’ rights and land claims as non-existent (Banner, 2005; Buchan, 2007). Europeans did not consider Indigenous peoples as stewards to the land, and certainly did not perceive any legitimacy to their traditional and holistic educational paradigms. Among the outcomes of colonization was the cultural genocide of Indigenous peoples’ linguistic and spiritual worldviews. As early as the 1600s in Canada and the late 1800s in Australia, the establishment of government-funded residential schools were meant to assimilate Indigenous children into Eurocentric ideologies and Christian values by removing children from their families and communities (MacDonald & Hudson, 2012; Miller, 2017). The haunting repercussions of the oppressive living conditions, brutality, and abuse suffered by residential school survivors continue to persist in mainstream policies and practices (Cherubini, 2014; 2018). For some, education is considered an agent of colonization that embeds a history of appropriation in both Canada and Australia. This becomes especially important when one considers that the growth rate of the Indigenous population in both countries is burgeoning.

The 2015 Final Report of the Truth and Reconciliation Commission (TRC) addressed the context of residential schools in Canada and accounted for nearly 7,000 heart-rending testimonies and statements from survivors, families, and other community members. It is significant to note that national inquiries have been commissioned in both Canada and Australia to investigate the socio-political implications of the policies of assimilation; namely, the *Royal Commission on Aboriginal Peoples* (1996) and the national inquiry report, *Bringing Them Home* (1997) respectively. The voices that inform the Report speak to the

interconnected and interdependent emotional, spiritual, linguistic, and physical aspects of Indigenous peoples' identities, and the overall destructive force of European encroachment on Canada. It can be speculated, thus, that there is a resounding echo of these stories across Australia as well given that Aborigines were oppressed by state government policy prior to 1950.

It should be recognized that public education, and more precisely K to 12 educators across Canada, have arrived at particular interpretations of reconciliation several years after the Commission's recommended Calls to Action. Admittedly, it has taken time. Undoubtedly, though, it has been necessary to take the time to process the varied complexities.

By inviting students to examine aspects of Canadian history that traditionally and largely have been ignored, learners are confronted with difficult and sometimes very challenging issues (Cherubini & Cherubini, *in press*). School principals and classroom teachers have had to position (and in some cases, re-situate) themselves in these same complicated learning environments and consider thoughtfully their own understanding of the historical present (Page, 2009). Mainstream educators in publicly funded schools across Ontario and Canada are taking the lead from Indigenous knowledge-keepers, elders, and community partners to meaningfully engage in the TRC's Calls to Action in order to bridge the gaps in learning paradigms and ideologies between Indigenous and non-Indigenous learners. Although the mandate of the TRC's Calls to Action are far from simple, educators are making a marked attempt to invite school-aged children and youth into reconciliatory practices. The principals that experience the most success in implementing the Calls to Action are those that partner with Indigenous education leaders to address the sometimes-provocative questions that have traditionally stifled constructive learning environments in public schools.

This is to recognize that not all principals and teachers are equipped to genuinely incorporate Indigenous knowledges, histories, and traditions in their schools and classrooms (Kanu, 2011; Toulouse,

2011; 2013). Regardless, mainstream teachers must be committed to fostering students' informed awareness of how power, hegemony, and conflict continue to contribute to Indigenous peoples' lived realities. Teachers are tasked with the responsibility to embed culturally appropriate learning opportunities and experiences that honor the diverse and rich voices and worldviews of Indigenous peoples and learners (Castagno & Brayboy, 2008; Savage et al., 2011).

The various school and classroom initiatives represent a modest step to eradicating the legacy of the residential school system and the other socio-political oppressive conditions that challenge Indigenous peoples' efforts towards self-determination. Significant to these efforts, though, is that mainstream principals and teachers reach out and rely on the counsel and advice of Elders, Indigenous advisors, and community members to inform the conversations and respective instructional strategies in order to provide both Indigenous and non-Indigenous students with the most effective means of addressing the tensions and ambiguities of the past.

For some, the journey towards reconciliation in Canada is in many ways only starting. beginning. But for Australian educators, it may be a journey worth noting. For Canadian principals and teachers, it may be one worth sharing given the commons spaces that we inhabit. Such conversations can represent pivotal opportunities to interrogate the respective intended curriculum and the landmark policy documents related to Indigenous education across the respective provinces, states, and territories in order to isolate and verbalize not only the specific challenges but more importantly the creative and thoughtful possibilities for educators to foster students' capacity for "intercultural understanding, empathy, and mutual respect" (TRC, 2015; 63). Perhaps only then will students, as prospective critical citizens, be willing and able to comprehend how the collective traditions, knowledges, and spirit of Indigenous peoples complement our own experiences on this land.

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Undergraduate Students' Perception on the Impact of WhatsApp in English Language Learning and Teaching

Nadia Hanif

Department of Linguistics and Communications
University of Management and Technology, Lahore, Pakistan

Maria Sajid

Department of English
Bahria University Lahore Campus, Pakistan

Abstract

Technology has invaded the field of education and has become one of the major sources of attaining knowledge. Mobile technology shares a chief importance among various technological advancements. Nowadays, almost all the students keep a mobile phone and use its applications for different purposes. With the integration of technology in education, mobile devices are also being incorporated in numerous educational disciplines including language learning. This research was carried out to study students' perception regarding the impact of WhatsApp in learning English language. A questionnaire of 27 items was administered to find out the perception of 157 students on the impact of WhatsApp in English language learning. Students' access to Internet was also inquired to study the influence of availability of internet upon students' perception. The study-findings showed that the students' have a positive perception concerning the influence of WhatsApp on English language learning. They believe that using WhatsApp for language learning gives them confidence improves their English language knowledge and enhances their four language skills. They also gave a positive response on the ubiquitous use of WhatsApp and their preference of using WhatsApp comparable to other teaching and learning pedagogy.

Keywords: Learning English language, mobile learning, technology, WhatsApp

Introduction

Education plays a significant role in achieving success in all fields of life. Over the last few decades, in the field of education a vital shift has taken place indicated by an increasing emphasis on learners and learning process rather than teacher and teaching methods. Technology has also manifested its remarkable influence in all spheres of life including education and facilitates teaching and learning. Solanki and Shyamleel (2012) and Pourhossein (2017) considered technology as a great help for the learner and they believed that it satisfies the visual and auditory senses of the learners. They are also of the view that learners can have access to a significant volume of information in technology assisted learning processes.

Similarly, the role of technology is considered influential in language learning and novice technological devices have made the language learning process different due to the fact that contrary to the conventional classroom learning, the process continues outside the classroom as well and involves excessive communication through these devices (Crescent & Lee 2011). These devices and social media applications such as WeChat, Twitter, WhatsApp, Line, Facebook etc. have increased the chances of learning past the classroom premises. Both teachers and students are provided with a platform to intermingle and to learn by themselves using various types of content, that is, audio, visual and textual content (Kumar, Lian, & Vasudevan, 2016)

WhatsApp is one of the most commonly used mobile applications and it efficiently facilitates the practice of sending and receiving messages including audio, visual and textual files. The application is easy to install in all sorts of smartphones (Ahmadi, 2017).

At present, nearly all students own a smartphone or have access to one (Beger & Sinha, 2012). Moreover, it is well known that undergraduates spend an extensive amount of time on social networking sites. They connect with fellow students and communicate with them their course contents, since the availability of Wi-Fi connections and cellular data has made it far cheaper to interact via social networking websites. This has limited the use of mobile calls and SMSs (Kumar, Lian, & Vasudevan, 2016).

Objectives of the Study

The study intends to understand the perception of undergraduate students regarding the use of WhatsApp as a tool for learning English language. In this regard, the study has the following objectives:

- To identify the impact of WhatsApp in enhancing the knowledge of English language.
- To identify the students' level of confidence while using WhatsApp in and out of the classroom.
- To identify ubiquitous learning and teaching through WhatsApp.
- To identify the development of four language skills through WhatsApp.
- To identify the students' preference for using WhatsApp as compared to other teaching methodologies.
- To find the significance of the time (number of hours) access to Internet on the above mentioned five objectives.

Research Questions

The authors of this study are English language teachers who have been incorporating multimedia in their classrooms to engage students in several language learning activities. However, the excessive use of mobile phone applications among students evoked the researchers' interest to investigate the students' perception regarding the impact of WhatsApp in English language learning.

The research question is as follows,

- What is students' perception of the impact of WhatsApp in English language learning?
The above research question was studied on the basis of following categories,
- The impact of WhatsApp in enhancing the knowledge of English language.
- Respondents' level of confidence.
- Ubiquitous learning and teaching through WhatsApp.
- Development of four language skills through WhatsApp.
- Respondents' preference for using WhatsApp to other teaching methodologies.
- To find the significance of the time (number of hours) access to Internet on the above mentioned five objectives.

Significance of the Study

The current study can bring a positive change in the teaching methodology that may enhance the learning process. The effective use of WhatsApp can be incorporated in English language curriculum to facilitate language learning. The assimilation of the efficacious use of WhatsApp may help to increase the students' feeling of security and allow them to overcome their fear of using the English language.

Literature Review

As an active member of a social community, it is pertinent to learn language effectively. In order to achieve proficiency in communication, a learner needs to work on all major skills of English language including listening, speaking, reading and writing (Grabe & Stoller, 2002).

The study revealed that lesson time is not enough to practice and develop full communicative competence; however, technology can assist by incorporating meaningful and contextualized language during interaction (Ahmadi, 2018).

Peregory and Boyle (2012) studied the use of technology for improving learners' reading and writing. The findings showed that technological tools improve learners' reading and writing skills since these tools are faster, effective and user friendly as compared to the traditional methods of learning. Moreover, the study also revealed that the internet provides a convenient platform for learners; they have an easy access to the learning lessons.

Rambre and Bere (2013) carried out a research on the use of mobile instant messaging to deliver content to learners in informal spaces. The results showed that WhatsApp positively affects students' capability to connect and participate with their fellow students online, no matter whatever the time it may be.

Attewell (2005) carried out a research on the participants from three different countries to study the effects of mobile technology on learning a foreign language. She created an SMS course to motivate students to learn foreign language. The results showed that participants improved their reading comprehension through this course and their motivation towards language learning increased.

According to a study carried out by Kumar, Lian and Vasudevan (2016) WhatsApp Messenger is a free of cost messaging application that is used for sending and receiving instant messages between individuals and among groups. It can be used on different types of computers or with different software packages and works chiefly on android tablets and smartphones. The study depicted that WhatsApp is extensively used by undergraduate students in academic settings. Formerly, WhatsApp permitted ten members in a group, now this number has been increased. It renders teachers the facility to create WhatsApp groups for their respective classes. This study also explored the students' feelings regarding using WhatsApp as a language learning tool (Kumar, Lian, & Vasudevan, 2016)

'Words Up with WhatsApp' is the title of a research by Man (2014), who studied the use of instant messaging in consciousness raising academic vocabulary. The results depicted participants' acknowledgement for the use of instant messaging by helping them to know more about academic words.

Alsaleem (2014) carried out a research on the use of WhatsApp in English language journals to improve learners' writing vocabulary, word choice and speaking ability. The study concluded that the use of WhatsApp enhanced students' language skills.

Another study on the effect of WhatsApp on critique writing proficiency and perceptions towards learning indicated that as compared to the common instruction, the use of WhatsApp enhances critique writing proficiency.

AbdAlFattah (2015) studied WhatsApp application as a technique used to enhance students' writing skills. The findings portrayed that students who were taught English language through WhatsApp developed their writing skills more efficiently as compared to the ones who studied it through their prescribed book.

Maria (2016) studied the use of WhatsApp to enhance reading and writing skills at the undergraduate college level. The study revealed that the availability of internet on cell phones almost at all times is a motivating tool for learning L2. Moreover, this study depicted that the learners tend to improve their writing skills by using WhatsApp. It also revealed that regarding language learning, learners respond in a better manner when technology and internet are assimilated in their learning.

Similarly, Ibtelal Mahmoud Aburezwqand and Fawzi Fayeze Ishtaiwa (2013) studied the impact of WhatsApp on interaction in an Arabic language teaching course. The study depicted that WhatsApp provides a platform and offers its users a source for communicating and expressing their ideas and exchanging the information ubiquitously. Yet, some of the crucial challenges involving WhatsApp in learning remain the cost of internet, work load, interruption and students' lack of active participation in learning.

Alhawati (2015) carried out a research to study the effect of WhatsApp in learning English language at the community college of Tabuk. The findings of this study depicted a significant impact of WhatsApp on the participants. Moreover, this study showed that WhatsApp plays a pertinent role in the educational field including language learning.

Methodology

The current study was conducted to investigate students' perception regarding the use of WhatsApp to enhance their English language learning and skills. The data was collected through a survey questionnaire. This survey questionnaire was developed by consulting several previous studies and related questions were adapted and

modified for the purpose of this study. In order to find out the accuracy of the constructed questionnaire, five language instructors working as assistant professors were consulted to check the appropriateness of the questionnaire.

The questionnaire consisted of twenty-seven items. Respondents were required to express their opinion by selecting the answers on the scale of 1-5 (5=Strongly Agree, 4=Agree, 3=Neutral, 2=Disagree and 1=Strongly Disagree).

The population of this study comprised undergraduate students and the participants were selected through random sampling. A total of 157 participants were selected for this study. The participants used WhatsApp for their English language course. The instructor created a WhatsApp group for each English language class that participated in this study to post and share the relevant material and to communicate with students outside the classroom. It was ensured that the students willingly participated in this study.

Participants' access to internet (number of hours per day) was also noted. This was done to draw a comparison between their response towards the impact of using WhatsApp in English language learning and their access to the internet.

Analysis

The main purpose behind using the 27-item questionnaire was to investigate students' perception regarding the impact of WhatsApp in English language learning. The questionnaire was designed to collect data regarding students' perception about the aspects of ubiquitous learning and teaching through WhatsApp, influence of WhatsApp on their level of confidence, their preference for using WhatsApp over other teaching pedagogies, development of four language skills through WhatsApp, and the effect of WhatsApp in enhancing their knowledge of English language. The data collected was analysed using SPSS version 20. The percentages of all the above mentioned categories were displayed through bar graphs. Significance of the time (number of hours) access to Internet on five objectives.

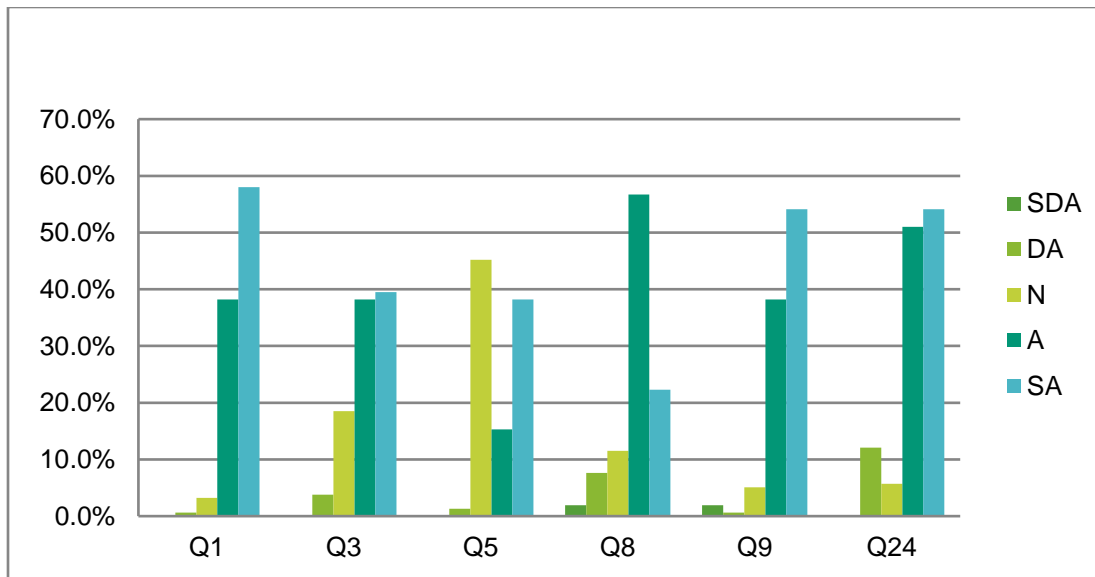


Figure 4.1: Bar graph showing students' perception of the impact of WhatsApp in enhancing the knowledge of English language

Figure 4.1 depicts the response of the participants regarding the impact of WhatsApp in enhancing their knowledge of English language. The results clearly depict that participants showed a positive attitude towards the influence of WhatsApp in developing their English language knowledge. 58% students strongly agreed that WhatsApp has helped them to enrich their vocabulary while responding to item 1. 56.7% participants agreed for

item 8, where it was discussed that WhatsApp is helpful to learn from their fellow students. 54.1% participants strongly agreed with the idea that WhatsApp has helped them to think in English and has also helped them to remember what they have learned in their English course while responding to items 9 and 24, respectively. Whereas, 45.2% participants remained indecisive for item 5, which says that using voice note feature in WhatsApp to speak English is easy. For items 8 and 9, only 1.9% participants strongly disagreed that WhatsApp has helped them to learn from their fellow students and have made them think in English.

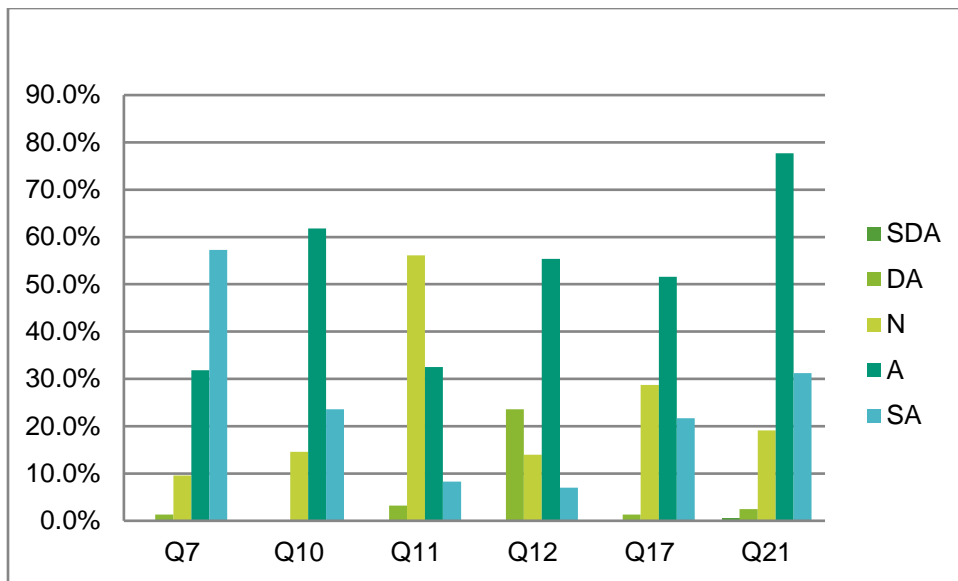


Figure 4.2: Bar graph showing students' perception of the impact of WhatsApp on their level of confidence regarding English language learning

The bar graph shows the impact of WhatsApp on students' level of confidence regarding English language learning. Six items from the administered questionnaire were included in this category. Overall, the results of the items included depict the participants' affirmative response.

According to the received responses, 57.3% participants strongly agreed that WhatsApp has created a platform for them to use English. 61.8% participants agreed for item 10 stating that the activities given by the instructor via WhatsApp improve their confidence to use English. 55.4% students agreed for item 12 stating that WhatsApp has developed their attentiveness towards learning the English language. That the use of WhatsApp has enhanced their ability of using English language was discussed in item 17 and 51.6% participants agreed on it. The response of the participants for item 21 was 77.7%, where they agreed that WhatsApp has helped them to overcome their fear of using English. However, 56.1% participants were indecisive for the item 11 stating that the use of WhatsApp has allowed them to take greater control over language learning.

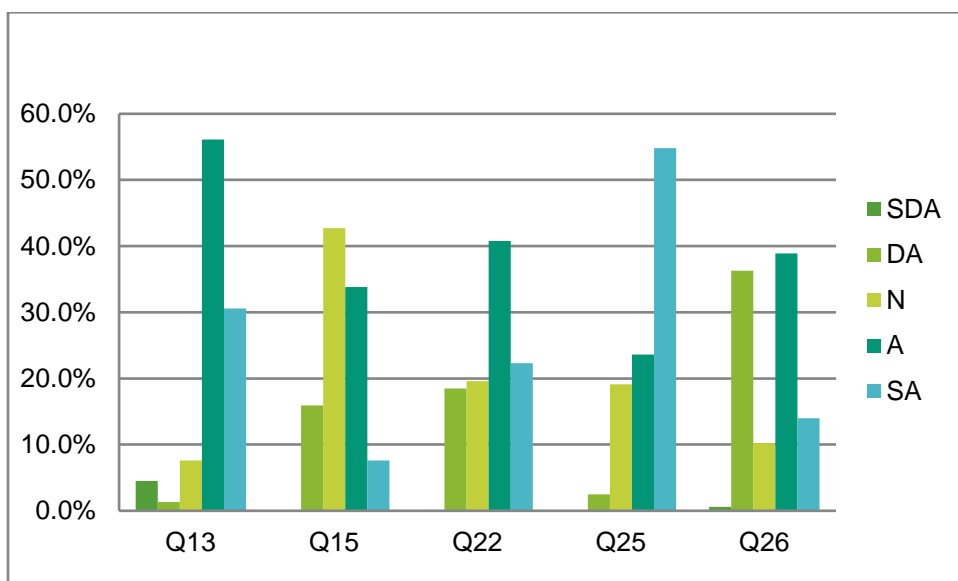


Figure 4.3: Bar graph showing students' perception of the impact of WhatsApp in ubiquitous English language learning and teaching

Ubiquitous learning can be associated with WhatsApp in a way that both facilitate the user anywhere anytime. Ubiquitous learning refers to exist or being everywhere. WhatsApp is a friendly application that can be used in a group and all members included can communicate and interact with each other, simultaneously.

For this particular aspect, 5 items were used to collect the data. Getting instant feedback from the instructor was a question asked in item 13 and 56.1% participants agreed on it. 40.8% participants agreed for item 22 stating that WhatsApp is a convenient source to get information from the instructor. 54.8% participants agreed that WhatsApp has increased their interaction with lectures and classmates to learn English while responding to item 25. However, only 38.9% agreed for item 26 that investigated the use of WhatsApp in promoting auto learning of English. For item 15, the participants of the current study remained indecisive, where they were inquired whether WhatsApp allows them to get instant information for learning English.

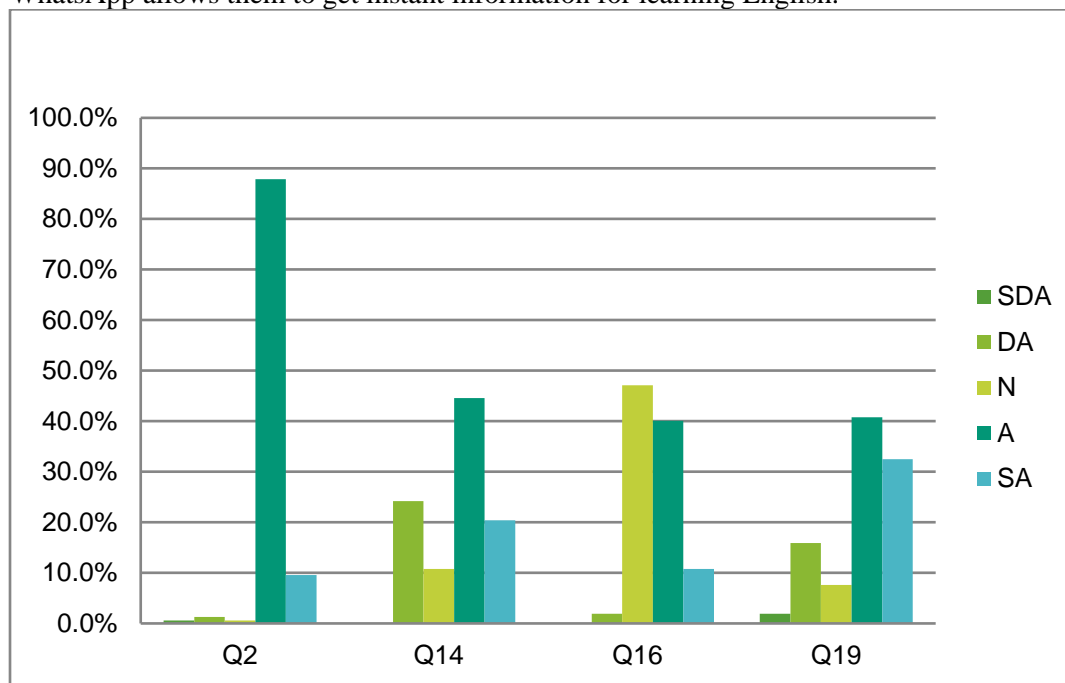


Figure 4.3: Bar graph showing students' perception of the impact of WhatsApp in learning four language skills

Figure 4.4 shows the responses of the participants regarding the impact of WhatsApp in learning the four language skills. Listening, speaking, reading and writing are the four major skills that are essential for language learning. Four items from the administered questionnaire were selected to investigate the participants' perception about the use of WhatsApp for learning these skills.

87.9% participants agreed for item 2 that WhatsApp has improved their listening skills. On the other hand, 44.6% and 40.8% participants agreed for items 14 and 19 respectively stating that WhatsApp has helped them to improve their speaking and reading skills. Whereas, the impact of WhatsApp on writing skills was discussed in item 16 and 47.1% participants were indecisive about it.

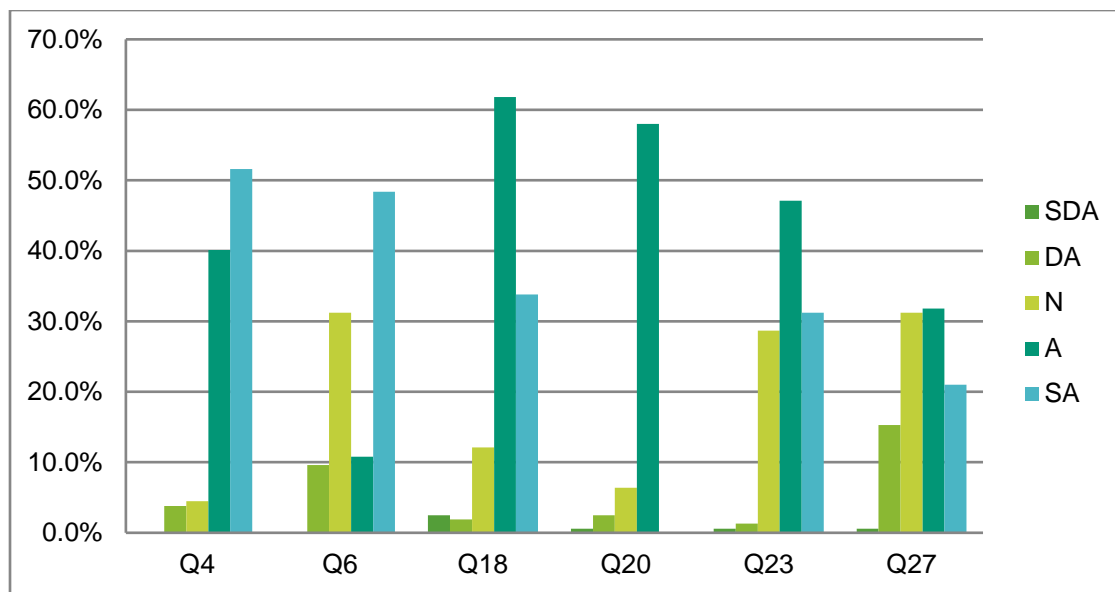


Figure 4.5: Bar graph showing students' perception of their preference of using WhatsApp

Finally, the administered questionnaire investigated the students' preference of using WhatsApp. 6 items from the questionnaire were selected for this particular purpose. 51.6% participants strongly agreed for item 4 stating that it is easy to download WhatsApp on their mobile phone. For item 6, where participants were asked to show their views about the use of WhatsApp as an easy application, 48.4% participants strongly agreed that through this application transferring and sharing PDF, MS Word, PowerPoint, Excel and media files becomes easier and facilitates English language learning. 61.8% participants agreed for item 18 stating that learning English through WhatsApp is fun. 58% participants agreed that all lecturers should use WhatsApp to support English language learning. Item 23 surveyed whether the participants consider the use of WhatsApp to learn English language beneficial and 47.1% participants gave their response in affirmative. For item 27, which surveyed the comparison of watching movies and the use of WhatsApp to learn English, 31.2% participants gave their response as neutral. For the same question, 31.8% participants preferred using WhatsApp on watching movies to learn English.

The following table shows Pearson coefficient of correlation of time (number of hours accessing the internet) with students' perception of the impact of WhatsApp as a tool in enhancing the knowledge of English language.

Table 4.6

Pearson coefficient of correlation of time (number of hours accessing the internet) with students' perception of the impact of WhatsApp as a tool in enhancing the knowledge of English language.

	TIME	Category_1
TIME	Pearson Correlation	1
	Sig. (2-tailed)	-.120
	N	.133
Category_1	Pearson Correlation	157
	Sig. (2-tailed)	-.120
	N	.133
		157

The following table shows Pearson coefficient of correlation of time (number of hours accessing the internet) with students' perception of the impact of WhatsApp on their level of confidence regarding English language learning.

Table 4.7

Pearson coefficient of correlation of time (number of hours accessing the internet) with students' perception of the impact of WhatsApp on their level of confidence regarding English language learning.

		TIME	Category_2
TIME	Pearson Correlation	1	.110
	Sig. (2-tailed)		.172
	N	157	157
Category_2	Pearson Correlation	.110	1
	Sig. (2-tailed)	.172	
	N	157	157

The following table shows the Pearson coefficient of correlation of time (number of hours accessing the internet) with students' perception of WhatsApp in ubiquitous English language learning and teaching.

Table 4.8

Pearson coefficient of correlation of time (number of hours accessing the internet) with students' perception of WhatsApp in ubiquitous English language learning and teaching.

		TIME	Category_3
TIME	Pearson Correlation	1	.262**
	Sig. (2-tailed)		.001
	N	157	157
Category_3	Pearson Correlation	.262**	1
	Sig. (2-tailed)	.001	
	N	157	157

** . Correlation is significant at the 0.01 level (2-tailed).

The following table shows Pearson coefficient of correlation of time (number of hours accessing the internet) with students' perception of the impact of WhatsApp in learning four language skills.

Table 4.9

Pearson coefficient of correlation of time (number of hours accessing the internet) with students' perception of the impact of WhatsApp in learning four language skills.

		TIME	Category_4
TIME	Pearson Correlation	1	.068
	Sig. (2-tailed)		.400
	N	157	157
Category_4	Pearson Correlation	.068	1
	Sig. (2-tailed)	.400	
	N	157	157

The following table shows Pearson coefficient of correlation of time (number of hours accessing the internet) with students' perception of their preference for using WhatsApp.

Table 4.10

Pearson coefficient of the correlation of time (number of hours accessing the internet) with students' perception of their preference for using WhatsApp.

		TIME	Category_5
TIME	Pearson Correlation	1	-.179*
	Sig. (2-tailed)		.025

	N	157	157
	Pearson Correlation	-.179*	1
Category_5	Sig. (2-tailed)	.025	
	N	157	157

*Correlation is significant at the 0.05 level (2-tailed).

Discussion

The findings of the current study showed a positive attitude of students towards the use of WhatsApp for learning English. The graph of positivity towards the use of WhatsApp for the purpose of language learning highly advocates that this way of learning helps the learner to develop English language skills. Alhawati (2015) also studied the impact of WhatsApp in learning English language at the community college of Tabuk. The findings of his study showed a significant impact of WhatsApp on the participants. This study also portrayed that WhatsApp is playing a pertinent role in the educational field including language learning.

The use of WhatsApp within the classroom not only enhances the knowledge of the language but also remains a major source of improving the confidence of students as they get immediate feedback from their instructors while sharing knowledge with their classmates.

Students' perception has clearly illustrated that the improvement of the four language skills is complimented by using WhatsApp, as it was presented by Attewell (2005) that the learners achieved considerable improvement in reading comprehension after using mobile technology. AbdAlFattah (2015) also proved that mobile learning techniques are helpful in developing students' writing skills. Similarly, the current study also supports the intervention of WhatsApp to enhance the four English language skills.

The findings of the current study suggest that this method is ubiquitous and supports the language learning process, as Rambre and Bere (2013) found in their study that mobile instant messaging and WhatsApp were favourable in communicating with students in informal spaces and to achieve academic benefits. According to the views of the participants of this study, WhatsApp connectivity gave them a platform to use English language and get instant help to improve it. Holistically, participants agreed on the friendly and convenient use of WhatsApp.

According to the traditional manner of teaching and learning, technological tools create a negative impact on students and their language learning process. However, the current study and several other studies such as Peregory and Boyle (2012), Kumar, Lian and Vasudevan (2016), Alsaleem (2014) and Maria (2016) have revealed that the use of WhatsApp can elevate students' language ability.

Conclusion and Recommendations

As for now, it can be said affirmatively that undergrads have a positive notion of using WhatsApp in English language learning as it is convenient to learn, easy to access and learning can be carried out in an interesting and fun manner. Furthermore, WhatsApp helps students to gain knowledge and motivates them to interact with their fellows and instructors to resolve their queries. The students' attitude in this study clearly shows their preference for WhatsApp being a supportive, useful and an accessible application.

For further studies, it is recommended to conduct a true experimental research with the intervention of a specially designed syllabus integrating WhatsApp. Moreover, the study can be expanded by examining the performance of a larger number of participants. A larger sample size would also bring strength in the reliability of the findings.

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GDP- a poor indicator of overall wellbeing of a nation: a case study of Pakistan's overall progress

Engr. AMMAR AKHTER KHAN
SENIOR INSTRUCTOR
JINNAH POLYTECHNIC INSTITUTE KARACHI, PAKISTAN.

Abstract

The gross domestic product is widely known for the measurement of the wellbeing of any particular nation and its economic progress. It gained wide acceptance from 1990's as a valuable indicator of a nation's overall development and progress. On the other hand, GDP has its flaws to accurately measure any nation's wealth. Additionally, to keep up with the GDP most of the countries are polluting their environments for industrial development, refraining their people from public services. Therefore, a country building nuclear weapons, and another country building hospitals, can both be accounted equal as far as the GDP is concerned. It has been indicated by an inclusive wealth report 2018 that almost 44 out of the 140 countries in the world are not on their sustainable path but progressing well according to GDP. On the other hand, for the measure of well-being of any nation, inclusive wealth could be a good indicator. Inclusive wealth accounts to prospects like; management capital, human capital and also the natural capital of a particular country. In this particular research, Pakistan's inclusive wealth will be analysed against its GDP through secondary data collection that will be mostly taken from the statistics that are available on the online forums and through the various reports of UN and world economic forum.

A Case Study: Emotional Labor in the infidelity Counselling encounter

Mrs. Iona Abrahamson
iona4life@hotmail.com
s3838113@student.rmit.edu.au
RMIT University, Melbourne, Australia

Abstract

This paper is based on preliminary findings from my PhD study into managing infidelity counselling. Therapists find dealing with the trauma of infidelity one of the most difficult problems to treat in the business of counselling, because it can trigger jealousy and anger and a range of other negative emotions, and call for emotional labour. Arlie Hochschild (1983) defined emotional labour as requiring one "to induce or suppress feeling in order to sustain and to produce a suitable state of mind in others" (p. 7). The employee accomplishes this countenance or appropriate display of emotions through surface acting and deep acting. Though emotional labour has been studied extensively in people work such as service, teaching and healthcare, no studies have looked at emotional labour in the area of infidelity counselling. Here I focus on a case study of a professional therapist whom I interviewed about her experience of working with infidelity counselling. The audio-recording of the interview with the therapist was

transcribed and analysed, using an empirical narrative inquiry lens. The therapist's narrative tells the story of how she manages her own emotions when working with a family dealing with the aftermath of infidelity, that is with a faithful wife's shock, an unfaithful husband's disinterest and their adult daughter's concern. The findings show that the therapist performs emotional labour in accordance with the professional and ethical requirement role of caring in the therapeutic practice of infidelity counselling. The findings also show that emotional labour plays an important role in establishing and maintaining rapport with clients. Despite a rocky start with the therapist, the faithful wife was able to return for further work. The implications of this interdisciplinary research are discussed in terms of the consequences of emotional labour in infidelity counselling, drawing on a narrative inquiry methodology.

Challenges and Opportunities in the ICTs use and integration in Higher Education

Ms. Ameer Imane

i_ameur@esi.dz

macoori.am@gmail.com

Laghouat University, LAGHOUAT, ALGERIA

Over the last two decades, several advancements in the field of technology have occurred, making several aspects of our lives more easily managed and completed through computers and online based technologies, even education is benefiting from this advancement. The education landscape worldwide is experiencing a major change in the ways higher education is taught and the ways the students learn due to the advent of modern technologies. Nowadays, new ways of learning and teaching have emerged globally. ICT and E-learning are forms of education to which attention has increased. Actually, educational technology is integrated as a supporting didactic tool in the majority of Algerian Universities. Educational technology improves learning, which support the need to expand the use of these technologies for today's students and provide them efficient tools for learning. In developing countries, education is gaining more importance due to its benefits for a given country's economic and social position. Many governments around the world spend billions every year to improve all aspects of their education systems. In this vein, Algeria has turned more attention to the sector of modern technologies of information and communication, and raised the budgets of the various sectors associated with the field of technology to the highest levels. Believing in the role of the university, and its importance in achieving development and prosperity, Algeria has been keen to modernize the higher education sector, which has benefited significantly, from various tools and modern technologies (Djoudi,2010). After having witnessed the institutions expansion, and the development of all levels and disciplines, Algeria attempts to interact with the international environment, and continuously benefits from all types of developments. In fact, the Algerian higher education cannot afford to remain on the margins of technological innovations. It has become important for Algeria to strive to use new trends of technology to develop and strengthen higher education. Nevertheless, the use and the integration of technology is still in its early stages. Many difficulties and challenges need to be addressed, in order to be widely adopted.

The present research studies the current situation of the use of ICT and E-learning integration and adoption at the University. The study aims at analyzing the prospects of benefiting from these technologies in Algeria, to minimize the problems facing the higher education system at the University, and explore the new educational technologies especially in the new era after the Covid 19 corona virus pandemic, where the distance learning became an obligation to save lives all over the world. The study further points out the challenges that hinder the rise of e-learning and highlights the degree of readiness to integrate e-learning in higher education for the students of computer science.

Evaluating Women's WIL Experiences for Enhanced Understanding of Employability Skills: Insights from United Arab Emirates

Dr. Mamie Y, Griffin

mgriffin@hct.ac.ae

Abu Dhabi Women's – Higher Colleges of Technology

Abstract

Employability skills of university graduates remain an ongoing topic that has been explored from multiple perspectives. Few studies examine the perception of students, and even fewer studies are based on students in the United Arab Emirates (UAE), a country that has experienced rapid changes in recent years with respect to human capital development. Many women enrolled in UAE universities are either first or second-generation attendees, and the UAE is ranked first among Arab countries for educating female citizens. These developments coupled with cultural and social considerations coupled along with the general complexities of gender in the workplace highlight the need for exploration. This study explores the status of women's employability skills by exploring their experiences within a business disciplined Work Integrated Learning program. Using a largely qualitative instrument, students reported the skills they found essential in the workplace, classroom activities that most prepared students to use such skills in the workplace, and the various challenges they encountered during their work placement experience. Implications for academic and professional practitioners are discussed. Many of the essential skills reported reflect popular literature, however, a number of the challenges highlighted appear to stem from socio-cultural factors. Such findings are useful to policymakers and the local higher education system to better prepare female students for WIL and ultimately the workforce.

Integrating STEM education and teaching activity in The Indonesian Curriculum: A Systematic Review

Janu Arlinwibowo^{1,2}, Heri Retnawati¹, Badrun Kartowagiran¹

¹ Doctoral Program of Educational Research and Evaluation, Universitas Negeri Yogyakarta
Jalan Colombo No. 1, Karangmalang, Yogyakarta 55281, Indonesia.

² Faculty of Science, Technology, and Mathematics, Universitas Muhammadiyah Kudus
Jalan Ganesha No.1, Purwosari, Kudus, Jawa Tengah 59332, Indonesia

* Correspondence Author. E-mail: januarlinwibowo.2018@student.uny.ac.id, Telp: +6285643355224

Abstract

Teaching and Learning with the STEM approach support mastering 21st century skills so that they begin to be introduced in Indonesia. However, there is still no reference to blend STEM learning steps with the 2013 curriculum. Thus, the purpose of this study is to synthesize a variety of literature in order to find a formula for implementing STEM learning in accordance with the 2013 curriculum. This research is a systematic review involving 46 relevant sources of selected literature. The literary criteria used were published between 1996 and 2019 in journals, books that have ISBN, and government documents. Analysis of research results used thematic analysis that is started from recognizing data, making initial code on data, compiling code to find themes, examining themes, defining and naming themes, and ending the report of the theme by linking it back to the research question. The literature review produces a learning syntax that aligns between EDP Steps in STEM, Scientific Method in Curriculum 2013, and

project-based learning steps. The syntax of implementation STEM in Curriculum 2013 is identifying problems, designing designs to answer problems, making products, conducting product trials and evaluations, revising products, concluding, and communicating findings.

Keyword: STEM Education, Indonesia, Curriculum, Teaching Activity

GDPR consent pop-ups. How are we thinking about them? An Elaboration Likelihood perspective

Corina Cara (corresponding author)
Alexandru Ioan Cuza University, Iași, Romania
corina.cara@gmail.com

Lorena Florentina Dumitrașciuc,
Alexandru Ioan Cuza University, Iași, Romania
lorena.popescul@gmail.com

Europe's General Data Protection Regulation (GDPR) led to some substantial changes to the overall user experience, one of it being the usage of pop-ups. These elements are included in websites with the purpose of asking users' consent regarding the cookie usage.

One issue that emerged from this practice is the constant interruption of the users while they are browsing websites.

The purpose of this paper is to determine how those consent pop-ups are perceived by the regular user. For this purpose, we are using the concept of *elaboration likelihood* from the Elaboration Likelihood Model (of Petty and Cacioppo, 1986) in order to investigate how users perceive the cookie consent pop-ups.

The model states that people can process information in 2 different ways, either centrally (carefully thinking about the information, or highly elaborated) or peripherally (attitudes about something are based on superficial elements, or having a low elaboration).

A quantitative approach is used, as we conducted an online survey. We used 3 dimensions for measuring elaboration upon the message – Interest, Awareness and Cognitive Engagement.

We conducted a Confirmatory Factor Analysis and the results were used for predicting the habit of changing the default settings of the cookie consent pop-ups and for correlation with other relevant variables. We found out that Cognitive engagement is not a significant variable for predicting the behaviour of changing the defaults, while Interest and Awareness about the subject are significant predictors.

The main implications of this study lead to a broader discussion about this practice and makes us wonder if the pop-up is the best solution to ask for cookie consent. Assuring the best interest of users' data is an important value of the European

Union and this paper helps to identify if the pop-up usage is the best way to do that, protecting the users' best interest while not hindering the overall user experience.

Keywords: GDPR, cookie consent, user experience, usability, pop-ups, elaboration likelihood model, data privacy

JEL Classification: M38, M31

The Influence of Coronavirus on Organizational Behavior

Dr. Dumitrașciuc Lorena Florentina

lorena.popescul@gmail.com

Alexandru Ioan Cuza University of Iasi, Romania

The aim of this research is to analyze the influence of coronavirus in changing the behavior of entrepreneurs at workplace. For this, we analyzed the data provided by the National Office of the Trade Register regarding the number of deregistrations of companies for the period 01.01.2020 – 31.03.2020, respectively 01.01.2019 – 31.03.2019. We found that there are many organizations that go bankrupt and are deregistered. For example in the period 01.01.2020 – 31.03.2020 there were 13,791 deregistrations, while 01.01.2019 – 31.03.2019 there were 49,746 deregistrations.

Coronavirus has certainly led to a change in the thinking paradigms of entrepreneurs. So in addition to the negative side that coronavirus brings (infections and deaths), it also brings a number of positive changes in the organizational environment.

The positive part is changing the mentality of entrepreneurs in which they can exercise their leadership qualities. This is also the real test that entrepreneurs are subjected to, namely the test of being a leader. Which means this pandemic has taken them out of their comfort zone. Even if in the short term they feel some discomfort, in the long run they will see positive results in entrepreneurial organizations. Bankruptcy, respectively the deregistration of companies happens due to a deficient and chaotic management, in which the leading entrepreneur gets lost in decisions, acting emotionally, after feeling and is impulsive. Organizations do not go bankrupt because of a virus, but because they were affected before the virus came, lacking clear goals and strategies for management, marketing, sales, financial projections, performance indicators at short, medium, and long-term.

The problem is that it is not the coronavirus that will lead organizations to collapse, respectively bankruptcy, the real problems are the reactions and actions of entrepreneurs to difficult situations, as we have seen in the number of delisting companies.

In such crisis situations, the “fight or flight” system is activated in people's minds, more precisely the survival instinct, in which some entrepreneurs may lose control and begin to project dangers around them. From an anatomical point of view, the cerebral amygdala is activated, which leads to the blockage of certain areas both in the brain and in the body. But there is a need to reconnect certain areas of the brain that deal with the part of creativity and reason, in which entrepreneurs look for the benefits and opportunities that this crisis brings.

Investigating the Role of Text in Character Building

Nadia Hanif
Department of Linguistics and Communications
University of Management and Technology, Lahore, Pakistan

Maria Sajid
Department of English
Bahria University Lahore Campus, Pakistan

Abstract

The aim of the current study is to explore the extent to which designed curriculum helps students in developing their social and moral values. In order to achieve the mentioned purpose, a survey is carried out in a private institute of Lahore. English text from grade I is analyzed through a designed questionnaire. The questionnaire is based on Krawthol's affective domain and administered among teachers and administrators of all campuses within the same institute to find the role of English text in character building of students. Purposive sampling technique is used to select a sample of 76 participants from the defined population. Data derived from questionnaires is statistically investigated, such as t-test, ANOVA, Cohan's d, eta and percentages. The survey result clearly shows the positive contribution of Grade I English text in character building of the students, presented in form of tables. Moreover, the research has imperative suggestions for teachers and curriculum developers for further research in the field of character building at elementary level.

Keywords: Character building, English Text, grade I

Exploring Critical Success Factors for Public Private Partnership Case Study: The Educational Sector in Egypt

Riham Helmy
The Arab Academy for Science and Technology & Maritime Transport, Alexandria, Egypt
Prof. Mohamed Wahba
The Arab Academy for Science and Technology & Maritime Transport, Alexandria, Egypt
Associate Prof. Nevien Khourshed
The Arab Academy for Science and Technology & Maritime Transport, Alexandria, Egypt

Abstract

Public Private Partnership (PPP) becomes a part of larger global trends that transcend sector and place. Consequently, many countries are adopting PPP in various sectors including education; Egypt is one of them. This is clear from the adapted policies by the government and what is stated in Egypt's vision strategy 2030. The researcher's main question that she attempts to answer in this study is "What the CSFs that guarantee the success of PPP in the education sector in Egypt are". Thus, the aim of this study was to explore and identify the Critical Success Factors (CSFs) needed to facilitate the successful implementation of PPP in the education sector in Egypt. The research proposed a CSF model based on an exhaustive literature review to identify CSFs for PPP successful implementation. The identified 21 CSFs were divided into four groups: political, legal, economic and financial as well as operational and managerial. A qualitative and quantitative analysis that involved semi-structured interviews and a questionnaire survey tool was applied to gather required data. Then data were analyzed using Correlation and

Regression using Structural Equation Modeling (SEM) to test the hypothesis for the research. Results show that Managerial and Operational factors are the most significant factors that affect the successful implementation of PPP followed by Legal Factors, Political Factors, then Economic and Financial Factors. The research results and findings are demonstrated by the end of the research with further recommendations. Finally, it is important to mention that this work provides not only useful information and practical guidance for successful implementation in the education sector but also certain reference value for building a sustainable development society in Egypt.

Keywords: Public Private Partnership (PPP), Managerial and Operational Factors, Economic and Financial Factors, Legal Factors and Political Factors.

The rising of Fintech – How the tech revolution in financial services represents a paradigm shift in humans and society

Giovanni Buono, Johannes Treu, Valerie Elss, Pia Winkler
elss@fh-mittelstand.de
Fachhochschule des Mittelstands (FHM), Germany

Finance is shaping human relationship from an economic point of view as well as having influences on social structure and politics. The transformations started with the rising of the internet, saw an acceleration due to changes like higher computational power in miniaturized electronics which created smartphones and thousands of “apps”. This revolution, Fintech, a combination of the words “Finance” and “Technology”, is defined as “a new financial industry that applies technology to improve financial activities” (Schueffel, 2017) or as those “applications, processes, products, or business models in the financial services industry, composed of one or more complementary financial services and provided as an end-to-end process via the Internet” (Sanicola, 2017) or as “any innovative ideas that improve financial service processes by proposing technology solutions according to different business situations, while the ideas could also lead to new business models or even new businesses” (Leong & Sung, 2018). Fintech has developed to a point where many sub-areas of innovation named after the specifics single services or aspects of the business, more verticals like “regtech, wealthtech, proptech, crypto-currencies, neo or challengers bank, robo-advisors, etc.” are growing and specializing. The scope of this paper is to present an overview about the disruption brought in the finance sector by the recent technology developments, giving some basic functional scheme of them. In addition to understanding that technology is synonymous with innovation when not just replacing tools, but when promoting deeper change representing complete changes of business models, we will compare examples of innovation drivers (including products and services). Finally, we will highlight the long-term impact on social and geopolitical grounds with shifting power equilibriums, like the loosing banking monopoly of finances in favour of tech giants GAFA (Google, Amazon, Facebook, Apple) or the recent announcements of global and official cryptocurrencies, LIBRA by Facebook or CBDC (Central Banks Digital Currencies) from China government who will transfer huge power on international trade to this country. As Bill Gates said “Banking is necessary; banks are not” perfectly describing what is happening throughout the financial industry: massive disappearing of traditional jobs, consolidation in the banking industries, robots that advice how to manage and save money. Many compare Fintech revolution to the once occurred with the arrival of Internet, but faster, if this is true, in 10 years the world will look like very different from today, and this paper aims to be a little better prepared for the future.

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ISBN 978-1-83853-641-1





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