Education Policy in the Age of Social Advancement

Public policies, including those with a focus on education, across the world, are constantly being shaped by, and transformed through, ongoing social development, driven by economic, social, cultural, political and other factors. Education and educational policies in the United Arab Emirates (UAE) are as young as the country is. In the UAE, as one of the most innovative countries in the world, such innovations are mirrored by the advancement of education and educational policies through various best practices. The twelve chapters of this book address unique areas, aspects and practices of education policies in the UAE that will serve to contribute to ongoing debates that continue to shape educational innovation and social advancement.

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Educational Policies in the Age of Social Advancement:
Studies from the United Arab Emirates

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Contents

Preface

Public policies across the world are constantly being shaped and transformed through ongoing social advancements, driven by economic, social, cultural, political and other various factors. The role of different stakeholders during different stages of the policy process such as agenda setting, formulation, legitimation, implementation and evaluation is increasing the complexities of the public policy making and managing processes. Theories and practices of public policies indicate numerous approaches to policymaking and analysis namely; bureaucratic, scientific/rational, consultative, argumentative, participative and others. Institutions embracing public policies often deal with such complexities in a unique manner that suits their nature, objectives and capacities.

Similar dynamics are more common in educational policymaking and analysis as the sector is predominantly driven by public and social processes. Most of the massive educational reforms were once started as simple ideas that went around rigorous public debates to be formulated as policies and lives through the struggles over the implementation and evaluation to contribute to the transformation. Education and educational policies in the United Arab Emirates (UAE) are as young as the country is. However, the UAE being one of the most innovative countries in the world, such innovations are mirrored in the advancement of education and educational policies through various best practices.

This book in particular is the outcome of rigorous learning experiences of twelve doctoral researchers in the field of education, who prepared a scholarly research paper after the module 'Theories and Practices in Educational Policy'. Each chapter addresses a unique area that includes policies on; inclusion, teacher licensing, assessment, giftedness, early childhood, vocational education, science education, parental engagement and other relevant topics. The chapters were written with necessary theoretical, empirical evidences and with sufficient scientific, methodological rigour. We are confident that these twelve studies might contribute to the ongoing debate in the fields of these studies. Moreover, we believe that such contribution would help shape the social advancement.

Notes on Contributors

Dr Solomon Arulraj David is an Associate Professor of Education and the Head of the Masters in Education Programme at the British University in Dubai, the UAE.

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The twelve authors who contributed the book chapters are currently pursing doctorate in education at the British University in Dubai, the UAE.

An evaluation study of baccalaureate-nursing students' "clinical performance evaluation" policy: Faculties' perspectives in the UAE

Annie Rosita Arulraj

Introduction

"Any institution wanting an overflow of audience for a symposium need only to plan a program called evaluation of nursing students in the clinical area" (Woolley 1977 p.308). These are the words mentioned three decades ago by Woolley (1977) are very relevant in todays' context too and perhaps the struggle and debate is more so now by the nursing clinical educators with the issues of clinical evaluation.

Clinical evaluation policy of Fatima College of health sciences, the United Arab Emirates (UAE), "The student's clinical evaluation will have to be done at the end of the clinical rotation using the non-graded- pass/ fail evaluation, which is based on the pre-determined domains". Evaluation of the clinical performance for the nursing students is very important to determine if they are prepared adequately and to the extent to provide professional client and family centred care. In Fatima College of health sciences (FCHS), the policy that is laid down for clinical evaluation is "The nursing students' clinical performance have to be evaluated by the end of the clinical posting using a non-graded pass or fail using the clinical assessment tool". Clinical evaluation is a vital responsibility of the nursing clinical facilitators/ instructors, who are considered as the gatekeepers to the nursing profession (Tounangaeu et al., 2007).

The objective of the study is to explore the lived experiences of faculty involved in these undergraduate nursing students' clinical evaluation and thereby evaluating the clinical evaluation policy related to non-graded pass/ fail. From the research problem, the following main research questions emerged: What are the lived experiences of faculty involved in these undergraduate nursing students' clinical evaluation and thereby evaluating the clinical evaluation policy related to non-graded pass/ fail.

The purpose of this study is to evaluate the policy of clinical evaluation by assessing the lived experiences of nursing faculties' who have evaluated the students with the graded clinical evaluation tool earlier and also presently using the non-graded pass/ fail clinical evaluation tool as per the policy of clinical practicum for the undergraduate nursing students of Fatima College of health sciences, Abu Dhabi. The evaluation of clinical performance is an important aspect to assess the extent to which the learning objective is attained or met. It helps the faculty to determine the level to which the student has achieved and able to provide professional client centred care. The mode of students' clinical evaluation, whether it is a non-graded pass or fail or graded evaluation will have greater implication related to interest shown to achieve the learning objective by the students, to the nursing program and also to the health care system of the country as a whole.

To the researchers' knowledge, no study has yet been conducted in the United Arab Emirates that explores this topic. This study will greatly benefit of FCHS stakeholders, faculty and students about the curriculum development. Fig: One illustrates the focus of the study, where the evaluation of the implemented policy is the focus.

Literature Review

A systematic review of literature review was undertaken using the Cumulative Index to Nursing and Allied Health Literature (CINAHL), EBSCOhost, and Google Scholar databases to obtain the current state of knowledge about how to evaluate clinical evaluation policy and clinical evaluation processes. Key terms used in the literature review were nursing clinical education, clinical rotation, clinical evaluation, clinical evaluation instrument, clinical assessment tool, and clinical evaluation or assessment. The literature that were consulted yielded limited evidence on the topic.

Research has identified challenges to clinical evaluations including biases, misinterpretation of expectations, and inconsistent opportunities for learning (Krautscheid, Moceri, Stragnell, Manthey, & Neal, 2014). In FCHS, nursing students' clinical evaluation policy, process and tool have undergone numerous changes to best suit the purpose. The first clinical evaluation tool had 46 aspects that were graded using the Likert scale of 1-4, followed by change in policy that indicated the clinical performance of the nursing students in the domains as Achieved or Not Achieved. Presently the main change is a move away from Achieved or Not Achieved assessment to a rating scale where the student and clinical facilitator use the scale to indicate where the student is on a scale from Dependent to Independent in meeting the HAAD competencies grouped under the main domains namely management of nursing care, professional & ethical practice and professional development.

The 5-point scale provides a structure for scaffolding the degree of competency of relevant skill/behaviour within the three domains of the Health Authority for Abu Dhabi (HAAD). The tool has been developed by Griffith University Australia. Every domain must be assessed in the "Assisted" or higher range to obtain a non-graded pass. A student will fail clinical placement if they are assessed as dependent or marginal for any domain. Grealish L and Ranse K., 2009, 'Kaphagawani NC and Useh, 2013 it is evident that the quality of nursing education depends largely on the quality of the clinical experience that student nurses receive in the authentic environment, namely the clinical placement area. Lorretta Krautscheid (2013) endorsed in her descriptive, cross sectional study that, the decision of following the policy of either pass or fail has a major and vital implication for the student, teacher and the public. It has to be considered as the critical element in the curriculum. The curriculum has to go far beyond the quantitative measurement of performance, to provide a learning environment and allow the student to explore opportunities to learn (Mahara, 1997). Amanda (2014) affirms in his study that the clinical evaluation policy and tool is a vital element that will enhance the evaluation of students' clinical performance. As part of the qualitative descriptive study by J.K. Debrew (2014), which was done involving 24 nurse educators in a south eastern US state, where the participants were asked through an interview to describe the time when they had to decide to fail a student, the educators were allowed to select any study that they felt the compulsion to share from their end. The study results indicated that there are multi factorial reasons that would be considered or assessed to pass or fail

the student and it is essential to have a clear perspective on clinical evaluation that would benefit the student, faculty, and most importantly the students.

Theoretical underpinning:

Clinical evaluation is an important and a critical element in the nursing education. The nursing professionals are expected to be to be with equipped with good problem solving skills, sound clinical knowledge, and accuracy & proficiency in practical skills. To ensure that the nursing students, who will be the future nursing workforce for the health care system are adequately prepared, competent to perform their role, competency assessment tools are required that provide valid and reliable measures of a nurses' clinical performance. The main educational theory that is consulted in relation to the students' clinical evaluation tool is the five-point Bondy rating scale and Bloom's Cognitive Domain Taxonomy to guide the formulation of the tool and the associated scoring matrices. "Bloom's taxonomy of educational objectives" categorizes the educational objectives according to a behaviour that belongs to the hierarchy. The taxonomy indicates (ASK) the attitudes to be learned, skills and nature of the knowledge, in ranked order. It is also divided into three broad domains: cognitive, affective and psychomotor. While the three domains are described as separate entities, yet they are interdependent.

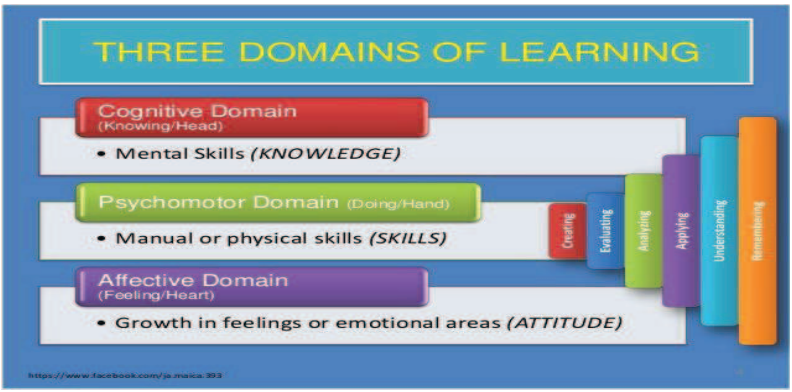

Fig: Three domains of learning as per Blooms taxonomy.

Methodology

Research approach will be inductive which means, that it helps to look for a pattern of meaning based on the data that will be collected. Qualitative research is adopted as a study approach since qualitative study can be a flexible. Design to employ an in-depth and holistic study of the perceptions, characteristics of the phenomenon to be studied by the collection of rich narrative materials. This design explores and collects rich descriptions and the phenomenon will be explored through an inductive process to identify themes and categories (Polit & Beck, 2014; Bothma, et al., 2010). The principles of qualitative research were used to explore the thoughts, perceptions, feelings and opinions of the faculties and the undergraduate nursing students who had their clinical rotations in the medical and surgical units. An exploratory approach is usually used to capitalize the knowledge of the phenomenon under study, and provides basis for confirmatory studies (Burns & Grove, 2014). Burns and Grove (2014) asserts that descriptive research describes the events and real-life experiences to discover new meaning. The researcher was keen and used the students' and the faculties' lived experiences to describe the phenomenon under study, namely the non-graded clinical evaluation. Sandelowski (2010), Lewallen & De Brew (2012) had undertaken a qualitative descriptive study involving 24 educators who were involved in the clinical education and its evaluation. Students face the real clinical scenarios during their clinical practice. If those clinical experiences and its evaluation were structured well, then that would help in bridging the gap between the theory and practices (Karayurt 2008).

The research design adopted to conduct this study was an evaluation study design with Phenomenological, exploratory qualitative study approach. Russel (2006, P.102) defines "evaluation research is a type of study that uses standard social research methods for evaluative purposes, as a specific research methodology, and as an assessment process that employs special techniques unique to the evaluation of social programs There are many different types of evaluation methods available, which includes input measurement, output/performance measurement, impact/outcomes assessment, service quality assessment, process evaluation, benchmarking, standards, quantitative methods, qualitative methods, cost analysis, organizational effectiveness and program evaluation methods Russel (2006). Evaluation research should be a rigorous, systematic process that involves collecting data about organizations, processes,

programs, services, and/or resources. Evaluation research should enhance knowledge and decision-making and lead to practical applications. Campbell (2007). The setting of the study was at the Nursing program at Fatima College for Health Sciences (FCHS), Abu Dhabi, United Arab Emirates. The FCHS is affiliated with the Institute for Applied Technology (IAT).Hospitals affiliated with the Health Authority of Abu Dhabi (HAAD- SEHA are utilized for clinical practice by the enrolled undergraduate nursing students from year two of their nursing program.

The target population was the nursing lecturers of Fatima College of nursing baccalaureate program at a College of Nursing in FCHS, Abu Dhabi. A purposive sampling was done. Several authors (Burns & Grove, 2014; Botham *et al*, 2010) affirms that purposive sampling is a non-probability sampling method where the researcher consciously selects the samples based on pre-determined criteria to be included in the study. The purposive sampling method was applicable as the researchers wanted to gain insight about the faculties and students' lived experiences about the non-graded clinical evaluation. In qualitative research, the sample size is decided by data saturation. Saturation of data was achieved after no new information was obtained through additional sampling as highlighted by Creswell (2013) and Seale (2013). The data for the study was collected from 10 faculties. The instrument used was "Demographic data collection format" to obtain the demographic distribution of data of the participants and the "self-reported questionnaire" to obtain the data about the topic under study. (Appendix:II and III)

The researcher followed the process for data gathering as suggested by Moustakis (1994 in Creswell, 2013) where two main research questions were asked to the nursing faculties, who were available and willing to participate in the study. Self-report data was gathered by means of these faculties' reflection of their lived experiences. According to Polit and Beck (2014), self-report data enables the researcher to know what people think, believe or feel, by asking directly about their perceptions, attitudes, beliefs, feelings, motives, plans, experiences, knowledge levels and memories. The two main questions that were asked are "What significant difference do you find while you evaluate the clinical performance of student in graded and non-graded method?" & "In your opinion, what were the perceived advantages and disadvantages of a graded, rather than a non-graded clinical evaluation?" The questionnaire that was used as an instrument for data collection was pre-tested on four participants. The tool comprised of two parts, namely

demographic data and written reflections. None of the participant expressed any difficulty in understanding the question or the aspect of their experiences sought regarding their clinical assessment of the students.

Results, Analysis and Discussion

Colliazzi's (1997) 7-step method (illustrated in Figure 2) was used to conduct the data analysis. Figure 2: Colliazzi's 7-step qualitative data analysis method, Reflections of the faculties were coded and presented in tables, which were used as a theme analysis. Theme analysis' ideas were further broken down, organized into categories and later into sub-categories. Within the categories uniting points of views and discrepancies, concerns, familiarity and conclusions among participants there viewed. This resulted to further subdivision of the categories into subcategories. Categories and sub-categories were grouped together to form themes. Data analysis in qualitative study occurs simultaneously with data collection to determine data Saturation. Data saturation was achieved after the reflections of 10 participants, According to Colaizzi, he suggests a seven-step procedure that consists of the following: (a) reading all descriptions given by the participants, (b) returning to the protocols to extract significant statements, (c) formulating meanings of significant statements, (d) organizing formulated meanings into clusters of themes, (e) integrating the results, (f) formulating an exhaustive description of the phenomenon, and (g) validating the findings with the participants. These seven steps are interrelated and the sequencing can be flexible. Colaizzi presents guidelines for each step of this method of analysis. As follows

Reading all descriptions. Colaizzi recommends that the researcher should first carefully read the descriptions to understand the feeling of them.

Extracting significant statements. When the readings are complete, Colaizzi recommends a return to the descriptions to extract principal statements that directly relate to the subject of interest and noting any comments that are repetitive.

Formulating meanings of significant statements. During this step, the researcher would use his insight to comprehend the meanings of the statements mentioned by the participants'. These formulations must "discover and illuminate those meanings hidden in the various contexts and horizons of the investigated phenomenon" (Colaizzi, 1978, p. 59).

Organizing formulated meanings into theme clusters:

Colaizzi recommends aggregating the verbatim forming the meanings for them and them forming them into clusters of themes. This step of the method is divided into two parts: (a) checking the completeness through comparison with the original transcripts and (b) identification of variations or contradictions among the themes.

Integrating the Results

The researcher integrates the results at this point into an exhaustive description of the topic. Formulating a description of the fundamental structures of the phenomenon.

Formulating an exhaustive description & validating the findings with the participants:
Formulate an exhaustive description of the fundamental structures of the phenomenon of interest as a statement that is as unequivocal as possible.

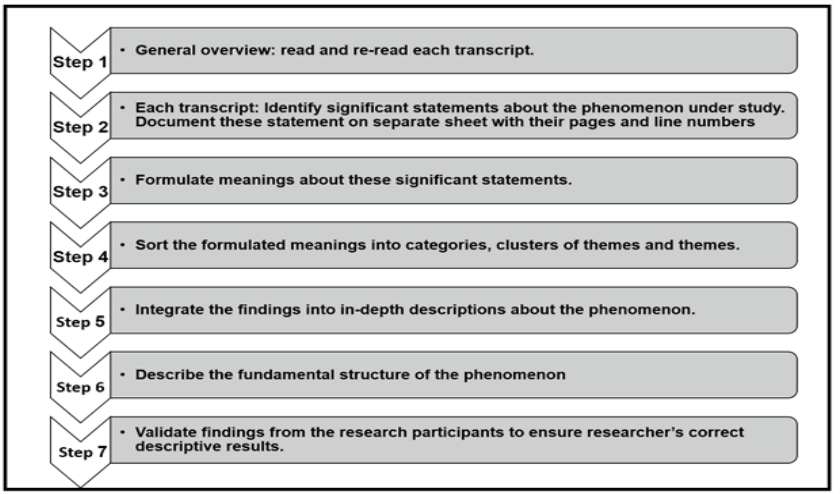

Figure 2: Colliazzi's 7-step qualitative data analysis method

Findings

The study participants were 10 faculties, among them, six were female and four were males. The themes were "motivation, facilitator aspects, student performance and holistic evaluation. The themes, categories and sub-categories are mentioned in Table 1.

Categories/ Themes	Sub categories	Participants verbatim
Motivation	• Pseudo motivator	• The evaluation tool does not provide any false motivation unlike the graded ones
	• Monetary benefits	• Students might be motivated to perform to their best as score is linked to GPA (GPA means money)
	• No motivation	• Students don't have any motivation in terms of if I do this I will get this.
	• De motivation	• Students don't need to achieve a good score- this might lead to demotivation and doing
Scoring	• Clarity	• It is not clear for students, as to on what basis where they evaluated
	• Quantification	• Students cannot quantify their level of practice.
	• Scope of improvement	• The students do not know how good they are and do not know if improvement is needed. • Overall performance can be scored
Holistic Evaluation	• Skill evaluation	• to evaluate the skills graded is Good
	• overall picture	• Missing the overall picture if a checklist is used- Student nursing performance is hard to quantify in numbers (communication, attitude, etc.

	• Personal traits	• Can describe special type of students' performance such as attitudes better than the graded one.
	• Missing elements	• Difficult to summarize all what a student nurse should know in a checklist- Always missing out on key elements
Facilitator Aspects	• Overall performanc e	• Allows the facilitator to observe the overall performance of the student
	• Dual role	• Dual role of clinical facilitator in clinical practice might make scoring difficult: when do we teach and when do we assess?
	• anecdotes	• Anecdote notes are hard to write- more dedication of the facilitator is required-
	• observation	• To write anecdote notes students need to be observed a lot which is time consuming and requires a low student to facilitator ratio
Student performance	• learning	• Opportunities for learning
	• impression	• Trying to impress the facilitator to get higher score might influence their learning experience
	• Self-directed learning	• Encourages self-directed learning
	• Stress	• Additional stress factor for student • Students can practice and are not under stress to perform well rather learn from the experience • Less pressure- students ask more questions and seek clarifications

	• competition	• Encouraging rivalry between students- not necessary in line with the ethos of nursing
	• uniqueness	• There is no uniqueness of the student as per their performance, everyone are the same.

Discussion

Four themes were identified from the data analysis, which included motivation, facilitator aspects, student performance and holistic evaluation. The most commonly reported perception was that the non-graded clinical evaluation tool was not very good in terms of providing the required motivation to the students. Motivation was identified as the main factor for discussion for each of the faculty about the non-graded clinical evaluation. Various sub themes or sub categories emerged out of the verbatim which is "Pseudo motivator", "Monetary benefits", "poor motivation", "De motivation".

"*Can describe special type of students' performance such as attitudes better than the graded one."*

"*The major disadvantage is that it results in unmotivated group members. Especially with the quality of students that we have, they need marks to become more initiative to learn and practice."*

"The evaluation tool does not provide any false motivation unlike the graded ones"

"Students might be motivated to perform to their best as score is linked to GPA (GPA means money"

"Students don't have any motivation in terms of if I do this I will get this".

"Students don't need to achieve a good score- this might lead to demotivation and doing"

Loretta (2013) affirms that the evaluation should also provide subsequent motivation, which will drive the student to perform better. In regard to the students' performance, it was found that many of the faculties have expressed that the students who have had a self-motivation, or self-directed learning, in regard to the program or the course, may be the non–graded evaluation will be able to help the student to achieve the clinical objectives, whereas the others need a carrot, which are the grades as the motivating factor to move on. Which is exhibited by the following expression of the faculties.

"It provides limited scope and Opportunities for learning"
"Trying to impress the facilitator to get higher score might influence their learning experience"
"To a certain extent, it also encourages self-directed learning"
"Additional stress factor for student"
"Students can practice and are not under stress to perform well rather learn from the experience"
"There is no uniqueness of the student as per their performance, everyone are the same".

There was also a mention of the subjectivity in using the non-graded pass or fail clinical evaluation tool that might influence the student largely. Which was supported by (Gill et al., 2006; Krichbaum et al., 1994; Rooda & Nardi, 1989) Clinical evaluation challenges included evaluator subjectivity, evaluator bias, and misinterpretation of standards by both students and faculty, and the recognition that clinical practice is complex, random, and contextual.
The faculties expressed that another big drawback in using the non-graded clinical evaluation tool, there is a huge responsibility to observe the students thoroughly, maintain anecdotal notes for each student about each domains that needs to be assessed on. This is a difficult task as expressed by many faculties, because the student and faculty ratio is 1: 6-7.

"*Anecdote notes are hard to write- more dedication of the facilitator is required"*
"To write anecdote notes students need to be observed a lot which is time consuming and requires a low student to facilitator ratio".

The clinical experience is considered as the focus for the student and teacher. It is considered as the heart of the curriculum. Studies that were undertaken in the western world recommends using the non-graded pass or failing clinical evaluation tool. But as per the perceptions of the faculties, it is observed that they fell that the students in the UAE, until they reach the momentum of self-directed learning, it is advisable to have the graded clinical assessment tool and then in the future may be there would be scope to move from the graded to non-graded clinical evaluation policy.

Lincoln and Guba's (1985 in Polit & Beck, 2014) five criteria to establish trustworthiness of qualitative inquiry, was utilized in this study. These criteria include credibility, dependability, conformability, transferability and authenticity. Guba (1981) argued that all research, whether it

quantitative or qualitative, must consider the truth-value or "trustworthiness" of the findings within the context of the study. According to Guba and Lincoln (2000), peer debriefing, triangulation, and member checks are strategies that can enhance the credibility of a phenomenological study.

When considering the applicability of the findings, the researcher tried to identify the degree to which the Findings of the study may be "applicable" in other contexts or with other respondents (Guba & Lincoln, 2000). The use descriptions that is more explanatory enhance the applicability of the findings to other similar contexts (Guba & Lincoln, 2000). The ethical principles described by Polit and Beck (2014) were adopted in the study. The ethical and legal clearance were obtained to perform the study and Informed consent were obtained from the faculties who participated in the study.

Conclusion

The findings from this study would provide nursing administrators to re visit the policy on clinical evaluation. It will also provide the nurse educators with guidance to have a closer look at their own clinical evaluation tool and process. Ensuring that the nursing institution are able to produce a competent to practice registered Nurse is a social responsibility. A clear, effective, and efficient policy on clinical evaluation provide a huge share in achieving this goal. The data was collected from the faculties of one educational setting. The inclusion of faculty from other local universities & students who have been evaluated by both graded and the non-graded clinical assessment tool would have definitely reinforced the findings. This would have enhanced the generalizability of the findings.

Insights and recommendation for future research also arose from this study. For example, faculty commented that the timing of the mid clinical evaluation was inappropriate, and does not serve the purpose for the short clinical rotation. Also particularly for students who have 12-hour (versus 8-hour) clinical shifts. Recommendations includes, should the clinical facilitator also play the role of clinical evaluator and does the dual role really add value to the clinical evaluation of students. Studying the merits of written, mid clinical evaluations as well as researching whether different

clinical evaluation tools based on the clinical objectives should be developed for different clinical rotation for the students enrolled in different courses.

This study is the first of its kind to review the policy about the clinical evaluation among the nursing students' policy in UAE and to report the faculties' perception about the policy in use. (UAE). The findings of this study validate the need to have a graded clinical assessment that would greatly influence the learning of the students with significant improvement in their motivation and observable performance that is improve and enhanced by the motivation.

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APPENDIX I

RESEARCH PARTICIPANT INFORMED CONSENT

STUDY TITLE: clinical placement experience at Fatima College of health sciences, UAE

PRINCIPAL INVESTIGATOR: Annie Rosita

Dear participant,

You have been identified as one of the baccalaureate-nursing student / faculty to take part in the study. Give your feedback and perspective about the policy on clinical assessment, which is non-graded (pass or fail)

The purpose of the study is to analyse and evaluate the policy, understand the experiences and to establish and intervention which would empower undergraduate nursing students during their clinical experience. This consent form explains the research study and your part in the study. Please ask questions at any time about anything you do not understand.

Please note that
You are a volunteer.

You can decide not to take part at any time. There will be no penalty or loss of benefits if you decide to quit the study. You may ask the researcher to explain any words or information in this informed consent that you do not understand. Ethical committee of Fatima College of health sciences has rules to protect information about you and protect your privacy.

The data collected from you during this study will be analysed as per the objective of the study. The data are important to both this study and to future research in nursing education.

Section A- Demographic information

I hereby consent to participate in the study and provide my feedback about the policy on clinical assessment.

_____ _____

Sign Date.

APPENDIX-II

Section –A

DEMOGRAPHIC DATA OF THE RESEARCH PARTICIPANT

Name of the student/ faculty: _____

FCHS ID No (for student only): _____

S: NO	ITEM CHARACTERISTIC	TICK THE APPROPRIATE ITEM.	FOR THE RESEARCHERS USE
1.Gender:			
A	Male		
B	Female		
2. Age in Years: (for student only)			
A	18- 20		
B	21-23		
C	24-26		
D	27-29		
3.level of academic study:			

A	BN2		
B	BN3		
C	BN4		
4. Marital status:			
A	Single		
B	Married		
5. Previous clinical experience:			
A	Yes		
B	No		
6. No: of Years of teaching experience :_____ yrs. (For Faculties)			
7. Others.			

Appendix III

Self-reported questionnaire

1. What significant difference do you find while you evaluate the clinical performance of student in graded and non-graded method?

1A.In your opinion, what were the perceived advantages and disadvantages of a graded, rather than a non-graded clinical evaluation?

The relationship between exposing young Emiratis to STEM education and their expectancy to pursue STEM career paths: Implications for STEM Policy in the UAE

Areej ElSayary

Introduction

The 21st century has seen a global shift toward a knowledge-based economy through promoting business, science, technology, tourism and other sectors. As a result, an inadvertent cause of disconnect between the education system and the work force has occurred (AlQasimi Foundation, 2012). In order to better contribute to the economic growth, there should be a focus on the quantity of education provision and on improving the quality of education. Behrman and Birdsall (1983) emphasized that the quality of education best clarifies differential earnings and productivity. Education is a process that leads to the development and increase of productivity and income (Schultz, 1970; Carnoy, 1967). Economists have defined efficiency to be the most output gained from a given level of input (Birkland, 2011). Moreover, microeconomics stated that the investment in education returns to the economy (AlQasmi Foundation, 2012).

Powell and Snellman (2004) stated that the knowledge-based economy is driven by innovation in technology and science, where the focus is on intellectual abilities. There has been an increase in developing the competitive and economic policies that support science and technology innovation and workforce skills (Schwalje, 2012). Accordingly, a plan was anticipated to invest around Dh300 billion to include legislation, technology, education and finance in order to build a vibrant knowledge-based economy.

However, the national investment related to this policy exceeded the approximate Dh300 billion distributed as the following: Dh128 billion on clean energy projects; Dh72 billion on the renewable energy sector; Dh40 billion in aviation research, development and manufacturing; Dh20 billion on the space sector; Dh31 billion to construct innovation indicators; and Dh6 billion to develop and conduct research centers (Allen & Knibbs, 2015). The budget allocation for education in UAE exceeds 20% of its total government budget and is higher than the UAE government's benchmark average of 13% (Byat & Sultan, 2014).

Problem Statement

The shortage of the UAE STEM (Science, Technology, Engineering and Math) workforce became a problem (Moonesar et al., 2015). The UAE ranked 48 out of 65 in mathematics in PISA tests that were conducted in 2012 (MOE, 2013). In comparison with OECD countries, UAE measured lower than the OECD average by 60 points (MOE, 2013). The report stated that UAE students are able to apply mathematical methods more than reasoning, interpreting, and reflecting on mathematical problems. In science, UAE ranked 44 out of 65 (MOE, 2013), which is 89 points below the average of OECD. The UAE students scored lower in the problem-solving skills (Moonesar et al., 2015).

These results come after a drop-in students' enrolment in STEM majors. There are 21% of students in government universities who were enrolled in STEM majors in 2014 (Moonesar et al., 2015). Of these, 31% were studying engineering and 61% were studying natural science and within this, 16% were females and 35% were males (Moonesar et al., 2015). Accordingly, secondary school curricula in the emirate of Abu Dhabi were reformed to focus on STEM subjects in 2015 (Moonesar et al., 2015).

Objectives and questions

Interestingly it is important to note that UAE's Vision 2021 aims to conduct a nation where Emiratis participate in building a knowledge-based and innovative economy. The purpose of this paper is to investigate and explain to what extent exposing students to STEM at a young age will affect their career choices. Further recommendations about policies, programs, and enterprises that will support Emirati students to become innovators will be highlighted. This study is focusing on the middle school students who are exposed to STEM education for two years and taught to the high school curriculum choices. The following research questions are used to fulfil the purpose of the study:

- What is the relationship between exposing young Emiratis to STEM and UAE's goal to become an innovation-based economy?
- What is the probability of students to continue in STEM career paths?
- To what extent are the young Emiratis expected to pursue the STEM-related fields?

Rationale of the study

After starting a new policy, the science, technology and innovation policy (STI) in November 2015, the country's focus is on science, technology and business innovation in order to accomplish a transformation of scientific progress in UAE. The president of UAE stated that it is a turning point toward a knowledge-based economy and prosperity, to shift from the dependence on oil (UAE Government, 2015; UAE Vision 2021, 2009). The policy stated that the essential enablers are; talent, investment and incentives, universities and supporting institutions, intellectual property and regulation; and partnerships and networks. The goal for the talents is to increase skilled Emiratis' participation in the STEM workforce at every level and enhance their research and development skills. The policy ambition is to increase the focus on STEM in all UAE educational institutes (Allen & Knibbs, 2015). The intertwined goal to the STEM is to create an innovative economy (Moonesar et al., 2015).

Theoretical Framework

There is a theory of motivation called "expectancy theory" proposed by Victor Vroom. It is a mental process of choosing that consists of three main factors: Expectancy, Instrumentality and Valence (Wigfield and Eccles, 2000). The expectancy theory of motivation aims to expect the engagement of students in learning through the expectancy factor because they are intrinsically motivated to be involved in the task given. The second factor is the instrumentality, which refers to the effort they put in to complete their task. Then, this will lead to the third factor, which is called valence. It refers to the value students gain from accomplishing the desired outcomes (Wigfield and Eccles, 2000). The cognitive process theory of motivation entails that individuals believe that there is a relationship between being motivated to put in efforts in order to complete their work, their performances they achieve through practicing several skills, and the values and rewards they receive (Lunenburg, 2011), which makes them continue in their routes. Educators should increase learners' beliefs that they are capable of performing the tasks successfully. As a first factor, it affects engaging learners in tasks where they can develop the desired skills and knowledge, then providing them with time and resources and assigning progressively more difficult tasks where they are challenged.

In addition, educators should increase the belief that a good performance will result in valued rewards (Lunenburg, 2011). As a second factor, students' performances can be monitored through measuring learners' progress accurately and how valued rewards are based on their performances. This is called compensation mechanism (Berger, 2009). Finally, educators should increase the expected value of rewards that result from the desired performance and how they will benefit from it in their lives (Lunenburg, 2011). Vroom proposed an equation that suggests a relation between these stages: Motivation = Expectancy x Instrumentality x Valence (Lunenburg, 2011). This equation means that the motivation comes with the multiplication of the three factors where the multiplier effect is significant. However, these factors lead to the motivation over a period.

On the other side, there is another theory of success that is called "trilogy". The assumption of the trilogy theory of success requires involving three main factors, Engagement, Capacity, and Continuity (ECC) to ensure students' success (Jolly, Campbell and Perlman, 2004). The presence of one factor is not enough, as it requires the presence of the three factors together to ensure students' continuity in the sciences and quantitative disciplines (STEM) (Jolly, Campbell and Perlman, 2004). The purpose of the trilogy theory of success is that the students' awareness, interest and motivation to be engaged in a task (engagement) will lead them to master the knowledge and skills required for the 21st century (capacity). By having the opportunities, resources and guidance, they will probably continue in their new paths (continuity). The ECC trilogy theory of success is similar to the expectancy theory of motivation. The difference is that motivation results from the effect of the three factors together over a period of time (Lunenburg, 2011) while the continuity of students' success occurs through the three stages of tasks that should be completed (Campbell & Jolly, 2014).

Conceptual Framework

The conceptual framework used in this study is developed by merging the expectancy theory of motivation of Wigfield and Eccles (2000) and the trilogy theory of success of Jolly, Campbell and Perlman (2004) where the two theories are complementary to each other. Figure (1) shows the

integrated framework used in order to address the research question of the study quantitatively and qualitatively.

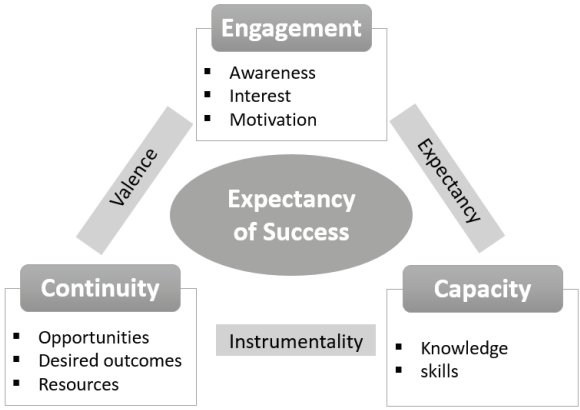


Figure (1): A conceptual framework developed by merging the Expectancy theory of Motivation with the Trilogy theory of Success

The expectancy theory is merged within the trilogy theory forming relationships between its stages (engagement, capacity and continuity). The first relationship between engagement and the capacity stages is the expectancy factor where the motivation and interest that allow students to be engaged in the engagement stage lead to the acquirement of knowledge and skills in the capacity stage. The second relationship is between capacity and continuity and is called instrumentality, where students acquire knowledge and skills in the capacity stage and putting efforts to mastering these skills will lead them to the continuity of learning in order to meet the desired outcomes. The third relationship, which occurs between the continuity and the engagement, is called valence, where students after meeting the desired outcomes and getting rewarded values from their performances will lead on to successfully being motivated to engage in other tasks. This forms the expectancy of success, which is expecting students to succeed in these careers by being involved in this process and providing them the factors that affect their continuity.

Science, Technology and Innovation (OECD, 2012)

Education policies aim to increase the individuals' skills and improve the education for innovation by teaching science, mathematics, and technology and attract people to STEM career paths (OECD, 2012). One of the major aspects to increase the quality and quantity of STEM education is increasing tertiary enrolment in STEM disciplines. Actions have been taken in Australia, Argentina, Denmark (2010-2012), Germany (2007-2013) and Sweden by providing financial incentives for students and offering free remedial classes or tutoring for marginal students (OECD, 2012). Another major aspect is improving instruction of science, technology and mathematics in schools through three paths. First, increase the hours of instruction, as in Germany, while Ireland reintroduced science into the primary curriculum in 2003 and Norway increased the hours of mathematics instruction in primary. Second, introduce new curricula, standards, or assessments. Australia, Ireland and England reformed national school curricula while Austria and Norway introduced new national tests; Poland made the mathematics exams mandatory at the Matura in 2010; and Germany provides early childhood STEM education.

Third, offering new teacher education and training programs as in Australia, Austria, Belgium, Ireland, Japan, New Zealand, Turkey, and the United Kingdom. Finally, attract top STEM graduates into teaching. Australia define this by "Teach for Australia" and the United Kingdom by "Teach First" (OECD, 2012). The recent policy trends in many countries aim to focus on innovation beyond the STEM education. Specific programs of entrepreneurship have been offered by schools and universities that tend to use learner-centred pedagogies and rich contents that are connected to real life. In 2009, Denmark formalized a strategy for targeting all levels in entrepreneurship education and ran a competition in 2010 to conduct an entrepreneurship university. Finland raised guidelines in 2009 for entrepreneurship education. In 2011, the national strategy of higher education in Ireland enhanced entrepreneurship training as part of curricula. An action plan 2009-2014 for entrepreneurship in education was developed in Norway. Moreover, developing a business is part of the business and economic studies in Norway and New Zealand. In addition, Belgium, Estonia, Germany, Luxembourg, Portugal and Slovenia have included entrepreneurship training in the school or university curricula (OECD, 2012).

Science, Technology and Innovation Policy in UAE (2015)

The science, technology and innovation (STI) policy is considered as a turning point toward a knowledge-based economy that aims to shift from the dependence on oil. The innovation inputs are based on the investment in institutions, human capital and research. However, the output is the creative and innovative products (UAE Vision 2021, 2009). The national innovation strategy is the umbrella of the science, technology and innovation policy. It aims that UAE becomes among the world's most innovative countries by the golden jubilee of the union (in 2021) by achieving the following: to be an innovative-friendly ecosystem; create an innovation culture; and focus on seven main sectors (renewable and clean energy, transportation, technology, education, health, water, and space) (UAE Government, 2015).

There are three main types of innovation: business, technology and science. The business innovation does not require scientific or technological expertise; however, it is significantly important to develop the entrepreneurship of individuals that leads them to the success of business innovation. Technology-based innovation requires subject expertise in computer science, electrical and mechanical engineering. Science-based innovation requires the highest degree of expertise and cooperation of scientists. It provides the highest return to the economy compared to the business and technology innovation. One of the important enablers of STI policy is talent, in order to have a skilled human capital who can lead an innovative nation. The goal of the talent enabler is to focus on strong STEM skills' development in all school years in order to achieve a high education outcome that will lead to a strong local STEM workforce.

Distribution of the STEM talent pool in tertiary education (OECD, 2015)

A projection of the number of people (25-34 years old) for OECD and G20 countries who have enrolled or will enrol in tertiary education in the period 2005-2030 has been reported (OECD, 2015). The number of young people with tertiary qualification increased by 45% between 2005-2013 in OECD and G20 countries and is expected to increase by more than 45% by 2030. The OECD countries in 2005 represented 60% of the tertiary qualifications of young people. However, in 2013 G20, countries filled the attainment gap that occurred and by 2030, it is expected to reverse

to be 70% of G20 countries. An interesting percentage is found in China and India that they make up 30% of the tertiary qualifications of OECD and G20 countries and are expected to keep growing in the next 14 years. It has been projected that by 2030 India will be raised from 14% to 23% of tertiary qualification held by young people while the European Unions and United States together will account for less than a quarter. The United States set a goal to have the highest percentage of college graduates by 2020. The European Union aims to have at least 40% of graduates in each EU country by 2020. Countries like Belgium, Denmark, Finland, France, Ireland, Netherlands, Spain, and United Kingdom had met this target by 2012. Moreover, China set a goal to have 20% of young people with tertiary qualification by 2020 and India's goal is to have a higher education enrolment rate of 50% by 2030.

It is interestingly important not to ignore the relevance of the skills needed for the labour market. An essential question should be raised: Does this enrolment of the workforce meet the needs of the labour market? From 2005 until 2012, the distribution of tertiary education graduates did not change. In OECD and G20 countries, STEM remained lower in enrolment than humanities, social sciences, law and education. Forty per cent of STEM graduates were in China, which is the highest percentage country while 45% were in humanities, education, law and social sciences. Respectively, India scored 35% for STEM and 53% for other fields. On the other hand, the OECD countries have three times more in humanity, social sciences, law and education than STEM graduates. It is projected by 2030 that China and India will comprise more than 60% of OECD and G20 STEM graduates. Actions have been taken in the United States to increase the enrolment in STEM fields by 1 million in 2022. Similarly, the European Union started a program called "science with and for society" in order to effectively conduct cooperation between science and society.

The UAE Vision 2021, (2009)

Innovation has an essential role in economic progress that has been reflected in the UAE Vision 2021. It highlights the science, technology and innovation as main careers of growth and progress to ensure sustainable development of the country. The UAE national agenda introduced many indicators to set as targets for the science, technology and innovation. The indicators include: UAE to become among the top ten countries in the Global Innovation Index; increase research and

development; increase the share of knowledge workers in the labour force by 40%; increase the enrolment in tertiary education; and to raise the rank of Emirati students in mathematics, science, and reading to become among the highest 20 countries in international standardized assessment (PISA) (UAE Vision 2021, 2009).

Strategic approach to education and skills policies in UAE

The Knowledge and Human Development Authority (KHDA) in Dubai has reported that in the academic year 2014/2015, the number of students who enrolled in higher education increased by 13.7% since 2013/2014 (KHDA, 2015). Moreover, that 24% of students are STEM graduates while 69% are business graduates in 2014/2015 (KHDA, 2015). The enrolment of the students as per the academic year 2014/2015 is 35% in STEM fields and 54% in business (KHDA, 2015). In the emirate of Abu Dhabi, there is a gap between the high number of graduates in humanity, administration, and law which are unneeded and low graduates in the field of medicine which is highly demanded (OECD, 2015). In a study by Moonesar et al. (2015), the students who graduated from UAE universities by 2013 were 46.9% from humanities, social sciences, management, and economics while 3% from medicine and health sciences majors. Dutta, Lanvin, and Wunsch-Vincent (2014) mentioned that 30% of students in higher education are studying business and economics while 14% are studying engineering and 8% studying sciences. The UAE had been ranked 15th on the education sub-pillar of the Global Innovation Index by 2013 which was an improvement over the 65th rank in 2011 (Dutta, Lanvin, and Wunsch-Vincent, 2014). Action has been taken to improve the quality of education and increase Emiratis' enrolment in the STEM fields by developing new curricula in the Abu Dhabi Educational Council that develops students' 21st century skills in lower age groups (Moonesar, 2015). In addition, higher education and research facilities were developed across UAE that include: Khalifa University of science, technology and research that begun to offer various engineering degrees; various international universities; Masdar Institute that established in 2007 in close cooperation with Massachusetts Institute of Technology (MIT); and New York University and the Emirate of Abu Dhabi, 2010, which offers science programs (OECD, 2015). Moreover, the government stated in the science, technology, and innovation policy the need for improving the career guidance (UAE Government, 2015).

The knowledge-based global economy aims to develop individuals' skills. The higher their skills the more chances they have of being in employment that leads to higher earnings. Getting the best return in investment requires a high ability of skills that is led by improving the quality and quantity of education. The UAE vision is to shift away from the dependence on oil to diversified economies led by Emirati people in the labour force and to become less dependent on non-Emirati experts (OECD, 2015). A strategic plan to enhance education and skills policies for UAE has been designed to use the OECD skills strategy conceptual framework that focuses on maximizing the use of skills in the country by three factors: developing relevant skills; activating skills' supply; and putting skills to effective use (2015).

The aim of this plan is to encourage learning, attract, activate and retain skilled people, and improve skilled-job match. Although UAE progressed higher in PISA assessment in the round of 2012 than in 2009 it still performs below the expected level in advanced economies. Accordingly, it is important to ensure that education is of high quality. Males in UAE seem to lack motivation, which forms a gender gap that creates problems for the national goal of "Emiratization". The Global Gender Gap report ranked UAE the first for female attainment (World Economic Forum, 2013).

Although the percentage of females who work outside the home is 27.5% compared to 62.5% of males who work, females took up entrepreneurial roles (Dutta, Lanvin, and Wunsch-Vincent, 2014). Promoting equity is important by ensuring access and success in the quality of education. One of the important things that has been mentioned as a goal in the STI policy is the focus on research and development. The investment in research and development is 0.01% of GDP, which is lower than the international standards compared to 2.6% in United States, 2.5% in Germany, and 3.3% in Japan (OECD, 2015). Finally, fostering entrepreneurship skills in UAE especially is important, as the national goal is to enhance the bottom-up development of the business branch. The World Bank's Doing Business report (2014) reported positive results of enhancing entrepreneurship in UAE as it is ranked 22nd in the ease of doing business.

Methodology

Research Approach: A mixed-method research approach is used in this study to include qualitative and quantitative data methods. The importance of integrating qualitative and quantitative data has been reinforced in the pragmatism philosophy (Johnson & Christensen, 2012). The data collected quantitatively and qualitatively were merged in the light of the framework developed for this study. The advantage of using a mixed-method approach is to benefit from the strengths of both methods and eliminate the weaknesses that might occur from one of them (Brewer & Hunter, 1989; Johnson & Turner, 2003).

Research Design: An embedded mixed-method is implemented to address the research question of the study. According to Clarke (2005), an example of this model is QUAN (qual). This means that qualitative data is embedded within quantitative data (Creswell, 2014). The results of the qualitative data are used to cross-validate and confirm the quantitative findings (Greene, Caracelli & Graham, 1989; Morgan, 1998; Creswell, 2009).

Site: The study was conducted in a private school in Dubai over two weeks where students received an online survey and data was collected after two weeks. Students' permission was taken prior to the study for ethical consideration and all data have been kept confidential (Beauchamp and Childress, 2001).

Participants: The population is the large group to which the results are generalized (Johnson & Christensen, 2012). The participants of the study were grade 8 students (n=200). The characteristic of the population was that all the students experienced the STEAM classes for two years. However, the stratified sample technique was used, in which a population is divided according to the gender into two groups called strata (Johnson & Christensen, 2012). As a result, the stratified sample selected was n=120. The sample of females is equal to the males, 60 students in each group.

Instruments: Students' surveys with closed-ended items of ordinal data (Likert-scale: strongly disagree, disagree, uncertain, agree, and strongly agree) and open-ended questions were used to fulfil the research questions of the study. The students' survey was designed for confirmatory and exploratory purposes (Johnson & Christensen, 2012) to understand the relationship between exposing young Emiratis to STEM and the UAE's goal to become an innovation-based economy. The survey consisted of demographic information and three categories of closed-ended items and open-ended questions. Descriptive statistics were used to describe the demographic information

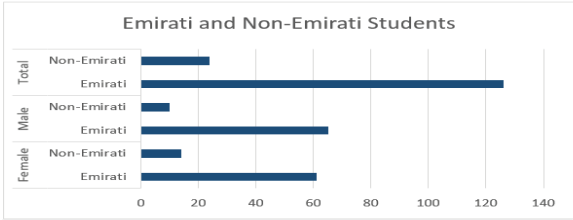
of students and the responses of males and females. Moreover, in order to address the first question of the study, the relationship between the non-continuous variables was measured. The Spearman's rho calculator was used as a non-parametric test to measure the strength and the relationship between the non-continuous variables of the trilogy model (engagement and continuity; engagement and capacity; and capacity and continuity). On the other side, the open-ended questions were designed to clarify results of the relationship between variables. They aimed to address the second question of the study. The open-ended questions were developed using the framework of expectancy theory of motivation. They focus on the transfer of: the effort they put to their engagement in their classes (expectancy); engagement to their capacity of desired outcomes (instrumentality); and their capacity of desired outcomes to their continuity to achieve their goals (valence). The results were merged together in the light of the conceptual framework that was developed by merging the two theories.

Results and Data Analysis

The results will be represented in four sections: demographic information; expectation of engagement; capacity of students' performance; and continuity to achieve UAE's goal.

Demographic Information

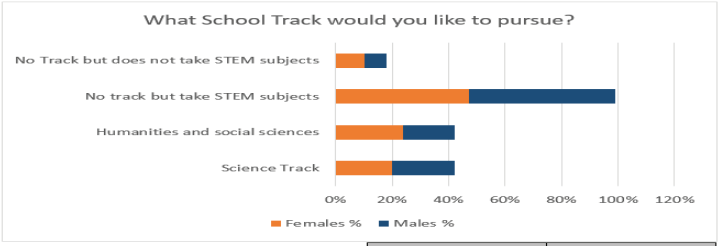
As the study is focusing on the expectation of Emirati students to succeed in STEM fields, the demographic questions were asking about their nationality, the school track they would like to pursue, English proficiency, and the intention to go to university. The number of Emirati students who took part in this study was 126 students (84%) while the non-Emiratis were 24 students with 16% of the total number of students. The non-Emirati students were excluded from the results because they were minors. Accordingly, the sample selected were equally males and females (60 students each). The graph below shows the percentages.



Emirati		Non-Emirati	
Males	Females	Males	Females
65	61	10	14
Total = 126		Total = 24	

Graph (1): The percentage of the Emirati and non-Emirati students who shared in this study.

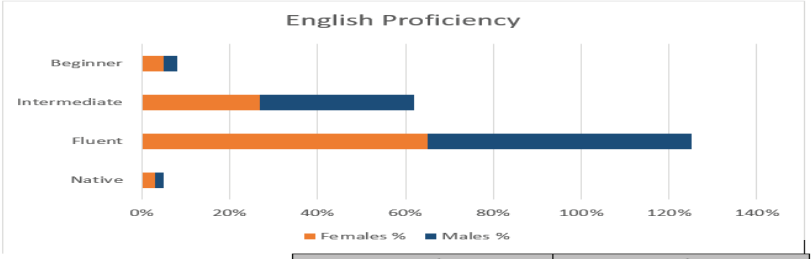
The next question asked students about the school track they would like to pursue. The percentage of students who chose the STEM track is 47% of females and 52% of the males. The students who chose the science track were 20% of females and 22% of males. The humanity track scored 23% of females and 18% of male students while the non-track is 10% of females and 8% of male students. Interestingly, the results of the total number of males and females who chose the science and STEM track is 70%.



		Females		Males	
#	Track to pursue	Response	%	Response	%
1	Science Track	12	20%	13	22%
2	Humanities and social sciences	14	24%	11	18%
3	No track but take STEM subjects	28	47%	31	52%
4	No Track but does not take STEM	6	10%	5	8%

Graph (2): The percentage of the males and females in choosing their school track.

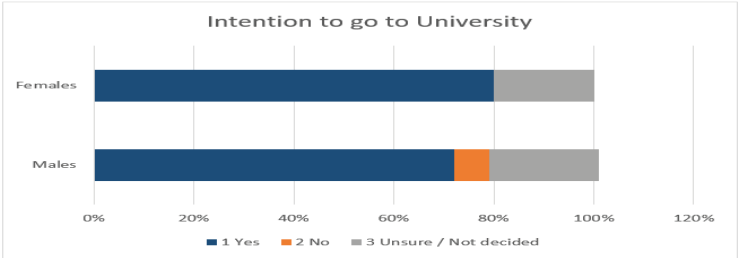
As shown in graph (3), the students' proficiency level in English language is 65% of females are fluent while 60% of males are fluent. An intermediate level in English proficiency was claimed by 27% of females and 35% of males.



		Females		Males	
#	English Proficiency	Response	%	Response	%
1	Native	2	3%	1	2%
2	Fluent	39	65%	36	60%
3	Intermediate	16	27%	21	35%
4	Beginner	3	5%	2	3%

Graph (3): The English proficiency level of males and female students.

The last question of the demographic information was asking students about their intention to go to university. The results show that 72% of male students and 80% of female students had decided to go to university. Those who wrote No were 4% of males and 0% of females, while 22% of males and 20% of females had not decided yet.



		Males		Females	
#	Intention to go to university	Response	%	Response	%
1	Yes	43	72%	48	80%
2	No	4	7%	0	0%
3	Unsure / Not decided	13	22%	12	20%

Graph (4): the intention of students to go to university.

Expectation of Engagement

The second category of the survey is the expectation of students in being engaged in the STEM classes. The items measured the relationship between the engagement and the capacity (expectancy) using a Spearman's rho correlation and qualitatively using an open-ended question. The analyses in table (1) showed a very strong positive correlation between engagement and capacity where r_s=0.931, $p<0.05$ with 87% of variation in engagement and capacity (knowledge and skills). The highest mean (4.5) in both males' and females' responses shows their interest in the work that allows them to help their community. The item in males' responses that shows interest in designing, building and repairing things has the same mean value. The lowest standard deviation is 0.72 for males and 0.63 for females in the first item (see Appendix C). All the students, even those who did not choose the STEM or science tracks, showed interest in the STEM classes, which led them to have a good performance. Students stated that they found STEM classes fun especially when they had the role to research, plan and lead their learning journey.

Capacity of Students' Performance

This category measured the relationship between the capacity and continuity (instrumentality) quantitatively by finding the correlation coefficient and qualitatively from an open-ended question. Again, there was a strong positive relation between capacity and continuity where r_s=0.922, $p<0.5$ with 85% of variation in capacity (skills and knowledge) and continuity in the STEM fields (see table 1). The highest mean is 4.45 with males for the item that science and/or math is an easy subject while the highest mean with females is 4.40 and SD=0.69 in the item that shows interest in using what they have learned to generate creative ideas and work. The lowest standard deviation in male responses is 0.74 where they feel technology and engineering are easy when integrated with science and math (see Appendix C). Students' responses to the open-ended questions stated that the STEM classes helped them to know new knowledge that is not targeted. They learn new things about careers that they did not know before. Some students mentioned that they had changed their opinions positively about their career choices toward STEM. Some students replied that they acquired skills such as presentation, planning, taking decisions at the right time, and improving their work whenever this was needed.

Continuity to achieve the UAE goals

The last category in the survey was to measure the relationship between engagement of students and their continuity in STEM careers (valence) in order to achieve the UAE goals. A strong positive correlation found with coefficient r_s=0.842, $p<0.05$ with 71% of the variation between engagement of students and continuity in the STEM field (see table 1). The highest mean in the males' responses is 4.36 where they know what career is best for them and their intention to share in EXPO2020 with new ideas, with the lowest standard deviation (0.72). The females' responses have the highest mean (4.37) where they would like to be innovative and share creative ideas in EXPO2020. The lowest standard deviation in females' responses is 0.77 where they know their choices of courses they should take in order to achieve their goals (see Appendix C). The last question asked students to explain how the knowledge and skills acquired from STEM classes would affect their career choices. Many students pointed out that the knowledge and skills acquired from STEM classes helped them to know the importance of each subject in relation to real life and their career choices. Some of students stated that they learned never to give up when they have an unsuccessful idea, as they will find a solution by continuing researching. However, some students stated that they wished they could have many elective courses for STEM career paths in high school.

Discussion

The data was collected from males and females equally. Originally, the percentage of Emirati males was slightly higher than the Emirati females by 4%. In addition, the non-Emirati students were minors compared to the Emiratis. Accordingly, results from non-Emiratis have been excluded and the sample selected from males and females are equal (60 students each). This is because of the main purpose of the study: to understand and confirm the relationship between the expectancy of Emirati students to continue in the STEM career paths. The percentage of the females who chose science and STEM tracks (67%) is lower than males (74%). This results are compatible with some studies that state the lower enrolment of females in some STEM fields such as: physical science, engineering, mathematics and computer science (Perez-Felkner et al., 2015; Levine et al., 2015; National Science Foundation, 2013; World Bank, 2012; Carnevale et al., 2011; Hill et al., 2010).

Most students' perception about themselves is that they are fluent in the English language, which is important because usually the language is an obstacle when learning scientific subjects. In addition, most students reported that they wanted to go to university and have a career path.

A statistically significant relationship was found between students' motivation, awareness, and interest (engagement) in STEM classes and their good performance in acquiring knowledge and skills (capacity). A study by Fredericks et al. (2004) reported that students' attitudes and interest affect the students' capacity and continuity in the same area. The descriptive statistics that were done on the survey items show the highest mean in the students' interests in the work that allows them to help the community. Even those students who did not choose the STEM track reported that they were interested in STEM classes that give them the opportunities to lead, manage their plans, research, and be involved in the problem-solving process.

The second significant statistics were found between the capacity of knowledge and skills acquired and continuity in STEM careers. The descriptive statistics mentioned that the item with the highest response is that they found science and math to be interesting subjects especially when they are integrated with technology and engineering which leads them to generate creative ideas. Students replied qualitatively that STEM classes allowed them to learn new things that are not targeted and gave them the opportunity to explore and understand the career paths. In addition, they stated that they knew how to present, plan, take decisions at the right time and make improvements to their work without feeling bored. These results are compatible with the studies mentioned earlier, that the students are likely to pursue STEM fields when they are exposed to them at a lower age (Perez-Felkner et al., 2015; Levine et al., 2015; World Bank, 2012).

The lowest relationship but also statistically significant was found between the students' motivation, interest, and awareness and their probability to continue in STEM fields. Several studies have pointed out that when students decide to probably continue in the field, they desire to have a curriculum that includes advanced mathematics and science, SAT/ACT (Lee et al., 1998; Barton, 2004), cross-curricular activities and after school programs (Miller, 2003). The highest responses came in the item that shows what career is best for them and the value of continuing in the STEM careers to benefit their society by sharing with new ideas in EXPO2020. The qualitative

responses of the students were that they knew the importance and utilization of each subject they learn when integrated and connected to real life and never to give up when they have a difficult problem. However, some students pointed out the unavailability of electives in the STEM track, which limit them in their career choices. Students expressed their desire to have available electives in the STEM track. The findings of the study clearly point to the efforts made and actions taken by the UAE government in focusing on developing Emiratis' scientific and technological skills. However, still further efforts should be taken in order to achieve the UAE goals and national agenda.

Conclusion and Recommendations

The purpose of this study is to understand the relationship between exposing students to STEM education at a young age and the UAE's goal to become a knowledge- and innovation-based economy. A conceptual framework that is an integration of the trilogy theory of success and the expectancy theory of motivation guides this study. A mixed-method was used to analyse the data quantitatively in order to describe the data and find the relationship between the factors affecting students to pursue the STEM career paths and qualitatively to clarify and explain the relationship between factors. The results show that the younger age at which students are exposed to STEM education, the more is the probability they will choose the STEM career paths that lead to the success of the science, technology and innovation policy in achieving a knowledge-based economy.

It is highly recommended to provide special funds for STEM education in order to have an innovation and knowledge-based economy. The macroeconomists stated that there is a dominant positive return to investment in education (AlQasimi Foundation, 2012). In addition, a great focus of reforming the curriculum should be taken into consideration to allow the cross-curricular link between subjects and mapping of the curriculum horizontally. STEM labs and resources should be provided in all schools to improve the quality of learning in addition to teacher training programs in delivering STEM in an innovative way that allows students to generate new ideas and inventions. Moreover, providing extra-curricular activities that allow them to practice the STEM projects should be considered.

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1. Appendices

Appendix (A): Students' Survey

School Permission

Date: March1st, 2015

Dear Principal

The British University in Dubai offers a Doctor of Education (PhD) degree. The PhD program is designed in collaboration with the School of Education of the University of Glasgow, one of the leading schools of education in the UK. The PhD program is approved and accredited by the Ministry of Higher Education and Scientific Research; UAE has graduated many students since its start in 2005 in several different areas in education. The purpose of this letter is to kindly ask you to allow "Areej ElSayary" a student in this program, to be able to make visits to your school, to conduct a research by asking for adequate times as would be agreed by leader(s) and our student. As I receive your permission, Survey's link will be sent to grade 8 students.

The information collected from the students' survey visits will be kept confidentiality and will be used in this research only. We kindly request your assistance in order to conduct the visits to the school for the research purpose only. Finally, we look forward to your kind cooperation. For further queries don't hesitate to contact: Ms. Nadia Victor, email: nadia.victor@buid.ac.ae,

Thank you for your cooperation in this academic endeavour.

Best Regards,

Areej ElSayary

areej.elsayary@gmail.com

March 2016

To Whom It May Concern

My name is **Ms Areej ElSayary** – Student ID **2015121056** who is a registered student on the **Doctor of Education** Program (following the pathway in **Management, Leadership and Policy**) in The British University in Dubai, from September 2015.

With this regard, I have designed a study to "The relationship between exposing young Emiratis to STEM education and the expectancy to pursue the STEM career paths"**.** I would like to have your permission to contact the students. As your permission is taken, grade 8 students will be given the survey.

The information collected from the students' survey will be kept confidential and will be used in this research only. We kindly request your assistance in order to conduct the visits to the school for the research purpose only. For further queries do not hesitate to contact: **Ms. Nadia Victor**, email: nadia.victor@buid.ac.ae, Thank you for your cooperation in this academic endeavour.

Best Regards,
Areej El-Sayary
Areej.elsayary@gmail.com
March 2016

Appendix B: Students' Survey

The following questions are asking about the students' engagement, capacity, and continuity of STEM careers. The survey consists of the demographic information, closed-ended questions using Likert-scale (Strongly disagree, disagree, neutral, agree, and strongly agree), and open-ended questions.

Demographics

What is your name? (Optional)

What is your Nationality?

Emirati Non-Emirati

What is your Gender?

Female Male

What School Track would you like to pursue?

- Science track.
- Humanities and social sciences.
- No track but take STEM subjects.

- No Track but does not take STEM subjects.

What is your English proficiency?

- Native.
- Fluent.
- Intermediate.
- Beginner.

What is your intention to go to university?

- Yes.
- No.
- Unsure / haven't decided.

The questions in this survey relate to the level of your motivation, expectation, engagement, capacity and continuity in learning. Please tick (√) the choice that matches your perceptions.

To what extent do you agree with the following tasks?

SD = strongly disagree D = disagree UN = uncertain A = agree SA = strongly agree

Expectation of Engagement: how well do you agree about the following tasks?						
#	**Items**	**SD**	**D**	**UN**	**A**	**SA**
1	The work that allows me to help my community or society is interesting.					
2	I like to learn to use computer software and learn how things work.					
3	An activity that allows me to take things apart and try to figure out how it works is interesting.					
4	I try to consider different points of view and different solutions to problems.					

5	When I do not know what to do on a creative project, I use specific methods to get started.					
6	Things that allow me to design, build and repair are interesting.					
Expectancy Do you expect to achieve good performance in STEM tasks? Explain						
Capacity of performance: what is your perception in the following?						
7	Science is easy even when it involves math.					
8	Science and/or Math is an easy subject.					
9	Technology and engineering are easy when it involves math or science.					
10	I can use what I know to design and build something creative that works.					
11	Solving design problems is easy in technology and engineering.					
12	Discuss the results from their experiments, activities, or projects.					
Instrumentality Explain in your opinion, how your engagement in STEM classes will help you gain skills and knowledge?						

Continuity to achieve the UAE goals: how well do you agree in achieving the following?						
13	In relation to STEM careers, I know what career would be best for me.					
14	I would like to be innovative and share new ideas in the EXPO 2020.					
15	I have already worked in the career areas that interest me in extra-curricular activities.					
16	I know education choices and schedules that I must make in order to reach my career goal.					
17	I am aware that STEM career choice and development will be a lifelong process.					
18	The STEM resources available to me are enough to meet my needs.					

Valence

Do you think acquiring STEM skills and deep knowledge will affect your career choices? Explain

Appendix C: Students' Survey Results

Correlations

			Engagement	Capacity	Continuity
Spearman rho's	Engagement	Correlation Coefficient	1	.931**	.842*
		Sig. (2-tailed)		.007	.035
		N	120	120	120

Spearman rho's	Capacity	Correlation Coefficient	.931**	1	.922**
		Sig. (2-tailed)	.007		.009
		N	120	120	120
Spearman rho's	Continuity	Correlation Coefficient	.842*	.922**	1
		Sig. (2-tailed)	.035	.009	
		N	120	120	120

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

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

Table (1): the correlation coefficient of the relationship between: engagement and capacity; capacity and continuity; and engagement and continuity.

Descriptive statistics of the Survey items

Engagement (Males)

#	Question	Mean	Standard deviation	Variance
1	The work that allows me to help my community or society is interesting.	4.5	0.72	0.53
2	I like to learn to use computer software and learn how things work.	4.45	0.83	0.69
3	An activity that allows me to take things apart and try to figure out how it works is interesting.	4.43	0.74	0.55
4	I try to consider different points of view and different solutions to problems.	4.18	0.91	0.83
5	When I do not know what to do on a creative project, I use specific methods to get started.	4	1.07	1.15
6	Things that allow me to design, build and repair are interesting.	4.5	0.89	0.8

Engagement (Females)

#	Question	Mean	Standard deviation	Variance
1	The work that allows me to help my community or society is interesting.	4.5	0.6	0.36
2	I like to learn to use computer software and learn how things work.	3.47	1.21	1.47
3	An activity that allows me to take things apart and try to figure out how it works is interesting.	4.3	0.79	0.62
4	I try to consider different points of view and different solutions to problems.	4.4	0.69	0.48
5	When I don't know what to do on a creative project, I use specific methods to get started.	4.07	1.85	1.17
6	Things that allow me to design, build and repair are interesting.	4.25	0.93	0.87

Capacity (Males)

#	Question	Mean	Standard deviation	Variance
1	Science is easy even when it involves math.	4.1	1.02	1.04
2	Science and/or Math is an easy subject.	4.45	0.83	0.69
3	Technology and engineering are easy when it involves math or science.	4.43	0.74	0.55
4	I can use what I know to design and build something creative that works.	4.18	0.91	0.83
5	Solving design problems is easy in technology and engineering.	4	1.07	1.15

6	Discuss the results from their experiments, activities, or projects.	4.23	0.87	0.76

Capacity (Females)

#	Question	Mean	Standard deviation	Variance
1	Science is easy even when it involves math.	3.68	1.07	1.14
2	Science and/or Math is an easy subject.	3.47	1.21	1.47
3	Technology and engineering are easy when it involves math or science.	4.3	0.79	0.62
4	I can use what I know to design and build something creative that works.	4.4	0.69	0.48
5	Solving design problems is easy in technology and engineering.	4.07	1.85	1.17
6	Discuss the results from their experiments, activities, or projects.	4.33	0.73	0.53

Continuity (Males)

#	Question	Mean	Standard deviation	Variance
1	In relation to STEM careers, I know what career would be best for me.	4.36	0.89	0.8
2	I would like to be innovative and share new ideas in the EXPO 2020.	4.36	0.72	0.52
3	I have already worked in the career areas that interest me in extra-curricular activities.	3.69	1.25	1.55

4	I know education choices and schedules that I must make in order to reach my career goal.	4.16	1.09	1.19
5	I am aware that STEM career choice and development will be a lifelong process.	4.21	1.03	1.06
6	The STEM resources available to me are enough to meet my needs.	4	1.12	1.26

Continuity (Females)

#	Question	Mean	Standard deviation	Variance
1	In relation to STEM careers, I know what career would be best for me.	4.29	0.74	0.55
2	I would like to be innovative and share new ideas in the EXPO 2020.	4.37	0.83	0.69
3	I have already worked in the career areas that interest me in extra-curricular activities.	3.54	1.22	1.49
4	I know education choices and schedules that I must make in order to reach my career goal.	4.31	0.77	0.59
5	I am aware that STEM career choice and development will be a lifelong process.	4.07	1.05	1.1
6	The STEM resources available to me are enough to meet my needs.	4.03	1.11	1.24

Inclusion policy: A quantitative case study at a primary school in Dubai

Haleema Abdul-Wahab Karout

Introduction

This research analyses findings on a study of the implementation UAE's Inclusion Policy. It evaluates respondents' perspectives on state of inclusive education in Dubai. The analysis is divided into five sections. The first section presents and analyses findings on respondents' perception on the quality of inclusive education and the usefulness of the inclusion policy document. The second section evaluates findings on efficacy of SEN provisions and stakeholder engagement in the process. The third section focuses on the main factors in support of SEN students. The fourth section analyses findings on the attitudes that shape provision of SEN education. The fifth section analyses findings on teacher awareness, ability of mainstream classes to handle SEN cases, and importance of resources in SEN education.

Problem Statement

The research field is in urgent need of extensive research, analysis, and theoretical frameworks which not only shed light on UAE Inclusion Policy but also leads to better understanding of how much important this policy and provision is for SEN students in Dubai. Annual inspection process and focus on quality of support given to SEN students constitute an on-the-ground reality for the research to address the UAE Inclusion Policy as a cornerstone in any school journey to improved performance. Due to the increasing cases of SEN students and to the increased focus on SEN provision in private schools in Dubai, this study is conducted with the purpose of identifying and analysing educators' perceptions, attitudes, and awareness of UAE Inclusion Policy.

Aim and Objectives of the Study

This study aims at identifying whether or not UAE's inclusion policy is received and actualized in one private school in Dubai and – on the off chance that is embraced and executed – targets investigating the usage to delineate what should be possible to progress right execution. The target of this research is, along these lines, to provide educators inside the setting of Dubai with a chance of obtaining a better understanding and knowledge of every aspect of teachers' levels of

engagement, mindfulness, and concerns in regards to inclusive education – particularly that they are in direct contact with SEN students according to their expected set of responsibilities.

Research Questions

There is a paucity in research conducted about SEN provision in Dubai where the views and input of SEN specialists, homeroom teachers, and learning support assistants are sought. Because of this dearth, it is difficult to decide on particular hypotheses about the adoption and implementation of UAE policy on inclusive education. Consequently, this study has, rather, offered five attention-grabbing research questions that the researcher endeavours to answer:

1. What is the stakeholder perception of inclusive education one of the private schools in Dubai?
2. What is the level of stakeholder engagement in SEN provision?
3. What are the factors supporting provision of SEN education?
4. What role does resourcing play in SEN education?
5. Can all types of SEN education be delivered in mainstream classes?

Here, the researcher aims to examine the views and opinions of educators who are in direct and daily contact with SEN students to find out the extent to which they are able to implement the inclusive policy.

Rationale of the Study

Policymakers could utilize the data coming about because of this study to outline powerful expert improvement and professional development programs on inclusive education – which could ingeniously build up the mindfulness and aptitudes of teachers in this area. The importance of this research rests in the eccentricity of the Dubai educational field, a field yearning for additional research on how comprehensive training in inclusive education can best accommodate to the needs of special needs students; in primary classes (Grades 1 to 5) specifically. Findings of this study may serve as a trigger to inspire other researchers to perform further studies, starting where this researcher had settled. As an outcome, policymakers might thus profit by the more noteworthy body of knowledge and availability of updated research to guide their choices and decisions and

work towards the advancement of the provision of inclusive education by procurement of comprehensive training and maintaining viable and sound practice in this domain.

Literature Review

Key Concepts

There is an approaching distress in the field of education largely about inclusive education and how learners with special education needs can be best served inside of the instructional framework of the mainstream classroom. The Salamanca Statement and Framework for Action on Special Needs Education (1994) confirmed that the pattern in social approach amid the previous two decades had been to advance inclusion and to battle exclusion. Consideration and participation are key to human respect and to exercise of human rights. Inside the field of education, this is reflected in the development of strategies that look to achieve a genuine balance of opportunity for all students to learn. While inclusive schools give a favourable setting, their prosperity requires a purposeful effort by all stakeholders. The reform of social foundations is not just a specialized undertaking but it is the responsibility and positive attitude of the people who constitute society. In 2006, the Ministry of Education designed a policy on inclusion according to which schools are required to create programs for students with special education needs under the procurements of the Federal Law No. 29/2006 regarding the Rights of Students with Special Needs, and under the standards and general principles of inclusive education programs.

Key Theories

Despite some changing attitudes and positive developments towards disability in the GCC and the wider Middle East, stigmatization of people with disabilities remains a serious issue. Westbrook and Legge (1993: 179) argue that ethnic groups from collectivist cultures such as Arabs primarily view the value of children in economic terms; hence, due to patriarchal notions, disability in sons is considered ‘particularly tragic’. Ashencaen Crabtree (2007a) notes that in her study of family perceptions in the UAE, disability in sons was often viewed as more disappointing to fathers, than that in daughters. Other studies confirm that the birth of disabled children is considered shameful and stigmatizing (Boukhari, 2007; Khamis, 2007; Sharifzadeh, 1998). Even the very term ‘disability’ can be overtly rejected in some quarters as unacceptably demeaning (bin Huwaidi,

2008). Ashencaen Crabtree (2007b) also notes this apparent idiosyncrasy, where in her study a mother of a wheelchair-using teenager with complex needs denies that he is actually disabled.

Review of Related Literature

Comparable with this perception, control inside of the family setting has been a typical component of life for some people of Arab legacy with inabilities (Ashencaen Crabtree, 2007b; Gaad, 2001; Westbrook and Legge, 1993). Siminski (2003), referring to Oliver (1996), recognizes the last's detachment of the issue of physical debilitation, from the lived, social experience of 'inability', regarding the burden of limitations towards individuals with special needs, and their expulsion from profitability and interest in community society. On the other hand, SEN teachers do not report utilizing successful instructional rehearses required for addressing the necessities of understudies with inabilities as oftentimes as anticipated. This implies understudies with incapacities in the UAE are not getting suitable training. There were no laws and regulations that represented the specialized curriculum field in the UAE. Furthermore, the states of mind towards students with learning disabilities and/or difficulties when all is said and done are negative (Alghazo et al., 2003).

According to KHDA Annual Report (June 2015), Dubai is resolved to wind up a comprehensive, boundary free society that advances, ensures, and guarantees the accomplishment of individuals with inabilities and special education needs (SEN). Setting up great quality school programs for students with SEN is a key stride on this adventure. The previous three years have seen an expanding concentrate on the investigation approach and reporting forms in regards to the nature of school procurement for SEN. Right now, just a minority of students have entry to a quality of procurement, which is great or remarkable. Senior leaders and governors in Dubai schools need to take quick and balanced action to empower others to enhance the general viability of procurement for understudies with SEN, so all have entry to great or better procurement. The weakest part of procurement for understudies with SEN was the nature of curriculum modification and support. Just 35% of schools did this well, whilst 24% gave unsuitable levels of modification and support, implying that SEN students were not ready to comprehend what they were being taught in their lessons. Giving continuous support for students with SEN is a serious test for schools in Dubai. Enhancing these two viewpoints are imperative steps that should be taken at this point.

The Context Studied

Since this study aims at determining the extent to which the UAE Inclusion Policy is understood and implemented in Dubai and to review the level to which the performance of a school can be affected by the implementation of this policy, choosing a school setting as a case study for this research is based on a number of reasons. The main reason is that the school is a stage where the future of most individuals is determined. Implementation of this policy at this early stage of life can end have a great impact on SEN students' lives. With this research, a solution is to be offered on how to cope with this policy, and this would have the effect of ensuring brighter future for SEN learners. Another reason is that the researcher has already been appointed with a senior leadership role in this private school. With the help of this study, the researcher will be able to determine pin down the different stakeholder's views regarding the implementation of this policy to reach expected levels of performance.

Research Approach

Undertaking research requires the use of qualitative, quantitative, or mixed-methods approaches. The methods then lend themselves to a single approach given the study's purpose. Identifying the research approach for communicating and explaining the research features in any study – whether in our out of the education field – is key to the success of any research, and usually the approach is either qualitative, quantitative, or mixed methods. Quantitative research methodology has been adopted for this research, and a five-point Likert Scale survey was used to gather data. The survey included ten objective questions and one general subjective question where respondents had to express any other opinion and/or concerns about SEN provision.

Research Design – Site, Sample, Instrumentation

For the purpose of this study, the private school in Dubai where the survey was conducted will be named after a flower and therefore referred to as "Rose School". Rose School is not a fully-fledged school. It encompasses the four phases such that Phase 1 includes 14 divisions of KG1 and KG2 classes, Phase 2 includes 19 divisions of Grades 1 to 5 classes, Phase 3 includes 4 divisions of Grades 6 to 8 classes, and Phase 4 includes 1 division of Grade 9 class only. Since the largest concentration of SEN students (more than 90% of SEN students) are in the second phase of the school, this was the phase were the questionnaire was conducted (12 SEN students study in this

phase at Rose School). All primary classes follow the homeroom instructional design; i.e. one English native-speaking teacher teaches all subjects where the medium of instruction is English, and since these homeroom teachers are in daily and direct contact with students – and SEN students in their classes – for the vast majority of the day, all 19 homeroom teachers were included in the selection.

Additionally, every SEN student at Rose School is scientifically assessed and the appropriate SEN case is identified in every SEN student's Individualized Educational Plan (IEP), then every SEN student works with his/her own Learning Support Assistant (LSA) inside and outside the classroom physical setting. Therefore, also all 12 LSAs were included in the selection. Furthermore, a specialized department: Student Support and Special Needs Department (SSSD) is headed by a specialized Special Educational Needs Coordinator (SENCO) overlooks the works of all LSAs with the help of two other members in this department who are appointed as Special Needs Teachers (SEN Teachers). Similarly, all three members of SSSD were included in the selection together with key academic leaders in this phase; i.e. Head of Primary Phase, STEMCO, and the Science Advisor were also included in the selection as they are also in daily and direct contact and coordinate with Homeroom Teachers and SSSD. The total is 37 participant who have cooperated and took the survey. Out of 37 questionnaires, 37 were complete and usable for this study.

The population for this study was professional educators who work with SEN students in one particular phase and are employed in one private school in Dubai. The reason for selecting this population is the fact that almost 90% of students with special needs are in this phase of the school; i.e. second phase or what is referred to as primary classes – Grades 1 to 5. The survey was conducted over a week near the end of the second term of the academic year. The Statistical Package for Social Science (SPSS), Version 11, was used to code and analyse the data from the questionnaire. As determined by the nature of data and direction of interpretation, standard deviations as well as correlation and descriptive analyses were used. An examination of out of range values and missing data exhibited that no out of range, values were entered and that for each variable the number of missing data was small. Significantly, none of the variables had missing data that surpassed 1 percent of the aggregate sample size. Further, examinations of these cases demonstrated that the missing values were dispersed in a random pattern throughout the sample.

It was consequently presumed that the limited number of missing data would not represent a problem as far as interpreting the results of this study.

The researcher based on the five created the survey instrument used for this research questions above (see Appendix A). It was then shared with the principal at Rose School out of courtesy and respect and for the principal's acquiescence to conduct this research at Rose School. Then, the survey was shared with the SENCO to validate the appropriateness of its language and the terminology used in regards to the selected population. Afterwards, the survey was shared with participants. It is worth mentioning here that – all Homeroom Teachers and LSAs filled paper-based questionnaires while the rest of the respondents filled the online version of the questionnaire via Qualtrics.com. Prior to answering questions, all participants were informed of the purpose of the study through an informative introduction shared with them on the soft copy and hard copy versions of the questionnaire.

Data Analysis and Discussion

In this section, the researcher presents the statistical results of the survey in the light of the five sections clarified in the introduction and in response to every question in the survey.

Section 1: Private School Inclusive Education in Dubai

Survey Question #1: How likely is it that you would recommend inclusive education in a private school in Dubai to a friend or family member who has a child with a learning difficulty or disability?

	Table 1	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Extremely likely	15	40.5	40.5	40.5
	Somewhat Likely	15	40.5	40.5	81.1
	Neither likely nor unlikely	2	5.4	5.4	86.5
	Somewhat unlikely	3	8.1	8.1	94.6
	Extremely Unlikely	2	5.4	5.4	100.0
	Total	37	100.0	100.0	

In order to determine perception of inclusive education, the study asked participants whether they would recommend inclusive education in a private school in Dubai to others. Table 1 above shows that significant majority (40.5%) is extremely likely to recommend and (40.5%) are somewhat likely to recommend.

Survey Question #2: Overall, how would you rate Inclusive Education in Dubai?

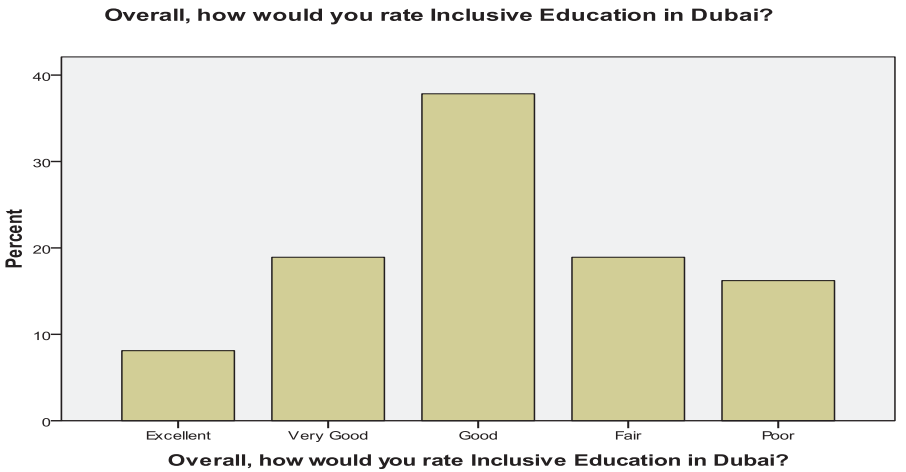

Figure 2: Second Section: Efficacy of SEN Provisions and Stakeholder Engagement

Figure 2 below shows how participants rated inclusive education in Dubai. It shows that a significant majority (64.9%) rated it as good (37.85%), very well (18.9%) or excellent (8.1%). Only 16.2 % of participants rated inclusive education in Dubai as poor. These results echo the finding in Table 1 where an overwhelming majority would recommend inclusive education in Dubai.

Survey Question #3: How helpful is the content presented in the UAE Inclusion Policy?

Table 3		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Extremely helpful	6	16.2	16.7	16.7
	Somewhat helpful	21	56.8	58.3	75.0
	Neither helpful or unhelpful	8	21.6	22.2	97.2
	Extremely unhelpful	1	2.7	2.8	100.0
	Total	36	97.3	100.0	
Missing	System	1	2.7		
Total		37	100.0		

This study sought to determine the usefulness and efficacy of SEN provisions and level of stakeholder engagement in the delivery of inclusive education. In this regard, respondents were asked how helpful the content provided in UAE inclusion policy is. Table 3 above shows that majority finds it somewhat helpful (56.8%) with 16.2% finding it extremely helpful. Only 2.7% finds it extremely unhelpful.

As concerns the level of stakeholder engagement towards improving the quality of special education, Table 4 above shows that an overwhelming majority of participants (88.9% with 43% indicating that they are extremely engaged) are engaged towards improving the quality of special education.

Survey Question #4: How engaged are you in improving the quality of special education at your school?

	Table 4	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Extremely Engage	16	43.2	44.4	44.4
	Somewhat Engaged	16	43.2	44.4	88.9
	Neither Engaged or Disengaged	3	8.1	8.3	97.2
	Extremely disengaged	1	2.7	2.8	100.0
	Total	36	97.3	100.0	
Missing	System	1	2.7		
Total		37	100.0		

Survey Question #5: To what extent do you think that SEN provision is working well in mainstream private schools in Dubai?

	Table 5	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Extremely Working well	5	13.5	13.5	13.5
	Somewhat working well	23	62.2	62.2	75.7
	Neither working or not working	6	16.2	16.2	91.9
	Somewhat not working	3	8.1	8.1	100.0
	Total	37	100.0	100.0	

On the subject of the efficacy of SEN provisions being used in mainstream schools, the majority of participants indicated that they find it somewhat working well (62.2%) (See Table 5). A total of 24.3% were either neutral or considered it not working.

Section 3: Factors Supporting SEN Students

This study also sought to examine the factors and elements that support SEN students in their quest for receiving their right in inclusive education. Respondents were asked to rate a number of factors which is as follows.

Table 6 below shows the results based on measures of central tendency. The lower the mean of the factor, the higher the factor was ranked. Recruitment of staff emerged as the most important factor with a mean of 3.02. It was followed by identification of students with special needs (3.17), curriculum modification having a mean of 4.47, and using specific instructional strategies with individual SEN cases followed with a mean of 4.33.

Descriptive Statistics

Table 6	N	Minimum	Maximum	Mean	Std. Deviation
Rank the following aspects of support for SEN students in order of importance Identification of students	36	1.00	8.00	3.1667	2.34825
Recruitment of staff	36	1.00	9.00	3.0278	2.27390
Curriculum modification and support	36	1.00	10.00	4.4722	2.57999
Training and learning support assistants	37	1.00	15.00	4.1081	3.23852
Working well with parents	36	1.00	10.00	5.6389	2.85009
Commitment of school leadership to the philosophy of inclusion	36	1.00	10.00	5.1111	3.37874
Using specific strategies with SEN cases	36	1.00	10.00	4.3333	2.84856
Individualized educational plans (IEPs)	34	1.00	10.00	5.8529	2.76485
Understanding challenges and barriers facing individual cases of SEN students	34	1.00	10.00	5.8824	2.81516
Monitoring, tracking and reporting on SEN student's progress and attainment	33	1.00	10.00	7.2727	2.97146
Valid N (list wise)	33				

Section 4: Attitudes that Shape Provision of SEN education

This study also sought to determine how certain types of stakeholder attitudes shape the type of provision for SEN students. The lower the mean the higher the mean score, the more helpful an attitude is. Table 7 shows that teachers attitude towards inclusion is the most the most helpful (with a mean of 1.35) followed by parental attitudes (with a mean of 1.4).

Descriptive Statistics

Table 7	N	Minimum	Maximum	Mean	Std. Deviation
To what extent do you think that the below attitudes towards disability and inclusion help shape the type of provision for SEN students Social and cultural attitudes towards disability	37	1.00	4.00	1.5946	.76229
Teachers' attitudes towards inclusion	37	1.00	2.00	1.3514	.48398
Parental attitudes towards inclusion	37	1.00	3.00	1.4054	.64375
Being well familiarized with the Policy of Inclusion in UAE	37	1.00	3.00	1.6486	.63317
Granting admission to SEN students into private schools in Dubai	36	1.00	4.00	1.6667	.82808
Valid N (listwise)	36				

Section 5: Resources, Teacher Awareness and Mainstream Classes

This study also required to understand how a number of factors such as availability of resources and teacher awareness impacted SEN students.

Survey Question #8: How informed are teachers of the needs of SEN learners in their classes at your school?

	Table 8	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	A great deal	6	16.2	16.2	16.2
	Alot	11	29.7	29.7	45.9
	A moderate amount	15	40.5	40.5	86.5
	A little	4	10.8	10.8	97.3
	Non at all	1	2.7	2.7	100.0
	Total	37	100.0	100.0	

Table 8 above shows respondents' perceptions of the level of teacher awareness as concerns the needs of SEN learners. Majority (54.1%) considers teachers to be either moderately (40.5%), a little (10.8%) or not informed at all about the needs of SEN learners. A total of 45.9% indicated that teachers were a lot or a great deal informed about SEN learners needs.

<u>Survey Question #9:</u> Do you think that all SEN cases (severe, moderate, or mild) can be included in the mainstream class?

	Table 9	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	definitely yes	4	10.8	11.1	11.1
	Probably yes	10	27.0	27.8	38.9
	might or might not	14	37.8	38.9	77.8
	Probably not	6	16.2	16.7	94.4
	Definitely Not	2	5.4	5.6	100.0
	Total	36	97.3	100.0	
Missing	System	1	2.7		
Total		37	100.0		

Apropos the extent to which SEN cases (severe, moderate, mild) can be included in the mainstream classes, the findings of this study are inconclusive with a majority of 38% indicating that it might or it might not be included. Only 10 per cent indicated definitely yes with 16.2% indicating probably not.

Survey Question 10: Do you agree with this statement: "The availability and use of high-quality resources including ICT and specialists (occupational therapists, audiologists, educational psychologists, and speech and language therapists) affects the quality of teaching and learning of SEN children"?

	Table 10	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Extremely Agree	23	62.2	63.9	63.9
	Somewhat Agree	12	32.4	33.3	97.2
	Neither Agree or Disagree	1	2.7	2.8	100.0
	Total	36	97.3	100.0	
Missing	System	1	2.7		
Total		37	100.0		

The study also pursued to investigate the importance of resources to the quality of teaching and learning amongst SEN students. An overwhelming majority of the participants (63.9%) extremely agreed that high quality resources are linked to quality teaching and learning. None of the participants disagreed (see Table 10).

As for the eleventh questions – which is a subjective question – where respondents were asked to express any further opinion, comment, or concern, the vast majority did not give any response except for two participants who expressed their belief that must more significance can be given to the SEN provision and that much can be done to accommodate the needs of SEN learners.

Key Findings

In general, and according to the above data analysis and discussion, the SEN provision at Rose School can be considered successful. The following findings can be reached accordingly:

1. Both parents and teachers' attitudes towards teaching and learning SEN students is positive.
2. There is a need in recruiting teachers with expertise and specialization in SEN education.
3. There is a need to put in place effective identification process of SEN students.
4. Teachers need increased awareness in SEN learners' needs.
5. Quality SEN resources are needed.

Conclusion

Implication of the Study

The SEN provision at Rose School can be considered successful; however, the following recommendations are given in order to advance the quality of the provision and expedite improvement in the areas below:

1. Bring about a change in teachers and parents' attitudes towards inclusive education and SEN students. This can be based on the fact that as the study sought to determine how certain types of stakeholder attitudes shape the type of provision for SEN students, it was concluded that teachers' attitude towards inclusion is the most helpful (with a mean of 1.35) followed by parental attitudes (with a mean of 1.4). This serves to show that attitudes or parents and teachers are most important variables in the teaching and learning of SEN students.
2. Give greater focus to be given on teacher recruitment and recruitment of candidates who have the necessary and quality background and experience in working within inclusive education context. Based on the findings of this study, recruitment of staff emerged as the most important factor with a mean of 3.02.
3. Put in place efficient and effective processes in identification of SEN students. Again, based on the research findings, identification of students with special needs was another important factor with a mean of 3.17 followed by curriculum modification having a mean of 4.47 ad implementing specific instructional strategies with a mean of 4.33.
4. Enhance teacher awareness about SEN learners' needs. This is based on the finding that the majority of respondents (54.1%) considers teachers to be either moderately (40.5%), a little (10.8%), or not at all informed about the needs of SEN learners (within their domains of responsibility).

5. Ensure the availability and use of high-quality resources including ICT and specialists (occupational therapists, audiologists, educational psychologists, and speech and language therapists). This is a very important recommendation as an overwhelming majority of the participants (63.9%) extremely agree that high quality resources are linked to quality teaching and learning. None of the participants disagreed with this (see Table 10).

Limitations

This study aims at analysing the implementation of UAE Inclusion Policy in a private school in Dubai – this in itself is a contextual limitation as the findings will be representative of what is happening within the boundaries of this school and might not apply to other private or even public schools in Dubai. Four major potential limitations to this research might be the following assumptions are:

- The researcher assumes that participants have sufficient information regarding the data to be collected.
- The researcher assumes that all participants will give out their honest and sincere opinion regarding the questions in the research.
- The researcher assumes that the sample size in the research is sufficient for the study and the results can be rolled out to the general view.
- The researcher assumes that the self-reported data collected in this study might present bias and disturb validity.

Scope for Further Research

Further school-wide / emirate-wide research is to be conducted to collect more data about successful implementations of the UAE inclusion policy in Dubai schools.

Claim and Conclusion of the Study

Based on the findings reported above, interpretations and conclusions are grasped based on the five research questions on which this research has been put together.

Research Question 1: What is the stakeholder perception of inclusive education one of the private schools in Dubai?

Answers and implications to this question are found in respondents' answers to the first and second questions in the survey. From the results, it serves to show that inclusive education in Dubai has received acceptance and vote of confidence from stakeholders (see Table 1). In overall, the findings indicate that inclusive education is on the right track in terms of stakeholder perception and quality of delivery (see Figure 2 for illustration).

Research Question 2: What is the level of stakeholder engagement in SEN provision?

Responses and inferences for this question stem from respondents' answers to the third, fourth, and fifth questions in the survey. In sum, the content of UAE inclusion policy document has largely achieved its objectives and majority of the participants find it useful and helpful (see Table 3). Additionally, findings reflect considerable stakeholder commitment towards successful implementation of inclusive education (see Table 4). As for the extent to which participants think that SEN provision is working well in mainstream schools in Dubai, the responses here can be interpreted as fair showing the uncertainty with implementation of SEN provisions in mainstream schools (see Table 5).

Research Question 3: What are the factors supporting provision of SEN education?

Regarding this research question, it was answered through the respondents' responses to the sixth and seventh questions. In essence, recruitment of appropriate staff, establishment of adequate processes for identifying SEN students, correct curriculum modification, and implementing specific instructional strategies for particular SEN cases are considered the most important factors (see Table 6). As for attitudes that support SEN provision, analysis of data for this item serves to show that attitudes of parents and teachers are most important variables in SEN students' outcomes.

Research Question 4: What role does resourcing play in SEN education?

Responses given to the tenth question in the survey provides insight to this research question in the sense that overall, all respondent agree that the appropriate resources which facilitate the teaching and learning of SEN students play a vital role in the education of these children

Research Question 5: Can all types of SEN education be delivered in mainstream classes?

The last research question is answered through Reponses given to the eighth and ninth questions of the survey where the findings of this study show that teacher awareness on SEN students' needs is mixed (see Table 8) and that these findings could serve to show that inclusion should be handled on a case by case basis (see Table 9).

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APPENDIX

Survey

Q1

How likely is it that you would recommend inclusive education in a private school in Dubai to a friend or family member who has a child with a learning difficulty or disability?

- Extremely likely
- Somewhat likely
- Neither likely nor unlikely
- Somewhat unlikely
- Extremely unlikely

Q2

Overall, how would you rate Inclusive Education in Dubai?

- Excellent
- Very Good
- Good

- Fair
- Poor

Q3

How helpful is the content presented in the UAE Inclusion Policy?

- Extremely helpful
- Somewhat helpful
- Neither helpful or unhelpful
- Somewhat unhelpful
- Extremely unhelpful

Q4

How engaged are you in improving the quality of special education at your school?

- Extremely engaged
- Somewhat engaged
- Neither engaged or disengaged
- Somewhat disengaged
- Extremely disengaged

Q5

To what extent do you think that SEN provision is working well in mainstream private schools in Dubai?

- Extremely working well
- Somewhat working well
- Neither working nor not working
- Somewhat not working
- Extremely not working

Q7

Rank the following aspects of support for SEN students in order of importance. (Most important aspect at the top; i.e. give number 1 to the most important aspect in your opinion)

- Identification of students with SEN
- Recruiting specialist staff
- Curriculum modification and support
- Training Learning Support Assistants (LSAs) sufficiently and appropriately
- Working well with parents
- Commitment of school leadership to the philosophy of inclusion
- Using specific strategies with specific SEN cases
- Designing Individualized Educational Plans (IEPs)
- Understanding challenges and barriers facing every case of SEN students
- Monitoring, tracking, and reporting on SEN students' progress and attainment

Q6

To what extent do you think that the below attitudes towards disability and inclusion help shape the type of provision for SEN students?

	Extremely helpful	Somewhat helpful	Neither helpful or unhelpful	Somewhat unhelpful	Extremely unhelpful
Social and cultural attitudes towards disability	○	○	○	○	○
Teachers' attitudes towards inclusion	○	○	○	○	○

	Extremely helpful	Somewhat helpful	Neither helpful or unhelpful	Somewhat unhelpful	Extremely unhelpful
Parental attitudes towards inclusion	○	○	○	○	○
Being well familiarized with the Policy of Inclusion in UAE	○	○	○	○	○
Granting admission to SEN students into private schools in Dubai	○	○	○	○	○

Q8

How informed are teachers of the needs of SEN learners in their classes at your school?

- ○ A great deal
- ○ A lot
- ○ A moderate amount
- ○ A little
- ○ None at all

Q9

Do you think that all SEN cases (severe, moderate, or mild) can be included in the mainstream class?

- ○ Definitely yes
- ○ Probably yes

- Might or might not
- Probably not
- Definitely not

Q10

Do you agree with this statement: The availability and use of high-quality resources including ICT and specialists (occupational therapists, audiologists, educational psychologists, speech and language therapists) affects the quality of teaching and learning of SEN children?

- Extremely agree
- Somewhat agree
- Neither agree or disagree
- Somewhat disagree
- Extremely disagree

Q11

Do you have any other comments, questions, or concerns about the Inclusion Policy in UAE or the quality of SEN provision in private schools in UAE?

Gifted and Talented Education Policy Analysis: A comparative study of the Gifted and Talented policies in the UAE, UK, USA, and Australia

Heba Daraghmeh

Introduction

One of the most developments in the educational field is the global reform. Education policies are being developed, changed, implemented, and reviewed in different parts of the world that they become having a universal shape. Verger et al. (2012) had referred to this situation as Global Education Policies (GEP). Other researchers have used different terminology such as Policy Diffusion, Policy Transfer, Policy Convergence, Policy Borrowing, or Policy Isomorphism to characterize the status. Studies about policy diffusion indicate how policymakers are affected by the experiences of others. However, Butler et al. (2015) concluded that policymakers tend to be affected more if a partisan competitor successfully implemented a policy elsewhere in the world. Local political interests may strongly distress the adoption of a particular policy (Stone 2001). Yet, willingness to learn from others' experiences is a driving force for policy diffusion. Similarly, Meseguer (2005) stated that mechanisms of policy diffusion stimulate rational learning. Policy transfer is another terminology used to describe the sequential spread of policies from one setting to another (Stone, 2001).

Policy Convergence is a term used to describe the development of a policy in different settings without necessarily sharing a common link between them. Egan (1998) pointed out policy conversion as a result of 'Standardization of standard-settings', which is the case in the educational context nowadays where emulation, harmonization, elite networking and policy communities, and penetration are distinguished as triggers of policy convergence (Colin, 1991). Phillips & Ochs (2003) suggested the use of the term 'Policy Borrowing' when the educational institute is dissatisfied of the current conditions referring to this as 'initial impulse'. Cross-national attraction, Decision, implementation, and internationalization are the stages described in his model admitting the inadequate use of the term 'borrowing' in literature. Gifted and Talented (GT) education is getting to take the same global model. It is becoming a mandate in many countries around the world including the gulf region particularly in the United Arab Emirates. Planning, decision-

making, funding, programming, and accountability are focal points for decisions makers and are key aspects to be considered when developing and implementing their policies. Hence, the need to study how GT policies are developed and employed to maximize the effectiveness of the different GT programs. Examples of how GT policies expanded are by convergence or by isomorphism. The development of the global schooling model led to the institutional isomorphism. Drenzner (2001) stated that policy isomorphism resulted from the expansion of the international model of schools. Meyer et al. (2013) stated that schools around the world reflected on their Program of International Student Assessment (PISA) results by policy convergence and policy isomorphism. Policy convergence happens when schools responded to those results with similar implementation of policies e.g. policies to enforce the use of the same curriculum. While in policy isomorphism, the reflections on PISA results might enforce a change in curriculum but not necessarily the same.

Problem Statement: The United Arab Emirates has initiated various programs for GT education. Both Ministry of Education (MOE) and Abu Dhabi Education Council (ADEC) stated policies to take care of gifted and talented students. However, compared to policies in other countries with vast experience in gifted education, there are still areas of improvements that would fill the gaps in the current policy.

Purpose of the Study: The researcher aims to compare the gifted and talented education policies in the United Arab Emirates, particularly ADEC policy to policies available in the United States of America (USA), United Kingdome (UK), and Australia (AU) using the baseline of the "Guide to State Policies in Gifted Education" published by the National Association for Gifted Children (NAGC). The researcher will identify the gaps, and propose amendments and/or addendums.

Research Questions

By conducting an in-depth review of the GT policies around the world, the researcher will try to find answers for the following questions:

- What are the global standards on gifted and talented education policies?
- What are the gaps existing in ADEC current policies for gifted and talented students? (if there are any)
- How can ADEC policies be improved to fulfil the gaps (if there are any), in order to ensure the international recognition and competitiveness?

Literature Review

The researcher explored more than forty research papers and specialized book and found that the development of the educational policies, development of a gifted and talented policy, and the components of gifted and talented policies are key aspects to serve the research.

Development of Educational Policies

Throughout the period after the Second World War, different studies were conducted to affect the formation of the educational policies in the UK and the USA. The diversified population of the USA schools led to advances in educational policymaking (Spodek & Saracho 2014). The huge growth of bilingual students produced a challenge to educators to develop and implement global educational policy models that would cater for the population needs on the federal and the states' levels. In the UK, the status seemed to be different. Chitty (2014) discussed various concepts related to the development of changing educational policy after the Second World War in Wales, Ireland, Scotland and England. The development of the Education Act in 1988 was driven by the writings and the speeches of economists and philosophers during that period. New policies were stated and implemented by the Policy Unit in Downing Street to not only prepare students for future jobs, but also help them excel cognitively to be better community members. Compared to USA and the UK, Australia gave a less social and political theorizing on educational policy (Fulcher, 2015). Policies were mostly driven from the Victorian educational apparatus. Researchers in Deakin University stated that the educational bureaucracy opposed the democratic objective of the Commonwealth written policy. Fulcher (2015) pointed out that educational policy should be made on different levels in response to the government policies in order to avoid further conflicts.

Development of a Gifted and Talented Education Policy

Purcell and Eckert (2006) stated that the interest in GT education started in the middle of the eighteenth century. Since then, researchers tried to make connections between the advances in the field and the historical turning points. Fluctuating interests were affected by the economical, technological, and ideological cycles. GT education became a major component of the educational reform. It has been mandated in many countries around the world and different initiatives needed rigorous policies to be translated into actions in schools and classrooms. Swanson (2007) stated

that understanding the impact of a policy would justify the policymakers' intention to change the practice. GT policies are found to be vital for the educational reform and thus, it is crucial to include aspects related to equity, curriculum, and grouping. Gifted education is found to be a key component of the modern global educational model. It is mandated in all states of the USA except for California, Missouri, North Dakota, Utah, Wyoming, Connecticut, District of Columbia, Illinois, Massachusetts, Michigan, New Hampshire, New York, South Dakota, and Vermont. Gifted programs are implemented and fully funded in Florida, Georgia, Iowa, and Oklahoma (Davidson Gifted 2017). According to the NAGC (NAGC 2017), although the USA federal government does not provide guidance or have requirements for gifted services, the Council of State Directors of Programs for the Gifted (CSDPG) established partnership with the NAGC to support the current projects.

As a result of this partnership, in 2014-2015 the State of the States in Gifted Education survey was conducted and a report was compiled highlighting several themes such as the diverse approach in gifted education across the states, the identification requirements for the majority of the states, funding types, forms of training for educators of GT students, and the significance of having a federal policy for gifted education that could benefit GT students, their families and GT educators as well. Varied policies existed for the different states. No consistent approach was noticed. Researchers produced different guides to write policies for gifted and talented. Vasilevska (2011) pointed out the significance of designing a unique policy for gifted and talented suitable to the school's context. Therefore, every school is responsible for the educational development of its students and yet accountable for designing proper learning environment (VanTassel-Baska, 2006).

Components of Gifted and Talented Policy

According to Lord and Swanson (2016), literature on gifted education lacks evidences about the impact of having a policy for gifted and talented. Yet, a positive influence is noticed in the states on gifted programs. NAGC (2016) suggested basic components of the policy that can be similar to the elements identified by Passow and Rudnitski (1993) as well as Van Tassel- Baska (2005), Purcell and Eckert (2006), Attfield (2009) and Gallagher (2014). Purcell and Eckert (2006) suggested that a good quality gifted and talented policy should maintain the following characteristics:

- A policy should be clear and easy to understand and interpret
- A policy should cover all outlined components based on standardized guidelines
- The components of the policy should be connected and logically related
- The policy procedures should be feasible and applicable
- A policy should be based on research and best practices in the educational field

The following are the main components of a GT policy:

1. Rationale and Goals
2. Identification
3. Program and Curriculum. This may include:
    - Grouping
    - Acceleration
    - Differentiated Curriculum and Assessment
4. Professional staff and Personnel Preparation

Rationale and Goals

Policy rationale and appropriate goals need to be clearly identified at the beginning of the document that would reflect the school's or the district's philosophy (Purcell and Eckert 2006; Vasilevska 2011). NAGC (2016) pointed out the significance of presenting a rationale, not only for the policy as a whole, but also for every component in it. Freeman (2008) stated that a rationale needs to tell why the policy is written, how it reflects the school's vision, as well as its targets. Similarly, the goals should inform why the policy is developed and what does it intended to achieve.

Identification

Identification procedures are considered the most critical step in a GT program (Purcell & Eckert 2006; Attfield 2009; NAGC 2016). Heller (2004) stated that in order to identify the GT children, four aspects need to be taken into consideration: what needs to be identified, what is the purpose of the use of a specific identification procedure, how can GT children be identified, and when is the best time to do that. Purcell and Eckert (2006) argued that an identification policy need to address the following areas: an operational definition of giftedness, clear identification of all

categories of giftedness, different criteria suitable for the different giftedness categories, a process of linking the identification procedure to the program a GT child will be enrolled in, and equitable decision making processes. Similarly, NAGC (2016) presented a comprehensive guide for identification procedures in a GT policy that should include an operational definition for giftedness and talent, use of multiple criteria for identification to prove the school's accountability far from referring to a single test score, use of adequate instruments that match the operational definition and are sensitive to the children's demographics, social, and economical backgrounds, allowing for placement options, addressing different abilities/intelligences, connecting between identification, curriculum, and later offered services, outlining decisions made upon identification, and providing an appeal procedure. Vasilevska (2011) suggested the use of checklists that can be utilized by the parents, teachers, peers and the GT child himself, in addition to an analysis of a product or a portfolio.

Program and Curriculum

A GT policy must identify various programming options for schools and districts (VanTassel-Baska 2005). Those programming options should match with the assessment instruments used for identifications. In addition to the inclusion of the academic, social, emotional, and career guidance as an essential constituent of the services provided within the program (Purcell & Eckert 2006). The NAGC suggested key elements of programming and curriculum policy for GT children as follows:

1. Grouping arrangements
2. Specific number of weekly contact hours for the gifted program
3. Description of the curriculum options
4. A link between the curriculum for gifted and talented and the national and international standards
5. Embedded higher cognitive skills within the curriculum of different subjects
6. Identification program modifications need for at-risk and highly gifted children
7. Social and emotional counselling
8. Definition of the program follow-up committees

Grouping

A wide range of options can be deliberated for the grouping component in a GT policy, ranging from differentiated instructions and a classroom flexible setting to having special classrooms and schools. VanTassel-Baska (2006) stated that a normal classroom setting would be less challenging for gifted children even with the differentiated instructions that may take place. Having special classrooms would expose gifted learners to a comprehensive experience and get a proper level of instructions. Archambault et al. (1993) pointed out that 84% of the class activities are directed to the whole class in a heterogeneous setting. According to the NAGC (2016) student's interests together with their abilities, social, and emotional need to be comprised in GT grouping policies. Therefore, grouping GT children worth noting when developing a GT policy.

Acceleration

VanTassel-Baska (2006), the founding director of the Center for Gifted Education at The College of William and Mary in Virginia, stated that schools claim to provide education for all learners. Nonetheless, many of them ignore the gifted ones who used to face no real learning challenges while sitting bored in the classrooms. A set of basic options need to take place in each school entitled to provide proper education for GT students. Considering time as a crucial variable in the learning process, accelerated learning should be an option for GT students. An acceleration policy should include different elements; an early schooling entrance, an early schooling exit, in addition to an early college entrance policy aligned with latter mentioned options. Another important element in an acceleration policy is the curriculum flexibility (Passow & Rudnitski, 1993, VanTassel-Baska, 2006) that offer students varied pathways suitable to their progression rates.

Differentiated curriculum and assessment

Curriculum and assessment should be differentiated and matched with the operational definitions. A differentiated curriculum should cater for all GT students' needs, which can be determined by a proper curriculum design. Learning outcomes should also be well constructed and provide enough depth and complexity for a GT child (VanTassel-Baska 2006). All aspects of curriculum differentiation should be included in a GT policy.

Professional Staff and Personnel Preparation

Teachers' minimum qualifications and qualities should be included in a GT policy. That may also incorporate a link to the national and international requirements (NAGC 2016). VanTassel-Baska (2006) stated a long list of critical requirements of GT teachers such as being life-long learners, critical thinkers, self-motivated, appreciating new learning, and being passionate about their subject area. In addition to the teachers' qualities, a GT policy should outline professional development policies and plans as part of the gifted programming standards. People involved in a GT program should receive an ongoing professional development opportunities that are implemented and mentored by experts in the field. According to Attfield (2009), the UK government had identified professional development as part of the lead teachers' role in a GT program

Program Management

The program management is accountable for the outcomes and is responsible for providing the intended service. Assessment and evaluation are significant aspects of the program management. Assessment refers to the systematic analysis of the services compared to the intended outcomes. While program evaluation is the process of generating data that can be used as a guide for decision-making (Callahan & Reis 2004). Appropriate evaluation questions need to be introduced based on new methodologies and phraseology techniques. The NAGC suggested that a GT program management policy should identify the following areas:

1. Nominations and identification procedures
2. Program requirements retained for each grade level
3. Objectives and expected outcomes for each programming model
4. Duration and timeline of each programming model
5. Student-teacher ratio in each programming model
6. Planning procedures
7. Training services for teachers engaged in the program
8. Counselling and guidance for teachers and students
9. Program evaluation procedures

Methodology

This research was conducted using the qualitative content analysis approach. Zhang and Wildemuth (2016) stated that in a content analysis research, a researcher attempts to generate theories to understand meanings behind physical messages. Selected content or text should inform the research questions and should provide unique themes. Likewise, Holsti in 1968 (cited in Cohen 2007) confirmed that a content analysis research could be conducted for different purposes; one of them is to describe trends in a content and to audit it against standards, which is the purpose of this study. Cohen (2007) and Creswell (2013) stated that documents could be used to transcript a phenomenon. Yet, other factors happening at the same time need to be taken into consideration. Policy documents are examples of the multitude forms of documents. However, they could be highly biased, as they were not intended to be used as research data. Therefore, validity and reliability of those documents are uncertain. Further aspects of validity and reliability will be discussed in a separate section below.

Data Collection

Guest et al. (2012) suggested two approaches for document analysis: Hypothesis-Driven (Confirmatory) and Content-Driven (Exploratory). In a hypothesis-driven analysis, the researcher determines the categories prior to reviewing the data and searching for occurrences of related text. A checklist may assist in the review process of the documents. Following a deductive orientation, specific coding needs to have a pre-set structure based on existing resources. Probability sampling should be used in this case. On the other hand; in a content-driven document analysis research, themes are identified while reading text. Following an inductive orientation, open-ended codes are derived from data. Either probability or non-probability sampling can be used. For answering the questions of this research, data was collected through a hypothesis-driven (Confirmatory) document analysis. This is an approach used to audit the content against predetermined standards (Cohen 2007). Official, published documents for GT policies for four states in the USA, GT policy of the UK, GT policy of Australia, were all compared to the GT policy for ADEC. Cohen (2007) suggested a list of questions that would be addressed when using such documents: what kind of document is being studied? What is it about? What was intended from creating such document? Who wrote it? And what were the interests of the document writer?

Data Sampling: Purposive sampling was used to choose the text needed for the study. Zhang and Wildemuth (2016) confirmed the use of intentionally selected texts, which can inform the research questions being examined.

Validity and Reliability: Validity and reliability determine the quality of the research in the conventional positivist model. However, the situation is different in a content analysis research and thus ensuring the validity of a qualitative research is challening (Bradley 1993; Creswell & Miller 2010). It was also argued by scholars in the literature that the validity of the documents used in a content analysis study is not viable as they were intended to be used for objectives and audience apart from the research purposes. Bailey (2008) confirmed that among the different forms of validity, face validity and construct validity could be ensured in a documents' research. A researcher needs to exhibit the credibility of the study. Therefore, a qualitative researcher need to look for credibility, transferability, dependability, and confirmability (Merriam 1998; Zhang & Wildemuth 2016). Credibility of the research can be improved by, but not limited to, peer review and triangulation. The researcher crosschecked the credibility of the data by triangulating the policy documents with the available records available on the official.gov websites i.e. websites with governmental domains. For example, the content of the website www.education.gov.uk was used to ensure a tie with the GT policy for the UK. Transferability is another aspect a researcher needs to confirm for a content analysis study. This refers to the extent to which the findings of the study can be applied to other context (Zhang & Wildemuth 2016). For this study, considering the wide range of research well thought out in the literature review, transferability can be confirmed. Likewise, to verify dependability and confirmability, the researcher continuously audited the research process and findings by following a consistent approach (Lincoln & Guba 1985).

Instrument: For a content analysis qualitative research, the researcher is considered the main instrument through examining the documents and generating themes and categories (Lincoln & Guba, 1985; Merriam, 1988; Creswell 2009).

Qualitative Data Analysis

Qualitative content analysis may include deductive reasoning (Patton 2002). Yet, the researcher had analysed the data based on the analyses of the available literature. It was hypothesised that a policy for GT should include the following components: rationale and goals, identification, program and curriculum, and professional staff and personnel preparation. A mind map was

created using the NVivo software to identify the link between categories and sub-categories as shown in Figure 1 below.

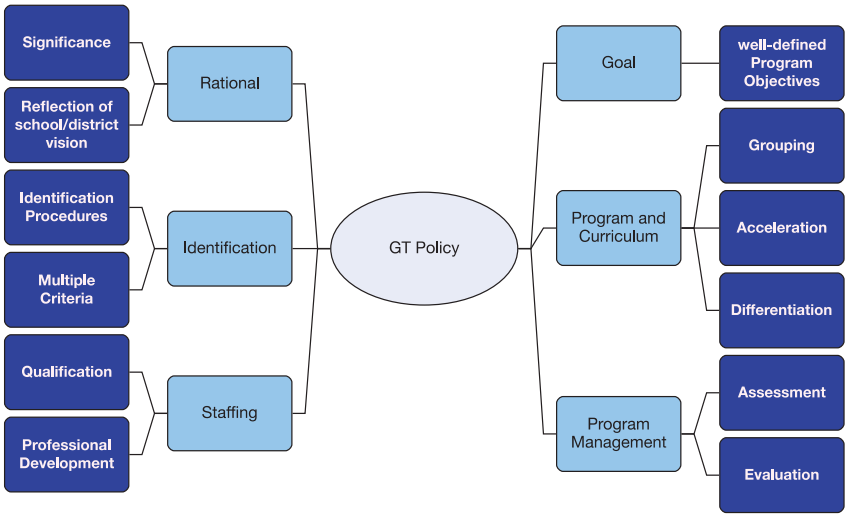

Figure 1 Categories and Sub-Categories of the Research

Accordingly, final codes were derived as per the coding framework demonstrated in the table below.

Table 1 Coding Framework

Final Coding Framework	**Initial Coding Framework**	**Content within the studied text**
Rational	• Significance • Reflects the school/district's vison	1. The significance of developing a GT policy 2. The policy reflects the school/district's vision and is aligned with it
Goals	• Well-defined program objectives	1. List of program objectives

Identification	• Identification Procedures • Multiple Criteria	1. Operational Definitions of Gifted and Talented 2. Use of Multiple Criteria for Identification 3. Use of proper assessment tools that are sensitive to the children's demographics, social, and economical backgrounds. 4. Ensure Identification process that match with the operational definition 5. Allow for Placement options 6. Address the different abilities/Intelligences 7. Connect Identification, Curriculum, and Services 8. Well-defined procedures for screening, identification, and services 9. Identified appeal process
Program and Curriculum	• Grouping • Acceleration • Differentiation	1. Grouping arrangements 2. Specific number of weekly contact hours for gifted program 3. Describe curriculum options 4. Link the curriculum for gifted and talented to the national and international standards 5. Embed higher cognitive skills within the curriculum of different subjects 6. Identify program modifications need for at-risk and highly gifted children 7. Social and emotional counselling

		8. Define program follow-up committees
Staffing	• Qualification • Professional Development	1. Minimum qualification (University based degree) 2. Link the policy standards to the national standards 3. Minimum qualification for the leaders of the program 4. On-going professional development
Program Management	• Assessment • Evaluation	1. Nominations and identification procedures 2. Program requirements retained for each grade level 3. Objectives and expected outcomes for each programming model 4. Duration and timeline of each programming model 5. Student-teacher ratio in each programming model 6. Planning procedures 7. Training services for teachers engaged in the program 8. Counselling and guidance for teachers and students 9. Program evaluation procedures

To support the research validity and reliability, the researcher followed a standardized technique that included; Data preparation, Definition of unit of analysis, development of categories and coding scheme, testing the coding scheme on sample text, coding of the whole text, evaluation of the coding scheme, outline of conclusions and findings (Zhang & Wildemuth, 2016). The Quantitative Data Analysis Software (QDAS) NVivo was used to analyse and interpret the data to

fit the purpose the of the study. The software was developed by QSR International and is being used by researchers to analyse qualitative data (Gibbs 2002). The software was used to manage the data, keep track of the themes and codes as indicated in Figure 1 above, ensure the accessibility of data within the text, save query results as codes, which are identified as nodes in the software, and finally visualize the data to facilitate an access to the outcomes and findings. Researchers raised some concerns related to the use of QDAS such as increasing the distance between the researcher and the data, in addition to excluding the analytical activities a researcher should retain while conducting the research (Gibbs 2002). Nevertheless, the researcher of this study ensured full control of the data and maintained a critical lens on the findings.

Limitations and Delimitations

According to Creswell (2012), limitations of a documents analysis research can be the different interpretation of the text for the different readers/researchers, the unavailability or the difficulty to find the required information/documents, the incompletion of the content, and the inaccuracy of the documents. However, the researcher strived to obtain authentic documents through official resources i.e. official governmental websites. Yet, due to the large number of policies found for GT, especially the USA policies, the researcher had to identify a criterion to select a limited number of documents that can be studies within the allotted time.

Ethical Considerations and the Role of the Researcher

Cohen (2007) stated that an educational researcher should thoughtfully design and conduct a research based on accurate procedures. Furthermore, a researcher should be objectives and explicitly declare how data was collected and analysed. Therefore, all documents used for this research were published via official websites. Given that the researcher is the instrument for a document analysis research; she thoroughly read the documents and avoided any kind of bias. Additionally, all judgments, were reasonable and based on one criteria set.

Results and Discussion

Table 2 is summarizing the documents' analysis. Categories and Sub-Categories pertinent to the entitled policies are indicated by X. Findings are elaborated below.

Table 2 Summary of the Findings

Categories	Sub-Categories	ADEC	Australia	UK	Georgia/USA	Oklahoma/USA	Kentucky/USA	Arkansas/USA
1.0 Rational	1.1 Significance	X	X	X	X	X	X	X
	1.2 Reflects the school/district's vison	X	X	X	X	X	X	X
2.0 Goals	2.1 Well-defined program objectives	X		X	X		X	X
3.0 Identification	3.1 Identification Procedures		X	X	X		X	X
	3.2 Multiple Criteria		X	X	X		X	X
4.0 Program and Curriculum	4.1 Grouping		X		X	X	X	X
	4.2 Acceleration		X		X	X	X	X
	4.3 Differentiation	X	X		X	X	X	X
5.0 Personnel	5.1 Qualification				X		X	X
	5.2 Professional Development	X		X	X	X	X	X
6.0 Program Management	6.1 Assessment		X	X	X	X	X	X
	6.2 Evaluation		X	X	X	X	X	X

Category 1: Rationale

All documents studies for this research exhibit a clear rational for developing the GT policies. A comprehensive justification was presented in the GT policy of Georgia/USA as well as an explicit statement declaration in the UK and Australia policies. While the UK policy reflected the Service

Children's Education commitment, Georgia policy was linked to the State's law of Special Education Services.

Category 2: Goals

Although the Australian document included most of the policy elements, it lacks a clear identification of the policy goals. Yet, ADEC policy introduced a list of the intended objectives. The aims of the UK policy were derived from the Service's Children Education and were focused on fostering the development of the talented children in a stimulating learning environment and make use of the community. Oklahoma, Kentucky, and Arkansas policies presented their goals broadly but the Georgian policy did not show any.

Category 3: Identification

Although identification was mentioned as a procedure to select the gifted and talented children in both ADEC and Oklahoma policies, no details existed about the criteria of selecting the gifted and talented children for the program. On the contrary, Australia, UK, Georgia, Kentucky, and Arkansas policies introduced a detailed description of the identification procedures showing the different criteria for selection ranging from a checklist provided for teachers, parents and peers to the consideration of the national and the international test scores of the nominated children. The UK policy suggested the use of both quantitative and qualitative information gathered about the candidates from their teachers and parents. Georgia adopted its identification policy from the legislative and rule-making initiatives for the state in 1994 and 1995. In Kentucky's policy, details about the general intellectual and academic abilities of students are considered as key elements in the identification policy for the GT program. Further details are elaborated extensively in their published document.

Category 4: Program and Curriculum

Differentiation was defined clearly in ADEC GT policy. However, general differentiation classroom practices were listed apart from those specifically identified for GT children. Yet, acceleration was given as an option for the teachers' recommendation checklist in the document's annex with no reference of definition nor acceleration options in the body of the policy. Likewise, the UK policy lacks information about programming and curriculum. The Australian policy

incorporated some information about acceleration in the Gifted and Talented education flowchart in the document's appendix. Yet, no aspects were specified neither for grouping nor for differentiation. Although it was declared that Gagné's Differentiated Model was used to present the educational and operational definitions in the policy. The four USA states' documents studied in this research demonstrated a detailed description of programming and curriculum. The influence of the NAGC guide was evident.

Category 5: Personne

Teachers in a GT program are expected to work directly with the gifted learners, which mandates certain qualifications that would enable them facilitate learning in the most suitable environment to cater for all students' needs. Yet, teachers cannot do that without proper preparation (Kyburg et al. 2007). ADEC policy did not mention the required qualification of the GT program teachers but recommended a training for those teachers. The UK policy suggested that the program management offer professional development opportunities for GT teachers. The same situation is spotted in Oklahoma's document. The Australian policy never mentioned information about the personnel training nor professional development. However, Georgia, Kentucky, and Oklahoma stated policies for staff qualifications and training requirements.

Category 6: Program Management

The importance of having the program's assessment and evaluation policy has been proven in the literature. A regular process of collecting and analysing the data is referred to as assessment. While evaluation procedures are required to inform and update the policy. All policies used for this content analysis study included elements of assessment and evaluation except the one for ADEC. Policy review elements were comprised in the UK policy. A panel for program evaluation is mandated in Georgia's policy. Whereas regular and on-going review of the program is required in the Australian document before acknowledging students' progress.

Conclusions and Recommendations

Literature about Gifted and Talented education policies is quite coherent. The major findings of the study were evolved around the research questions. Global standards for stating a policy for

gifted and talented programs were explored and evident by reviewing a wide range of literature. Accordingly, the gap in the ADEC policy is identified. Therefore, the following are recommended:

1. The policy need to include operational definitions for a gifted and talented program.
2. Identification policies should be acknowledged taking into consideration different criteria that would serve the needs of all gifted learners.
3. Further details about programming options should be included in the policy including differentiated in-class activities in addition to the special programs that can be offered.
4. Teachers qualifications should be defined before being engaged in a GT program
5. Program management must commence program's assessment and evaluation to inform the policy and provide regular updates.

The research purpose is achieved and all research questions were answered. Nevertheless, further research about GT policy development is recommended.

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A Policy Evaluation Study of the KHDA Teachers' Licensing Test in Dubai

Kamal Ben Selama

Introduction

Education has long been a central focus and priority of the United Arab Emirates (UAE) government since the independence of the country in 1971. Many initiatives have been introduced in order to raise the quality of teaching and school leadership, which are recognised as the keys to achieving higher student outcomes. In fact, students need to be equipped with the necessary knowledge and skills to enter the workforce and/or to continue their studies confidently. Accordingly, several policies and strategic planning documents have been presented to show the UAE government determination to improve education. Some of these include:

1. The Ministry of Education Strategy 2010-2020
2. Vision 2021, United Arab Emirates
3. The 7-year UAE National Agenda
4. Dubai Strategic Plan 2015
5. ADEC 10-Year Strategic Plan
6. Sharjah 2020 Vision Plan

However, the main strategy remains the UAE vision, which maps the road the UAE government should follow in order to provide students with a first- rate education system in the country. Accordingly, in 2010, H.H. Sheikh Mohammed bin Rashid Al Maktoum, Vice-President and Prime Minister of the UAE and Ruler of Dubai, launched the UAE vision 2021 that aims to make the UAE among the best countries in the world by the Golden Jubilee of the Union. In 2014, a seven-year National Agenda was also launched to enable students to rank among the best in international assessments and to help "all schools to have exceptional leadership and internationally accredited teaching staff" (vision, 2021). Similarly, the Ministry of Education has developed a comprehensive strategy plan 2010-2020, which includes ten strategic objectives in order to achieve the country's vision. Among the objectives that, according to the ministry, will improve the quality of education in the country is the introduction of the teachers and leadership professional licensure for both public and private schools (Ministry of Education strategy 2010-2020). It was obvious that the government would link the two main objectives of the National Agenda; namely good ranking in international assessments and good quality in education

leadership, to establishing a teachers' licensing policy based on setting clear professional standards. In fact, in September 2013, the UAE Ministers' Cabinet authorised a resolution to establish a Supreme National Steering Committee (SNSC) to oversee the development of teachers and leadership professional standards and the implementation of a national licensing system. The Committee consists of representatives from the National Qualifications Authority (NQA-Chair), Abu Dhabi Centre for Technical and Vocational Education and Training (ACTVET), the Knowledge and Human Development Authority in Dubai (KHDA), Abu Dhabi Education Council (ADEC), the Ministry of Education (MoE) and the Ministry of Higher Education and Scientific Research (MOHESR) - it should be noted that MOHESR is now under MoE. The SNSC, through its technical committee developed "Teacher and Educational Leadership Standards" for the UAE. These Standards underpin the systems for the National licensing and certification of teachers in the UAE. They also describe the competent performance of teachers and educational leaders who are responsible for empowering students to achieve their best and to grow into global citizens. Therefore, this standards-based licensing system aims to achieve the UAE Vision 2021 of creating a first-rate education system (The National, 2016).

Teacher Professional Standards (TPS)

Despite the number of initiatives and strategic plans undertaken by the UAE government, there seems to be no coherence in the implementation of educational policies across the nation. Examples of incoherence are clear in processes followed by the three main educational entities (MoE, ADEC and KHDA) in regards to teacher recruitment, induction, continuous professional development, appraisal systems and career pathways. Another strong example of incoherence is the lack of common and unified teaching professional standards frameworks, which are considered as fundamental to improving teachers' performance. Accordingly, the Organization for Economic and Co-operation Development (OECD, 2013) identifies four main objectives for teachers' standards: 1) to support the improvement of teacher performance;2) to certify teachers who are new to the teaching profession or who have attained a certain status as teachers;3) to assess teacher performance; and 4) to evaluate and accredit teacher training institutions. Similarly, Darling-Hammond (2000) believes firmly that rigorous professional standards are an indication of education improvement and progress because they " include standards that ensure that teachers will know the subjects they teach and how to teach them to children; that they will understand how

children learn and what to do when they are having difficulty; and that they will be able to use effective teaching methods for those who are learning easily as well as for those who have special needs" (Darling-Hammond ,2000,p 7). Therefore, the SNSC developed the teacher standards that consist of four core component areas of professional activity and apply to all teachers in the UAE. The standards are: *a) Professional and Ethical Conduct, b) professional knowledge, c) professional practice and d) professional growth.* Teachers must meet these standards to become a Licensed Teacher (LT) in the UAE. Each Standard has a number of 'Elements' (outcomes) with associated 'Performance Criteria' and 'Performance Indicators'. These standards and their components are included in the teachers licensing test, which, along with other requirements, is essential for obtaining the license.

Teachers Licensing Test

For many countries, recruiting good teachers and keeping them seems to be a daunting task. A major factor that has undesired impacts on the quality of education is the teachers' lack of knowledge about this complex profession. Teaching does no longer consider students as passive learners. Good teachers; however, are the ones who "…know when children aren't learning and can adjust instruction appropriately; they know how to design and use a variety of assessment techniques…; they know that teams of professional educators can transform schools and expect to go about doing it" (Imig,1996 cited in Roth & Swail, 2000). Therefore, many countries have been requiring teachers to have a teacher "license" or "certification" as evidence of knowledge-based teaching practice. However, for many the terms "licensing" and "certification" seem to be confusing and are used interchangeably in many cases. Cronin (1983, p. 175) defines certification as "…the process of deciding that an individual meets the minimum standards of competence in a profession" and licensing as "…the legal process of permitting a person to practice a trade or profession once he or she has met certification standards." Given that the UAE employs a large number of teachers from different countries; teaching more than 15 different curricula, there seems to be a critical need for a unified system to ensure minimum entry requirements are met and to establish processes to validate overseas teaching qualifications. The teachers' UAE standards framework seems to provide clear and substantive measures and indicators against which teachers can be recruited, licensed and incentivised. Therefore, the teacher licensing system will be the process by which teachers are officially recognised for achieving a level of professional

competence. By gaining a license, they will demonstrate that they have consistently achieved standards in a variety of ways. Accordingly, teachers are to be assessed in the four core standards to give evidence of their understanding of different areas of teaching and learning. This view goes in line with what Pascoe et al (1988,p13) consider as a right of the parents to deserve well qualified teachers and that "…an initial step toward actualizing this goal is to determine whether or not candidates have basic minimum competencies and the professional knowledge needed to teach ". However, teachers licensing tests seem to have their limitations. Debate revolves mainly around what to test teachers on, how to test and when to test (Hathaway, 1980, p 214). David Seeley (1979, quoted in Hathaway, 1980) believes confidently that "…no one has come up with a test that can predict who will make a good teacher – or principal … at the moment, the most that tests can be expected to do is screen those whose general educational background is too weak, or those teachers who don't know their subject matter well enough to teach it."

Purpose and Rationale

Within this amalgam of opinions for and against teachers licensing tests, the purpose of this study was to engage in an evaluation of the test conducted by KHDA in the pilot phase of the teachers licensing project in Dubai. The study looked at the different components of the test and their relation to the professional standards which are considered main determinants of improving any education system and their absence will result in the difficulty of identifying and understanding the competencies of the teachers (Chaudhry & Shami, 2007,p1).Data on the test results were collected and analysed for the purpose of trying to understand the extent to which licensing or certification tests are efficient tools to inform about teachers' understanding of professional knowledge and skills. Additionally, the interest in researching this topic stemmed mainly from the fact that the licensing system in general and the licensing test in particular are newly introduced policies in the UAE education system and have not been researched or evaluated yet. Therefore, this study engaged in a policy evaluation which is defined as "…an objective process of understanding how a policy or other intervention was implemented, what effects it had, for whom, how and why" (HM-Treasury, 2011, p.11).

Research Questions

Researchers believe that any study should be based on a question or set of questions. It can also be the result of an idea or a hypothesis that needs to be tested. Other studies might explore issues and/or solve problems (Wellington, 2000, p47). Accordingly, this study investigated the importance of teachers' licensing tests. It attempted to explore and evaluate the licensing tests policy adopted by KHDA in Dubai and the extent to which these tests reflect teachers' understanding of the professional standards. Therefore, the overarching question was: To what extent did the licensing tests inform the regulatory entity KHDA about teachers' understanding of the four different components of the TELSUAE standards? Other sub- questions were also vital to this valuation analysis, which involved only one aspect of the evaluation cycle (due to the small length of this study) which was "process evaluation", and these were:

1- How was the teachers' licensing tests policy implemented?
2- How were the results monitored in order to give credibility to the policy?

The study used some actual factual data obtained from real tests taken by teachers in the pilot project in Dubai in order to understand to what extent they are knowledgeable about their pedagogical practices. The report used the quantitative method whereby the researcher "… collect[ed] facts and stud[ied] the relationship of one set of facts to another…" (Bell, J. 1999: 7). Overall, quantitative measures depend on measurements and amounts gathered from the people and events (Murray-Thomas, 2003:66).

Methodology

Researchers seem to agree that the purposes of the research "… determine the methodology and the design of the research," (Cohen et al, 2011, p.73). Therefore, it is important a researcher chooses a design that links collection of data methods and their analysis with the research questions (Hart, 1998). However, there appears to be no single design of a study mainly because "… research design is governed by the notion of 'fitness for purpose' (Cohen et al, 2011, p.73). So, researchers should be aware of "… the choices [they] make about cases to study, methods of data gathering, forms of data analysis etc., in planning and executing a research study" (Silverman, 2001,p 4).

Approach and Theoretical framework

This study was conducted within the boundaries of the positivist paradigm where "…researchers can discover 'reality' within a certain realm of probability (Mertens, 1998, p 9). Positivists are realists who advocate the opinion that a researcher's job is to uncover an already existing reality, a 'truth that is out there' (Muijis, 2010, p 4).To do so, the researcher "…needs to be as detached from the research as possible, and use methods that maximise objectivity" (ibid). It is also important for a researcher to explain the ontological and epistemological background of the research. Questions such as "What is the form and nature of reality and, therefore, what is there that can be known about it" (Guba & Lincoln, 1994, p. 108) need to be answered. This study embraced, then, the epistemological deductive logic, which sets the relationship between theory and social research. Accordingly, the researcher "… deduces a hypothesis (or hypotheses) that must then be subjected to empirical scrutiny", then specifies "… how data can be collected in relation to the concepts that make up the hypothesis" (Bryman, 2004, p6). Therefore, this paper, engaged in an evaluation of the KHDA licensing tests policy in order to understand to what extent these tests informed the regulatory entity about teachers' understanding of the four different components of the TELSUAE standards.

Policy and Policy Evaluation

Colebatch (2002,p1) defines policy as "… a central concept in both the analysis and the practice of the way we are governed .It gives both observers and participants a handle on the process, a way of making sense of the complexity of governing." Therefore, policy-making needs to have a goal or set of goals to be achieved through a process which is "… represented as a sequence of stages in the development and pursuit of this goal, beginning with thought, moving through action and ending with the solution" (Colebatch, 2002,p3). Similarly, an evaluation policy is a methodology used by organizations to guide their actions and/or decisions. It has a major role of "… providing essential feedback about what's happening in the programs or practices … associated with policies. Evaluation policies guide how evaluation happens" (Trochim, 2009, pp15-16). In fact, evaluations include "… identifying the factors that contribute to successful or unsuccessful delivery; identifying outcomes (intended or unintended) …; exploring the contexts in which policies operate; and exploring organisational aspects of delivery" (HM-Treasury, 2012).

Accordingly, this study had two objectives: first, it analysed the overall TELSUAE examination and second, it evaluated the test results in order to answer the research questions stated previously.

Method of data collection

Cohen et al. (2011, p.537) believe that a main characteristic of data analysis is "… [the] merging of analysis and interpretation and often by the merging of data collection with data analysis". Research conclusions are often a result of the overlap of analysis and interpretation. Accordingly, this study analysed and evaluated the teachers' licensure policy that KHDA adopted relying on the actual data collected that are closely linked to the research question(s). However, the main challenge was the lack of research papers that explored the correlation between teachers' standards-based licensing tests and their understanding of these standards.

Data Analysis, Findings and Discussion

The study relied on specific data provided by KHDA (although not officially released). First, it looked at the examination broad policy and its main specifications (figure 1). Second, the study examined the standards that the examination originated from (figure 2 sample). Finally, it analysed the test results of 160 teachers who participated in the pilot test (figure 3 sample). The main objective was to explain the type of correlation that exists between the licensure tests and the teachers' understanding of the standards.

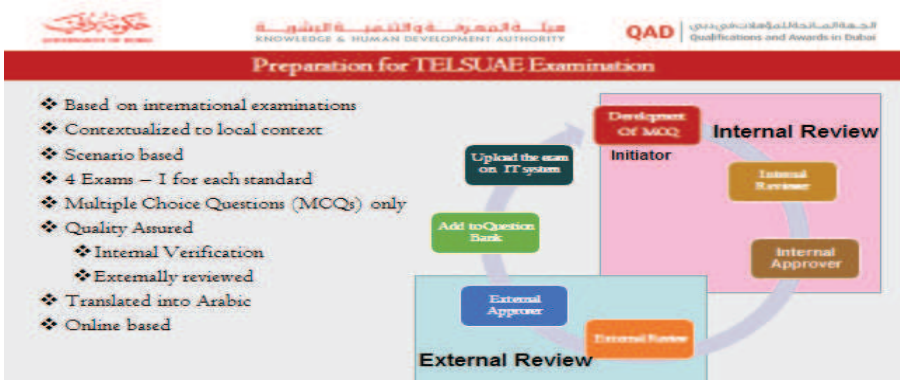
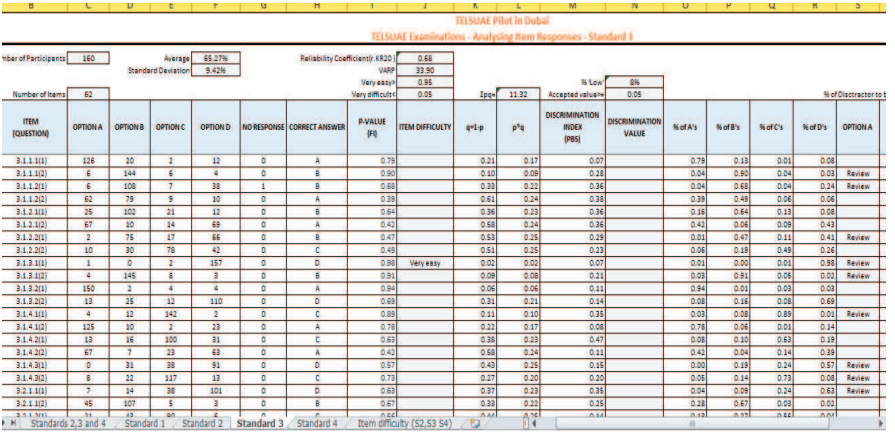


Figure1: ***TELSUAE Test policy***

3.3	**Use assessment for learning**	3.3.1	Use varied assessments to measure learner achievement, including relevant national and international assessments.	3.3.1.1	Use assessment of prior learning to establish individual starting points.
				3.3.1.2	Use ongoing formative assessment to measure progress.
				3.3.1.3	Use summative assessments – with reference to relevant benchmarks- to measure learner attainment and progress.
				3.3.1.4	Provide opportunities for learner reflection and self-assessment.
				3.3.1.5	Use appropriate tools and strategies to assess the academic progress and personal development of learners with special educational needs.
		3.3.2	Analyse and use assessment data to inform planning, teaching and curriculum review.	3.3.2.1	Use assessment information to guide lesson planning.
				3.3.2.2	Use assessment information to adjust teaching to meet the nee of all learners.
				3.3.2.3	Use assessment information to provide ongoing diagnostic feedback - written and oral - to h learners make progress.
				3.3.2.4	Use assessment information to review and modify the curriculu
					Use agreed methods to inform

Figure2: ***TELSUAE Standard 3***



TELSUAE Pilot in Dubai

TELSUAE Examinations - Analysing Item Responses - Standard 3

mber of Participants	160		Average	69.27%		Reliability Coefficient(r.KR20)	0.68											
			Standard Deviation	9.42%		VARP	33.90											
						Very easy>	0.95						% 'Low'	8%				
Number of Items	62					Very difficult<	0.05		Ipq=	11.32	Accepted value=<	0.05					% of Discractor to k	
ITEM (QUESTION)	OPTION A	OPTION B	OPTION C	OPTION D	NO RESPONSE	CORRECT ANSWER	P-VALUE (FI)	ITEM DIFFICULTY	q=1-p	p*q	DISCRIMINATION INDEX (PBS)	DISCRIMINATION VALUE	% of A's	% of B's	% of C's	% of D's	OPTION A	
3.1.1.1(1)	126	20	2	12	0	A	0.79		0.21	0.17	0.07		0.79	0.13	0.01	0.08		
3.1.1.1(2)	6	144	6	4	0	B	0.90		0.10	0.09	0.28		0.04	0.90	0.04	0.03	Review	
3.1.1.2(1)	6	108	7	38	1	B	0.68		0.33	0.22	0.36		0.04	0.68	0.04	0.24	Review	
3.1.1.2(2)	62	79	9	10	0	A	0.39		0.61	0.24	0.38		0.39	0.49	0.06	0.06		
3.1.2.1(1)	25	102	21	12	0	B	0.64		0.36	0.23	0.36		0.16	0.64	0.13	0.08		
3.1.2.1(2)	67	10	14	69	0	A	0.42		0.58	0.24	0.36		0.42	0.06	0.09	0.43		
3.1.2.2(1)	2	75	17	66	0	B	0.47		0.53	0.25	0.29		0.01	0.47	0.11	0.41	Review	
3.1.2.2(2)	10	30	78	42	0	C	0.49		0.51	0.25	0.23		0.06	0.19	0.49	0.26		
3.1.3.1(1)	1	0	2	157	0	D	0.98	Very easy	0.02	0.02	0.07		0.01	0.00	0.01	0.98	Review	
3.1.3.1(2)	4	145	8	3	0	B	0.91		0.09	0.08	0.21		0.03	0.91	0.05	0.02	Review	
3.1.3.2(1)	150	2	4	4	0	A	0.94		0.06	0.06	0.11		0.94	0.01	0.03	0.03		
3.1.3.2(2)	13	25	12	110	0	D	0.69		0.31	0.21	0.14		0.08	0.16	0.08	0.69		
3.1.4.1(1)	4	12	142	2	0	C	0.89		0.11	0.10	0.35		0.03	0.08	0.89	0.01	Review	
3.1.4.1(2)	125	10	2	23	0	A	0.78		0.22	0.17	0.08		0.78	0.06	0.01	0.14		
3.1.4.2(1)	13	16	100	31	0	C	0.63		0.38	0.23	0.47		0.08	0.10	0.63	0.19		
3.1.4.2(2)	67	7	23	63	0	A	0.42		0.58	0.24	0.11		0.42	0.04	0.14	0.39		
3.1.4.3(1)	0	31	38	91	0	D	0.57		0.43	0.25	0.15		0.00	0.19	0.24	0.57	Review	
3.1.4.3(2)	8	22	117	13	0	C	0.73		0.27	0.20	0.20		0.05	0.14	0.73	0.08	Review	
3.2.1.1(1)	7	14	38	101	0	D	0.63		0.37	0.23	0.35		0.04	0.09	0.24	0.63	Review	
3.2.1.1(2)	45	107	5	3	0	B	0.67		0.33	0.22	0.25		0.28	0.67	0.03	0.02		

Standards 2,3 and 4 | Standard 1 | Standard 2 | Standard 3 | Standard 4 | Item difficulty (S2,S3 S4)

Figure3: ***TELSUAE Standard 3 test results***

Data Analysis

It is worthwhile noting that the KHDA licensure tests were multiple-choice items with scenario-based rubrics that included distractors. There were four different tests, one for each standard with the number of items ranging from 30 to 60. The analysis of the data; mainly the test scores, relied entirely on the works of DeVellis, R. F. (1991), Haladyna. T. M. (1999) and Suen, H. K. (1990). Researchers believe that understanding how to interpret and use information based on student test scores is as important as knowing how to construct a well-designed test (DeVellis, R. F., 1991, Haladyna. T. M., 1999 and Suen, H. K., 1990). Tests data analysis also plays an important role in informing about the candidates knowledge and understanding of the content that is tested. The current scores obtained from KHDA licensure test were analysed based on the following criteria:

Item difficulty: refers to the percentage of students that correctly answered the item. It is also referred to as the p-value. The range is from 0% to 100%, or more typically written as a proportion as 0.0 to 1.00.Therefore, the higher the value, the *easier* the item. P-values above 0.90 are very easy items and should not be reused again for subsequent tests. If almost all of the students can get the item correct, it is a concept probably not worth testing. Whereas, P-values below 0.20 are very difficult items and should be reviewed for possible confusing language, removed from subsequent tests, and/or highlighted for an area for re- instruction. If almost all of the students get the item wrong, there is a problem with the item or students did not get the concept. The ideal value then is when the P-value is slightly higher than midway between chance (1.00 divided by the number of choices) and a perfect score (1.00) for the item. For a 5-option multiple-choice question, the ideal value is .60 (60%)

Item discrimination: refers to the point-biserial relationship between how well candidates did on the item and their total test score. It also refers to as the point-biserial correlation (PBS). The range is from –1.00 to 1.00. The higher the value, the more discriminating the item. A highly discriminating item indicates that the candidates who had high tests scores got the item correct whereas candidates who had low-test scores got the item incorrect. Items with discrimination values near or less than zero should be removed from the test. This indicates that candidates who overall did poorly on the test did *better* on that item than candidates who overall did well. Accordingly, the acceptable range is 0.20 or higher and the ideal value is the closer to 1.00 the

better. The following calculation was where

$\overline{XC}$ = the mean total score for persons who have responded correctly to the item

$\overline{XT}$ = the mean total score for all persons

p = the difficulty value for the item

$q = (1 - p)$

S. D. Total = the standard deviation of total test scores

$$\frac{(\overline{X}_C - \overline{X}_T)}{S.D.Total}\sqrt{\frac{p}{q}}$$

Reliability coefficient: refers to the measure of the amount of measurement error associated with a test score. The range is from 0.0 to 1.0. The higher the value, the more reliable the overall test score. Typically, the internal consistency reliability is measured. This indicates how well the items are correlated with one another. High reliability indicates that the items are all measuring the same thing, or general construct (e.g. knowledge of how to calculate integrals for a Calculus course). With multiple-choice items that are scored correct/incorrect, the Kuder-Richardson formula 20 (KR-20 is often used to calculate the internal consistency reliability.

Where

K = number of items

p = proportion of persons who responde n (i.e., difficulty value)

$$\frac{K}{K-1}\left(1 - \frac{\sum pq}{\sigma^2_x}\right)$$

q = proportion of persons who responded incorrectly to an item (i.e., 1 – p)

σ^2 = total score variance

The acceptable range is 0.60 or higher and the ideal value is 1.00.

Distractor evaluation: The distractor seems to be an important factor in the test scores analysis. Research shows that there is a relationship between the distractors students choose and total test score. The quality of the distractors influences candidates' performance on a test item. Poor distractors should be revised, replaced, or removed. In order to analyse the responses to distractors a frequency table was used (fig 3). The table showed the number of students that selected a given distractor. Distractors that are selected by a few or no candidates should be removed or replaced.

Findings

This section presents the main outcomes that emerged from the data analysis. Reporting of the findings will focus mainly on two areas: the overarching policy of the examination preparation and the licensure test scores based on the criteria of the test scores analysis mentioned earlier.

TELSUAE examination policy

The purpose of the overarching KHDA policy for the licensure examination/ test (figure 1) is to provide a clear guideline on the different stages the test passed through before being administered to the candidates. The process started with KHDA conducting a benchmarking study on international licensing or certification tests. This benchmarking included countries such as the United States, the United Kingdom, Australia and New Zealand. The purpose of the benchmarking was threefold: 1) to identify the main components of such licensure tests, 2) to explore the extent to which these examinations tested the candidates' knowledge of the professional standards and 3) to identify the aspects of the professional standards that intersected with the TELSUAE ones in order to contextualise the test to the local needs.

The test was then written in a multiple-choice pattern with rubrics based on specific scenarios. A good side in the development of the KHDA licensure test was the quality assurance process involved. The exam was quality assured internally and externally by reviewers who provided their feedback and approved the changes and the test in its final shape. Overall, it seems the process and procedures that KHDA adopted for the development of the licensure examination were systematic and well thought of. What added more credibility to the test process is the non-existence of any conflict of interest between KHDA and the teachers because the latter are a regulatory body and do not own schools? However, the question remains whether the way the test was structured was able to inform about the teachers' understanding of the different components of the professional standards.

Licensure Test

The figures below show the candidates' results in the four different standards; namely: SI) Professional and Ethical Conduct, S2) professional knowledge, S3) professional practice and S4) professional growth.

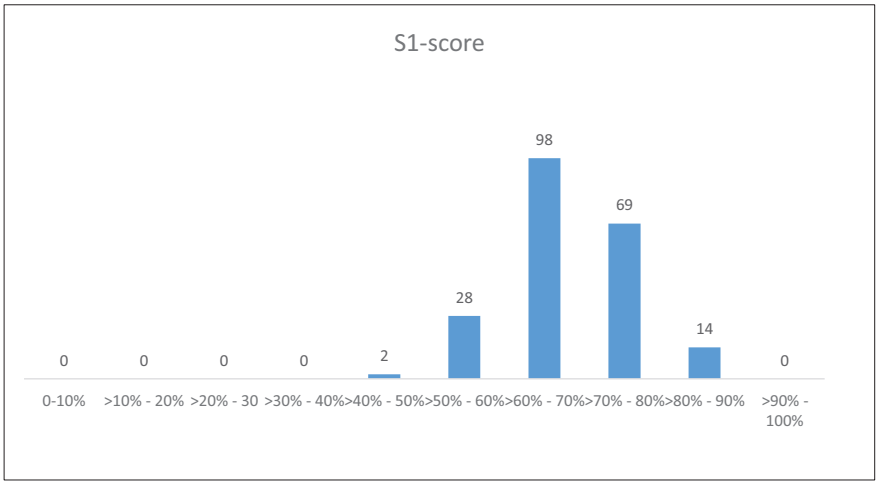


Figure 4; ***Standard 1 test results***

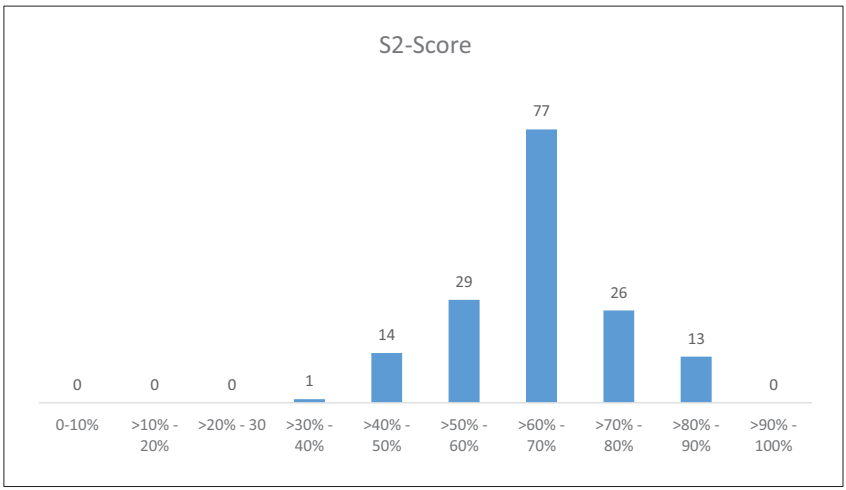


Figure 5; ***Standard 2 test results***

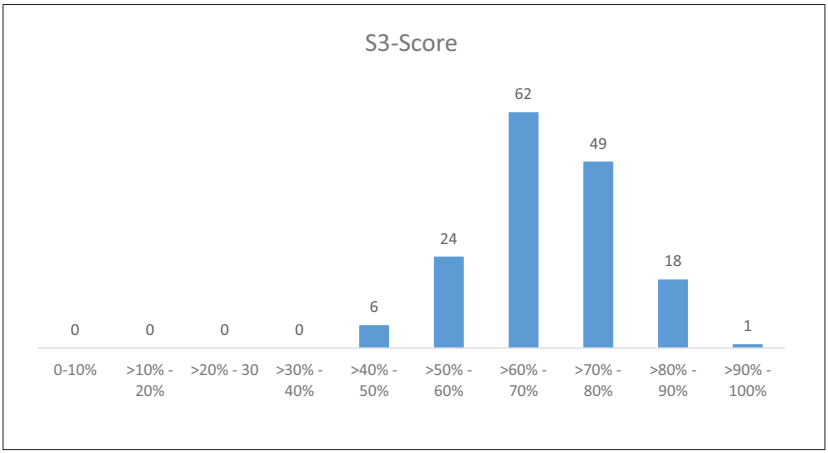


Figure 6; ***Standard 3 test results***

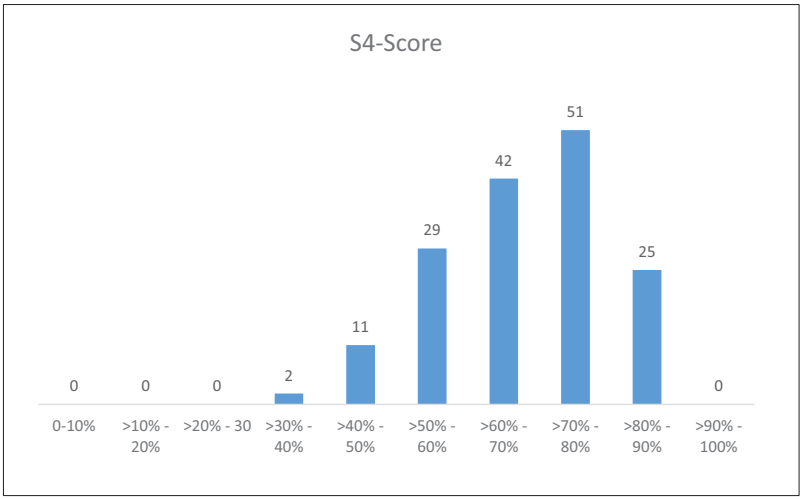


Figure 7; ***Standard 2 test results***

Briefly, it can be seen that the test with its four different components was able to provide an overview of the teachers' grasp of the different standards with variable and normal distribution of the percentages in each standard. This means that teachers' knowledge of the professional standards based on the test ranged from poor to good with variance in the percentages. However, in order to verify more the main purpose of the tests, there was a need to analyse them statistically in terms of the criteria mentioned earlier which are:

- Item difficulty: Were any of the items too difficult or easy?
- Item discrimination: Do the items discriminate between those teachers who really meet the TELSUAE Teacher Standards?
- Reliability coefficient: What is the reliability of the TELSUAE Examination?
- Distractor evaluation: Which distractors were effective and which ones were not?

The following results were obtained:

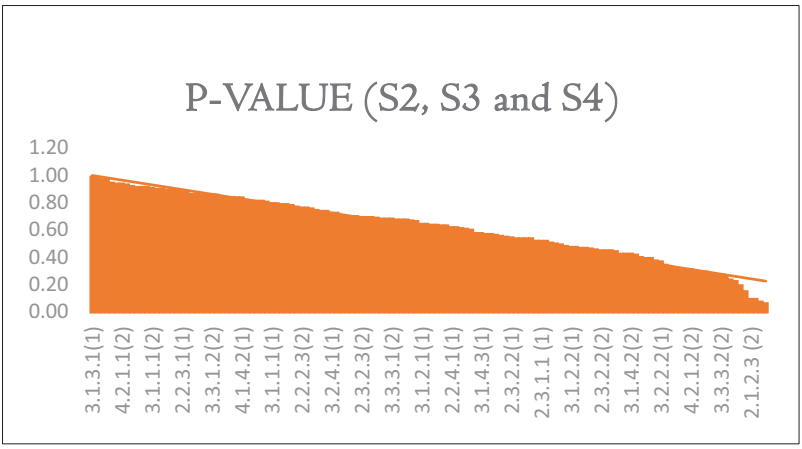


Figure 8: Item difficulty

To easy across the three main standards and their elements. In addition, as explained earlier the higher the value, the *easier* the item and P-values above 0.90 are very easy items and should not be reused again for subsequent tests. Therefore, the graph gives a clear indication of the type of questions that need to be reviewed or not used in future tests.

Standard	Discrimination Average
Standard 1	0.19
Standard 2	0.19
Standard 3	0.22
Standard 4	0.26
Standard 2,3 and 4	0.22

Figure 9: Discrimination average

As for discrimination which refers to the relationship between how well teachers did on the item and their total test score, the results in figure 9 show that the discrimination average in standards 1 and 2 are lower than 0.2 which means that some items in these two standards need to be reviewed or removed. These items resulted in some sort of discrimination that indicates that the teachers who had high tests scores got the item correct whereas teachers who had low-test scores got the item incorrect. Figure 10 below shows the coefficient reliability which refers to the internal consistency of the items and that measures how well the items are correlated to one another. The value of the four standards is above the acceptable range, which is 0.60, which implies that test scores were reliable although it is clear that the test scores for standards 2, 3 and 4 are more reliable than those of standard.

Standard	**Reliability Coefficient**
Standard 2,3,4	0.78
Standard 1	0.74

Figure 10: Coefficient Reliability

In test design, the quality of the distractors influences teachers' performance on a test item because it indicates the frequency (count), or number of teachers, that selected each incorrect alternative. For a test to be well balanced in regards of the choice of the items, each distractor should be selected by at least few teachers. In fact, the number of teachers choosing a distractor can be lower or higher than the expected for three main reasons: 1) partial knowledge, 2) poorly

constructed item and/or 3) distractor is outside of the area being tested. The figures below show the distractors value that ranges from high to low, and since the ideal value is when distractors are equally popular, there seems to be a need for the review of some distractors which were either not chosen or chosen by only very few teachers.

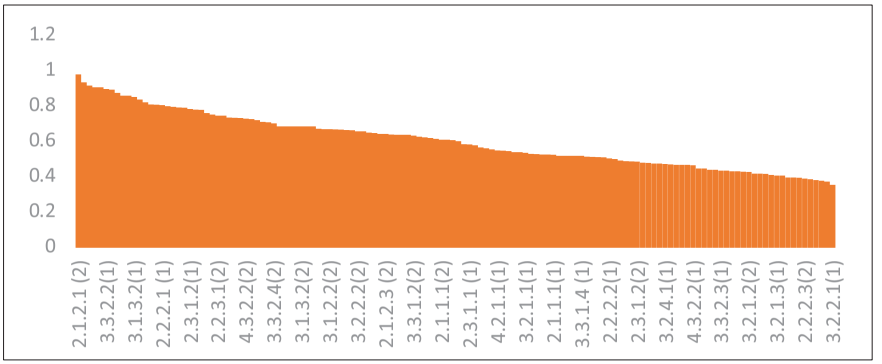


Figure 11: Distractors value S 2,3,4

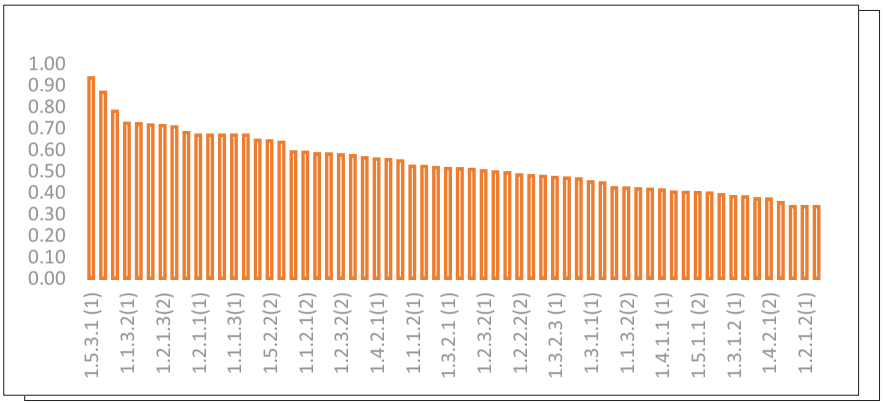


Figure 12: Distractors value S 1

Discussion

From early in this paper, it was made clear that the purpose would be to evaluate the KHDA teachers' licensure test in order to find out if any correlation exists between the test and the teachers understanding of the TELSUAE professional standards. The researcher conducted a detailed analysis of the real test administered by KHDA based on specific criteria. The purpose was to ensure the ability of the test to provide reliable information on teachers' understanding of the professional standards. The emerging results can be explained within two main areas; first the importance of the teachers' professional standards and second the importance of the teachers' licensing or certification test.

Teachers Professional Standards (TPS)

Why do teachers have to understand professional standards? Is there any correlation between the TPSs and students' achievement? These questions are central not only to this study but also to the on-going debate within the education field. In fact, research is still debating the importance of teachers' professional standards and their impact on the quality of teacher effectiveness in general. For some researchers, these standards are important to many national education policy reforms around the world today, for others; however, there is still "…some uncertainty about whether they can achieve the quality that they seem to inherently seek" (Tuinamuana, 2011, p 72). Besides, some proponents of TPSs believe the standards help teachers perform better in classrooms. For them, these standards "… lift the status of teachers in the public perception" (Ibid, p 75). Opponents; however, argue that teachers are usually not engaged by the stakeholders in the process of design and implementation of these standards (Zuzovsky & Lipman, 2006). Bloomfield (2006, p. 10) confirms this view and believes that that teachers "may do just enough to get by" when they start feeling pressure from the stakeholders. Within this discrepancy in opinions, KHDA has opted for teachers being able to understand the professional standards. This decision goes in line with what Darling-Hammond (2000), Harris (2012), Otis-Wilborn and Winn (2000), Chung and Kim (2010) and other researchers advocate strongly. They believe that good standards enable teachers to create and adapt instructional environments to make students 'learning experiences more effective. They also believe that standards frameworks, if well written, allow for better use of teachers' instructional time and better management of resources. Another asset of well-thought and well-devised standards is the teachers' stimulating and motivating push to be engaged in continuous professional development.

Licensing tests

The other argument revolves around whether teachers licensing tests are able to inform anything about teachers' knowledge, skills and competence. Mitchell and Barth (1999, P5) believe that "… teachers hold a position of public trust," and that "…whether or not our children succeed academically depends on the knowledge, skill and commitment of their teachers". Therefore, they stress "… the public needs assurance that every student is taught by professionals who know a lot about the subjects they teach" (ibid). One way to ensure professionalism in the job appears to be through a licensing system with specific measurable procedures that include a test. Dwyer (1991, p7), on the other hand, believes that such tests can be "…influential to education and practice, but only through persuasion and influence, not through mandates or directives". Another important characteristic of teachers licensing tests, as described by Dwyer (ibid), is that they do not really provide "opportunities to learn" because these licensing tests regulations "…are concerned with demonstration of knowledge and skills.

For purposes of public protection, the manner of acquisition of knowledge and skills is irrelevant for the licensing decision". Such arguments stress the fact that no clear-cut answer is given to the importance and neccessity of the teachers licensning tests. There is also a beliefe that "… testing teachers for basic skills competence is not the whole answer, but part of a compreshensive program…[that] will lead to better schooling" (Hataway,1980 ,p215). The KHDA licensing test results (figures 4,5,6and7) have ,somehow, provided a view, if not a definite one, on the Dubai teachers' understanding of the TPSs. These results showed that a good number of teachers need more suppport and professional development so as to grasp the standards entirely and be more effective in the calssrooms, although ,measuring teachers' effectiveness is also still under a lot of debate. Ding and Sherman (2006), for example, believe that "… the data on teacher effectiveness are often affected by uncontrolled and complex variables unrelated to schools, pupils, and the teaching act." This view puts the licensing test within these uncontrolled variables.

Conclusion

This study looked at the correlation between the licensing test and the teachers' understanding of the professional standards. Although the results showed that KHDA licensing test provided information on the extent to which the teachers were aware of the standards, the literature is still in great debate on the ability of these tests to provide reliable information on the correlation. However, one thing that all researchers agree on is that Teachers' weak

knowledge, skills and competencies will inevitably have negative impact on students' achievement. This concern has led the United Arab Emirates to take considerable measures to move forward in education in recent years, led by a strong political vision and strategy. To narrow the gap, and as was stated earlier, the government introduced, for the first time, a unified framework of the teachers professional standards. The decision of introducing the standards was based on research that confirms that all standards frameworks are based on an underlying assumption, explicitly or implicitly, that teaching is fundamentally about student learning – not just what the teacher knows or does.

Thus, the most successful frameworks phrase standards in a way that link teaching to its impact on student outcomes. In its review documents the OECD (2011) reports that effective frameworks provide both a "road map" to guide novice teachers through their initial classroom experiences, a structure to help experienced professionals become more effective, and provide suggestions for focusing improvement efforts. Additionally, teachers' licensure tests should be aligned with other measures such as building capacity to accelerate and improve the teachers' performance in the classrooms. Stakeholders also need to consider the teachers financial and social status as incentives to pursuing their career in the best interest of the students. Finally, there is still a need to conduct further research on many aspects of the teachers' licensure; mainly its impact on students' achievement. To do this, longitudinal studies need to be conducted in order to investigate to what extent teachers' licensing in the UAE is or will in fact improve students' learning outcomes.

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A study in STEM policy implementation in UAE: Science teachers' readiness to STEM education in the light of their perceptions

Marwa Eltanahy

Introduction

Concerns about UAE competitiveness have led to increasing the emphasis on knowledge-based economy to prompt innovation in different sectors including the education reform. Therefore, there has been a radical shift in the required type of education offered to UAE students based on the demand of a new job nature in the labour market. Accordingly, the adoption of the Emirates Science, Technology and Innovation Higher Policy has been announced by the President, His Highness Sheikh Khalifa bin Zayed Al Nahyan (Farah 2012) where competitiveness and productivity of the country are driven by "investment in science, technology, research and development" (UAE vision 2021 2009, p.18). Consequently, a new set of scientific initiatives was established to enhance these anticipated developmental changes in UAE through prioritizing these areas and to prepare the educational leaders to align with UAE vision. Thus, this policy aims to "redouble the focus on STEM (Science, Technology, Engineering, and Mathematics) in all UAE educational institutions" (Khaleejtimes 2015). A great emphasis now is put on engaging high school students in STEM education as an active learning approach that effectively motivate them to be enrolled in science and engineering fields in their future careers (World Bank 2008).

Background of the research

STEM is a buzzword appeared in America (Woodruff 2013) based on recommendation by the federal government and its applications caused a noticeable change in the educational landscape (Obama 2013). In addition, the consistent need for more creativity, innovation and technical application inspired the rapid change in the educational world in general, UAE in particular to fulfil its requirement and enrich the STEM professions (Asghar, Ellington, Rice, Johnson and Prime 2013). Hence, UAE was called to action, it responded by huge investment in the development of students' intellectual abilities through implementing STEM education in schools to improve their 21st century skills (Mosier, Levine & Perkins, 2013) that affect UAE future workforce. Private and public schools are encouraged to prepare their teachers to practice STEM applications in their classes. Additionally, Next Generation Science Standards were recommended to demonstrate approaches to teach STEM concepts and cross-curricula projects (NGSS 2013).

Problem Statement & Rationale

The integration of STEM disciplines aims to shift the learning paradigm from studying separate subjects to incorporate content of different knowledge in order to solve real-life problems (Capraro and Morgan 2013). This requires science teachers who are academically and pedagogically qualified enough to implement successful STEM practices in their classes. Unfortunately, there is no enough research has been conducted in UAE to investigate the extent to which science teachers are ready to apply STEM in their classes in the light of their perceptions. STEM is a new trend in UAE science education and identifying its barriers is crucial to support the implementation of its policy. The significance of this study is to add to the body of STEM literature local information about the beliefs, barriers and requirements of the science teachers in UAE. Consequently, overcoming the learning obstacles of STEM education is a need to help enhancing the competitiveness and quality of education.

Purpose, Objectives & Research questions

The purpose of the current study is to emphasize the valuable role of the ultimate implementers in UAE education such as science teachers to affect the STEM policy implementation. While its objectives are to investigate the extent to which science teachers are ready to implement STEM practices in their classes and to explain STEM barriers based on their opinions. Moreover, this study seeks to explore the most important factors that influence their STEM curriculum planning. The current study is conducted to answer the following questions based on science teachers' perceptions in both Public and private schools in Dubai.

- To what extent science teachers believe that they are able to implement STEM education.
- What are the main barriers that prevent successful STEM implementation in UAE schools?
- What are factors that influence STEM curriculum planning in UAE schools?

Literature Review

This study seeks to understand how science teachers in UAE perceive STEM education in the matter of their readiness to implement this new policy. In addition, STEM literature of theoretical studies refers to an urgent goal in education, which is expressing the consistent need for attention to STEM field requirement to ensure effective learning environment (Corlu, Capraro, and Capraro 2014).

Theoretical and Conceptual Framework of STEM policy

Appropriate teaching and learning instructions are the shortest way to enhance the quality of education (Hunt 2015). Therefore, STEM practices are suggested under the umbrella of the constructivism theory (Robert, Swap, Jonathan and Walter 2015) for its pedagogical benefits on students' outcomes. Moreover, STEM implementation is recommended for the education sector as a main priority in UAE National Innovation strategy. The social constructivism theory implies that the experience of student-centred approach reflects meaningful learning field where students can co-develop their new knowledge and effectively interpret its meaning (Balım 2009; Mayer 2004). In the educational context, Characteristics of constructivist practices are highlighted in many pedagogical instructions such as integrating engineering, technological and mathematics knowledge with science standards (STEM) to develop students' critical thinking innovation (El Sayary, Forawi and Mansour 2015; Chambers, Carbonaro and Rex 2007). The following diagram shows the theoretical and conceptual framework of the study.

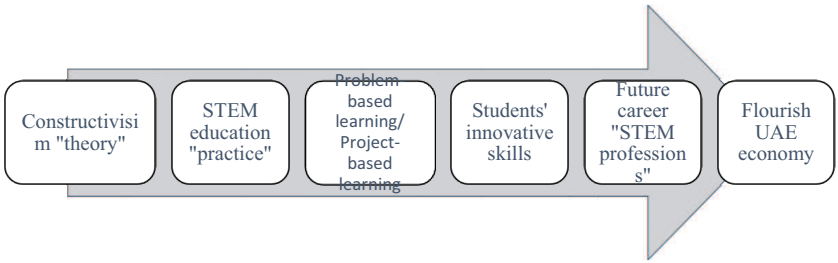

Figure 2: The theoretical and conceptual framework of STEM education based on the innovation strategy

Hence, STEM practices are best taught through hands-on activities to solve ill-structured problems (Russell, Hancock, & McCullough, 2007) based on a combination of appropriate technology and contents of different disciplines to suit all students' learning styles (Jonassen and Hung 2008). STEM literature emphasized that both problem-based learning and project-based learning are the most successful pedagogical approaches that positively facilitate STEM classes (Savery 2006; Bell 2010). Although, the nature of these two methods has certain common features, as both of them require cooperative social interactions to enhance conceptualization under the supervision of a facilitator teacher (Woods 2013), they have developed out of different fields. Working in learning environment that allow students to consider multiple perspectives and to search scientifically by using diverse source of

knowledge is valuable (Robert et al. 2015). Carrió, Larramona, Banos and Pérez (2011) asserted that the more students practice such constructivist instructions, the more satisfaction and interest in their learning and the more enhancement of their 21st century skills such as information management, problem solving, communication skills, critical thinking and creativity. Moreover, STEM education provides learners with authentic opportunities to develop their cognitive abilities that motivate students' potential and learning interest in STEM careers (Asghar et al. 2013; NSB, 2007), which lead to maximizing the participation of national workforce that achieve the goal of knowledge-based economy (Aswad, Vidican and Samulewicz 2011). Currently, it has been advocated that integrating engineering learning have a significant contribution on promoting students' competencies and design skills that increase their awareness towards STEM achievements (Yasser 2015).

Education system in UAE

In 1970s, UAE government established a formal education system. The ministry of education MOE supervised most of UAE schools that apply this system. At a later stage, education in both public and private schools witnessed a gradual improvement in all its aspects where the education reform focuses more on greater accountability, better preparation, interactive learning and standards-based curriculum. The education process in Dubai schools is under the Knowledge and Human Development Authority's inspection (KHDA). While, Abu Dhabi's schools are inspected by the Abu Dhabi Education Council (ADEC).

Recognizing a constant need for progress, new policies with top initiatives has undertaken in UAE to monitor and implement high quality education standards. Recently, a new inspection system is created through cooperative work between KHDA and ADEC with the ministry of education and is being rolled out across UAE in time for the inspection cycle in 2015/2016. As a result, a unified UAE School Inspection Framework is modified and adapted to meet the 2021 vision of education by emphasizing more innovation in its school curriculum and learning practices. Hence, the heart of the education reform now is to produce new generation of students who are independent thinkers and are able to create, innovate and analytically solve problems, which are all contributed to practicing STEM education (Merrill & Daugherty 2010). ADEC believes that teachers' role is crucial in the overall development of the reform as they are able to engage their students in the active learning process and maximize their potential so as to empower them with the required knowledge and skills as well (ADEC 2016).

Policy Statement

In the light of implementing UAE education reform, the ministry of education strategy 2010-2020 reported a primary objective regarding students' outcome is to "offer an education system that ensures that students are best-equipped for higher education and the future workplace" (MOE 2010). Generally, this means that graduates' skills should strongly match the labour market's needs (UAE Yearbook 2013) and they should be able to meet its 21st century challenges (UAE Yearbook 2006). That is why, National and educational leaders in UAE are calling for concurrent movements towards knowledge-based economy with a great emphasis on developing and producing both scientists and engineers from UAE local population who have developed a full set of professional abilities and technological skills to compete effectively and function practically in the global marketplace (Brandt & Prescott 2013).

In order to achieve this goal by enhancing students' acquisition of the required skills, an educational journey of discovery is launched in UAE to intensely support an "Innovation campaign in which elements of science, technology, engineering and math (STEM subjects) are integrated into the K-12 curriculum across public schools" (Pennington 2015) as well as private schools who are encouraged to incorporate STEM practices (UAE The Cabinet 2016) in their curriculum plan. Eventually, New national polices were designed and supported by an investment of over Dh300 billion in different areas including the education sector to achieve the knowledge economy goal. Thus, Shaikh Khalifa has announced that: "Creating sustainable wealth for the coming generation will depend on science, knowledge, technology and innovation. The Science, Technology and Innovation Higher Policy adopted today is a turning point in our journey to develop the UAE economically and socially." (Khaleejtimes 2015).

The situation of the study in the policy process

Science, Technology and Innovation Higher Policy is designed to solve UAE economic problem which calls for moving away from dependency on the oil-reserve to work on the development of individual's intellectual capabilities, The following diagram illustrates the impact of this study on the policy process.

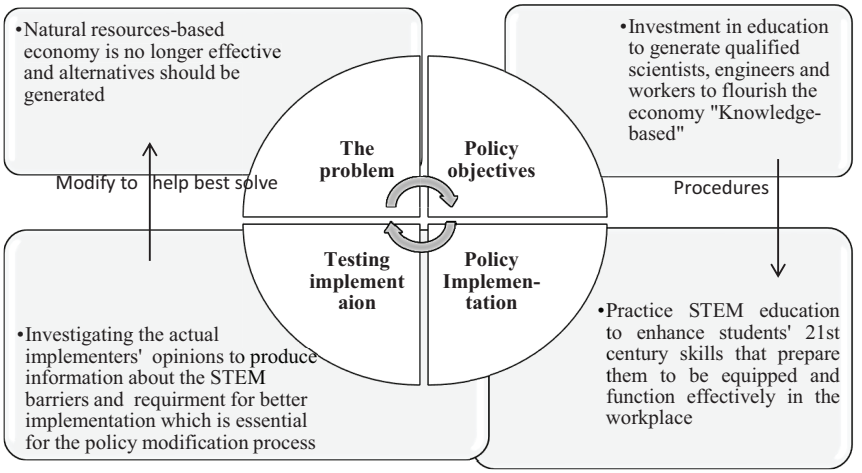

Figure 3: The situation & the impact of the study on the policy process

Having said that one is never sure how policy (STEM education) is actually implemented once it exposes to different aspects related to the policy environment (Birkland 2011). Besides, policy targets are strongly affected by the ultimate implementers (Elmore 1979) represented by science teachers in the current study. Teachers are required to equip their students with 21st century skills including creativity and innovation in order to be ready for jobs of the future workplace that have not yet been created (OECD 2016). Thus, the information collected from teacher thinking is beneficial to initiate actions and inform educational decisions which all help enhancing better learning (Huang 2015). This study emphasizes the importance of science teachers' opinions on applying STEM education and their needs for effective implementation through "backward-mapping" (Birkland 2011, p. 268) as an appropriate approach in studying policy implementation.

STEM policies worldwide

There has been a global tension in the context of education between increasing the international calls for more STEM applications and declining the level of students' disposition towards STEM study (Gough 2015), which considered as an important matter of discussion. Researchers argue that "Science, Technology, Engineering and Mathematics (STEM) is a central preoccupation of policy makers across the world'' (Marginson, Tytler, Freeman & Roberts 2013, p. 13). Their concern reflects the importance of this policy and its

implementation that directly contribute to the success of the education reform. Comparing the contemporary status of STEM policies in different countries is useful to create a rational position regarding the future of the STEM development in UAE and to identify ideas from their approaches for better implementation.

In Australia

The Australian national interest focused on enhancing strategic plan to implement STEM education in schools with strong emphasis on preparing teachers to affectively address the STEM environment that expectedly would face five challenges in the society including productivity and economic growth (Office of the Chief Scientist 2012). The official research in Australia argued that addressing all these significant challenges requires strategic enterprises to achieve high-quality STEM development and national attention to overcome any anticipated obstacles (Chubb 2013) in schools. Whereas graduated students do not take the same emphasis on mastering STEM skills. Interestingly, special attention is also given to female participation in STEM projects as well as marginalized students (Marginson et al. 2013). One similar theme is emphasized in both the UAE's and Australia's STEM policy as they assume that the economic performance of the country is affected by the quality and quantity of STEM performance because developing STEM skills is essential in enhancing industry growth ((UAE Yearbook 2013. Their strategy described significant pathways to ensure better education such as new knowledge and innovation (Office of Chief Scientist 2013). Instead, a new inspiration was mentioned in Australia policy to suggest involving STEM work in socio-political aspects through social compact between STEM scientists and their community (Gough 2008).

In United States US

US produced five top initiatives related to STEM education in its five-year plan.

1. "Improve P-12 STEM instructions;
2. Increase and sustain youth and public engagement in STEM;
3. Improve undergraduate STEM education;
4. Better serve groups historically underrepresented in STEM fields; and
5. Design graduate education for today's STEM workforce" (Committee on STEM Education, National Science and Technology Council 2013, p.5).

US theoretical study mentioned that students who have been graduated from specialized STEM schools could achieve STEM goals in the college better than students graduated from regular schools (Erdogan & Stuessy 2015). That is why; Gough (2015) explained that Australia policy

gives more focus on applying STEM with the undergraduate students as a preparation for their STEM careers. In addition, standards-based reform movement influences the American curriculum design to provide students with equal educational opportunity. As a result, he Next Generation Science Standards (NGSS) were developed as a new framework that outline STEM standards through crosscutting concepts and highlighting engineering and scientific practices related to core ideas in these disciplines (NRC 2012). Many schools in the UAE are following the American curriculum and are able to benefit from NGSS framework.

Results of previous studies

Hence, OECD (2016) suggested, "Putting the teaching profession at the heart of education reform requires a fruitful dialogue between governments and unions". Identifying teachers' needs and the difficulties they face in their mission is critical to achieve the learning goals. One of the most significant problems in teaching STEM projects is teachers' discomfort to integrate content of engineering discipline with other subjects because they do not fully understand it (Brophy, Klein, Portsmore & Rogers 2008). Therefore, NGSS call for participating students in STEM experiences and warn from applying any inequitable and ineffective practices that emerge from teachers' STEM misconceptions. Thus, Carful STEM planning and successful implementations are required for more accessible and equitable teaching (Purzer, Moore, Baker & Berland 2014). Finding of a recent study showed that the effectiveness of STEM delivery in teachers' classroom practices is intrinsically linked with their personal knowledge, level of understanding to that content knowledge and their perception of STEM (Bell 2016). A previous research study conducted in Qatar, suggested that science teachers require educational practices through STEM professional development programs to genuinely develop engineering fluency as it might take up to six years to be comfortably able to engage engineering projects in their classes (Cunningham & Carlsen 2014). On the other hand, a similar study found that US teachers are interested in integrating engineering in their STEM practices, despite the limited class time and insufficient teacher training that affect STEM curricula (Coppola, Madariaga & Schnedeker (2015).

Methodology

A quantitative non-experimental survey study is conducted to investigate science teachers' readiness to STEM implementation in UAE with qualitative data embedded into its instrument. High school science teachers in UAE are the main population in the study. Only eighty-one eligible responses were received from the seven Emirates in six weeks period. These random

responses represented the "convenience sampling" (Cohen, Manion & Morrison 2011, p. 155) based on access availability and time limitation. Data was collected by questionnaire (Appendix A) through Qualtrics website, where most of its questions were generated from STEM theories in the literature review. Some elements were adapted from a previous study (Coppola et al. 2015) for more reliability (Susuwele 2005). Participating teachers were first asked about the demographic information that might affect their perceptions such as their emirate, school type, teaching experience and their qualifications. Three quantitative clusters of Likert scale were designed to fulfil the study questions. For more valid data (McMillan & Schumacher 2010), each cluster followed by one open-ended question to collect some qualitative data and prompt more freely responses about teachers' STEM experiences. Additionally, two academic experts in the university reviewed the instrumentation and research protocols and some modifications were made based on their opinions. Ultimately, the questionnaire's reliability was measured by SPSS software with Cronbach's Alpha 0.897 that reflected the consistency of this quantitative tool. All anticipated ethical dilemmas were taken into consideration. The purpose of the study and its significance were mentioned at the beginning of the questionnaire as well as the consent was obtained to confirm that anonymity and confidentiality are kept (Creswell 2009).

Data Analysis & Results

The following graph shows that the majority of participating science teachers from Dubai and Abu Dhabi schools (38% - 23%) respectively. While the least participations are from Umm-Al-Qaiwain (2%) and Fujairah (3%).

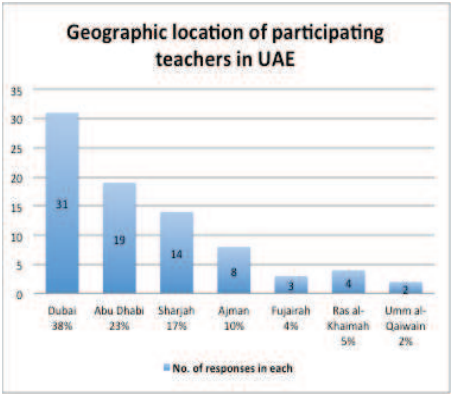

Figure 4: Geographic location of participating teachers in UAE

Demographics	Frequency	Percentage
Gender		
Male	22	27%
Female	59	73%
School Type		
Private	58	72%
Public	23	28%
Academic Qualification		
Bachelor	70	93%
Diploma	6	8%
Master	5	7%
Teaching experience		
1-4years	24	30%
5-10years	36	44%
More than 10	17	21%

Table 1: Teachers' demographics

The above table 2 demonstrates that 73% of participating science teachers are females and 72% of them are working for private schools in UAE. The most significant percentage is for science teachers who have bachelor degree as their highest qualification (93%). Finally, 44% of participants experienced teaching for 5-10 years and only 17(21%) have more than ten years teaching experience.

Science teachers' perception about their readiness to STEM education

As it can be seen in graph 4, the majority of science teachers (76%) show interest in teaching STEM and they do belief about the importance of exposing their students to STEM practices in science education. 69% of them understand that their schools administration put emphasis on teaching STEM. More than half of participants show that they are familiar with the cross-curricula instruction and are confident in their ability of integrate engineering in STEM classes (63% - 61%) respectively. About half of responses show that they have learned effective teaching methods in their STEM professional development programs (52%). That is why; they believe that integrating engineering would take time away from more important academic content (53%). The least significant percentage is for teachers who do not believe that STEM applications do not fit with the required teaching standards.

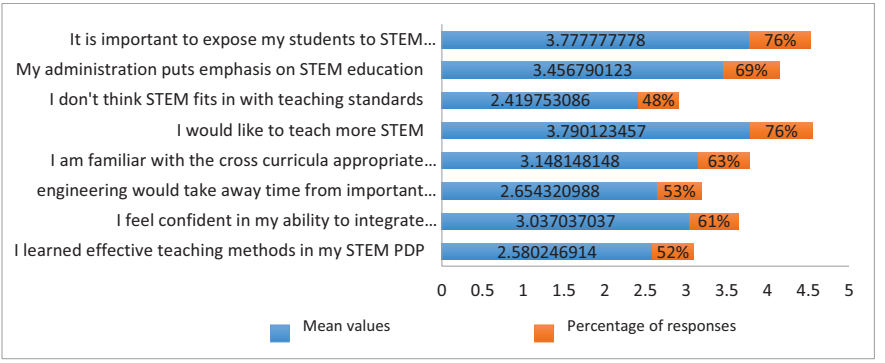

Figure 4: Mean values & percentage of science teachers' responses on STEM

Science teachers' perception about STEM barriers

The following bar graph illustrates that significantly about 90% of participants find themselves are not familiar enough with the STEM content and the limited class time for such implementations are the main obstacles that prevent them to apply STEM consistently. The second high percentage (87%) is for insufficient STEM materials and resources at the schools.

78% of teachers admit the difficulty of assessing students' STEM projects. About half of responses find that appropriate level of students, schools' administration do not give enough support to them, STEM does not fit standards and curriculum (57%-53%-51% & 48%) respectively are also challenges to STEM programs. The least significant percentage (26%) voted for students' interest to STEM as a barrier.

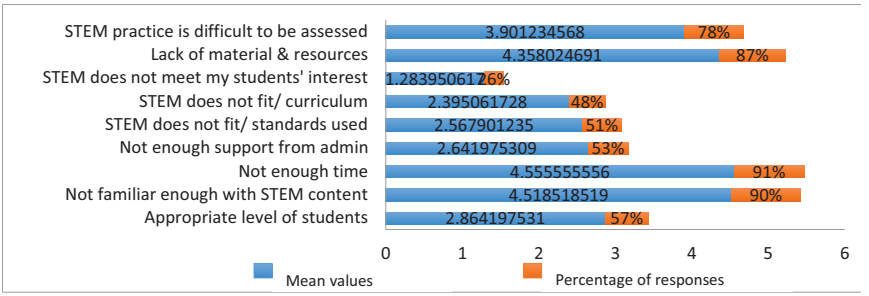

Figure 5: Mean values & percentages of responses about barriers of STEM implantation in UAE schools

Science teachers' perception about factors affecting STEM curriculum plan

According to high school science teachers' opinions, The most significant influences that affect their STEM curriculum plan are their class time and resources beside the easiest project based learning that can be done at the classroom (95% - 84%) respectively. About 66% to 69% of teachers are highly affected by their independent search, team discussion and meeting standards. Finally, only half of responses reflect that teachers' STEM plan is influenced by international exams' framework and Next Generation Science Standards framework for STEM application.

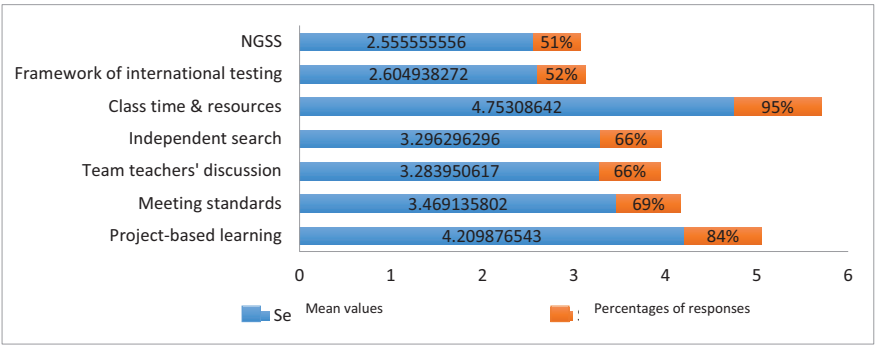

Figure 6: Mean values & percentage of responses about influences of STEM curriculum planning

Science teachers' qualitative responses

The open-ended responses were analysed and coded based on the mentioned themes at the following graphs.

Readiness and characteristics of STEM teachers

Participants were asked about if science teachers at their schools are ready for STEM practices and to mention the essential characteristics of STEM teachers; (69%) of teachers admitted that they are not ready enough. For example, one of the teachers noted *"I am not that much ready for STEM. It is a new practice, which need more clarification and preparation to be more confident. It requires a teacher who has a background of math and science, physics, or engineering"*. While (31%) found themselves, ready to a certain extent but with extra support to be more confident as one of them noted, "*I am ready but I still need a guide to address STEM effectively. Teachers should be trained and qualified enough to apply STEM in their classes and be able to follow international standards".*

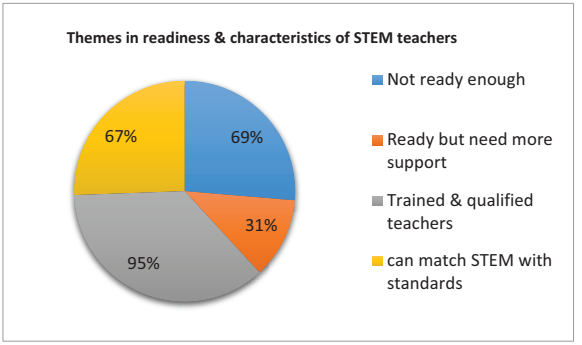

Figure 7: Themes in readiness and characteristics of STEM teachers

About STEM teachers' characteristics, (95%) of responses mentioned the importance of being a qualified and trained teacher to implement STEM efficiently. (67%) of them believed that STEM teachers should be able to match their work with the required standards.

Requirements for successful STEM implementation

Teachers were asked about the main requirements to implement STEM successfully; significantly (98%) of responses asked for professional development programs to explain, STEM more practically and clearly noted; *"We do need PDP with demo classes to enrich our*

knowledge and inspire our abilities. More resources and time are highly required with definitely clear STEM standards like NGSS to be followed. We need to receive more training in both technology and engineering". Again available resources and flexible time were suggested by teachers with high percentages (91%-89%) respectively. Clear STEM standards were also required by 79% of participants who claimed, *"In public schools, we use our own standards that I find it difficult to fit STEM practices for different subjects at the same time".*

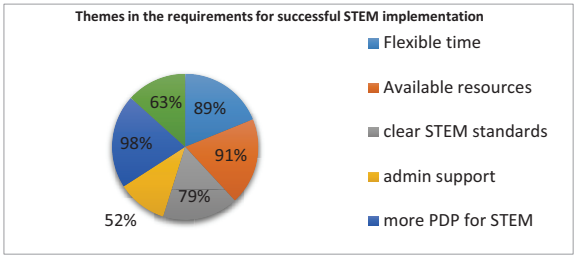

Figure 8: Themes in the requirements for successful STEM implementation

Interestingly, (63%) of teachers assumed that direct interaction with STEM experts in universities or faculties would be crucial to their students and reported; "*I strongly suggest direct cooperation with STEM experts in the universities, which would be beneficial for both teachers and students".* Finally, only half of participants mentioned that administration support is needed (52%); for example; *"Honestly, I am not comfort with teaching math concepts or engineering projects. I need more support from the admin and practices before I experience STEM with my students"*

STEM curriculum planning

Teachers were asked about their ways to plan for STEM curriculum and if they follow a certain framework. *One of the teachers responded positively and wrote, "Yes, I have a STEM framework to follow in my school. I plan for a constructivist class (student-centred approach) where students ask questions, search, discover the new contents while finding solutions for the problems they might face".* While others claimed, *"No, we do not follow specific framework at the school. We depend on our independent search and how the STEM project might fit the class time as we should teach more academic content".* Some of them admitted that they have a guidance but it is not enough "*Yes, we use NGSS as a framework to apply STEM practices which is convenient but we still have many questions regarding better implementation".*

Discussion

Hence, teachers are the primary implementers of STEM education that is considered as a strong practice required for achieving policy of innovation in UAE. This side of policy implementation should receive adequate attention to provide a future tool of inquiry for further modifications of this policy under debate. The study analysis focused on understanding science teachers' perception about STEM education regarding their readiness, STEM barriers and influences that affect STEM curriculum plans in their schools. The research questions were totally answered. Quantitative and qualitative data collected from participants reflected their high interest in teaching STEM applications, although they are not ready enough to STEM pathways in general.

These results matches to the finding of a previous study conducted in America (Coppola et al. 2015). Moreover, Teachers' discomfort to integrate STEM disciplines is reported as a significant problem in STEM policy implementation (Brophy et al. 2008). This results confirm that recommendations of a growing body of STEM research that urgently call for more professional development program to prepare teachers for STEM necessities, plans, assessment techniques and enhance their awareness of STEM content in order to avoid any equitable practices that might lead to increase students' STEM misconceptions (Purzer et al. 2014; Cunningham & Carlsen 2014; Bell 2016). It is worth knowing that in Finland, teacher quality is credited for STEM success as all of its pre-service teachers hold Master's degrees, which allow their primary students to receive high quality instruction to be prepared for STEM disciplines in the following grades (Mary & Prism 2011).

What is particularly impressive is the consensus from both public and private UAE participating teachers that students' interest to learn STEM is not a barrier towards achieving STEM goals. Instead, they confirmed that lack of required materials; STEM resources and flexible time are real and persistent challenges (Coppola et al. 2015). These findings highlight the crisis points that should be put right first as an essential element of the reform in order to nurture students' intrinsic motivation more effectively and accelerate their acquisition of basic STEM and innovative skills.

Furthermore, multiple perspectives were revealed regarding influences on STEM curriculum plan. Thus, teachers' plan to STEM classes is one of the important inquires that should be addressed to better engage students in STEM learning environment. Participants agreed that

class time and available resources are the basic influences that they consider to plan for their STEM classes, which means that they might exclude effective STEM tasks because they need more time and materials. Whereas, qualitative responses from teachers in public schools indicated a different conflict as their content standards assigned to government schools do not perfectly fit the required standards of STEM disciplines. However, some science teachers in American curriculum schools follow NGSS framework, which form the backbone of US efforts to expand and improve STEM education in high schools (Lontok, Zhang & Dougherty 2015). Other private schools have developed their STEM framework based on students' needs. Haycock (2001) mentioned that setting standards high might not create enough change to STEM education unless a rigorous curriculum accompanies and prioritizes them as well as instructional strategies to meet STEM coursework. Actually, more emphasis should be put in adapting STEM framework based on standardized exams like TIMSS framework to promote students' cognitive abilities in order to increase the general disposition towards STEM jobs. Finally, all of these discrepancies should be taken into consideration through shedding a little light on how well STEM standards cover science academic content.

Conclusion

Hence, experts agreed on the critical importance on STEM education and its effect on students' careers that enhance long-term growth of economic innovation (Rosenblum & Kazis 2014). The finding of this paper represents a contribution to the field of implementation of the government policies that call for education reform regarding STEM education that enhance policy of innovation. Thus, improving the structure of STEM teaching methods is recommended to accelerate the development of STEM disciplines and meet the innovative expectations. In this context, generous support is needed to prepare STEM teachers successfully with consistent follow up to their progress and practices in order to truly develop successful pathways to complete STEM programs in UAE schools. Realizing the potential of teachers as a key source of well-prepared skill-STEM students can go a long way towards developing UAE economy and its innovation goal by generating equipped STEM employees who are able to cultivate the workforce requirements.

Having said that teachers should be engaged not only in implementing the reform but also in designing its requirements in order to overcome fears and reduce resistance to change (OECD 2016). This study suggests that STEM policy should be stated explicitly in UAE and a unified guide for both public and private schools about how they can adapt and modify a successful

STEM framework should be established. Teacher' requirements should be reported in the top priorities of the STEM policy statement in UAE in order to enhance students' profession contribution in building UAE future economy. This step will be considered as an identifiable link between STEM policy and its expected outcomes. This study is limited on eight-one-sample size of participating science teachers as the main source of data to represent UAE teachers. Further studies are required to investigate math teachers' perceptions regarding STEM education and their requirements for better implementation. More research is required to understand the nature of resources that are strongly needed for STEM projects. It is also recommended to examine the extent to which school administrations are willing to overcome STEM barriers in order to support teachers' performance more practically.

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Appendices

Appendix (A): Teachers' Questionnaire

This questionnaire is going to ask about teachers' perceptions about their readiness to STEM application, the STEM barriers and the most factors that influence their STEM lesson plan.

There are no correct or incorrect answers and all responses will be kept confidential.

Section 1; Teachers' demographic information.

School type	Public ( ) Private ( )	Emirate	
Gender	Male ( )	Female ( )	
Teaching experience	1-4 years ( )	5-10 years ( )	More than 10 years ( )
Academic qualifications	Bachelor ( )	Diploma ( )	Master ( )

Section 2: Teachers' perceptions on their readiness to STEM implementation in Dubai schools.

The questions on this questionnaire relate to STEM policy implementation. For all sections, please circle

the choice that matches your perception. Use the following rating scale for Questions 1-8

5=strongly agree	4= Agree	3= Not decided	2= disagree	1=Strongly

To what extent do you believe that you are able to implement STEM education in your class?

STEM Policy Implementation in the light of science teachers' perceptions	**5**	**4**	**3**	**2**	**1**
Teachers' readiness to apply STEM: Integrating science with technology, engineering & math					
I learned effective methods for teaching STEM in my STEM professional development training					
I feel confident in my ability to teach engineering as a part of STEM					
I think engineering would take away time from important academic					
I am familiar with the cross curricula appropriate for my students' grade					
I would like to teach more STEM					
I do not think STEM fits in with teaching standards					
My administration puts emphasis on STEM education					
I think it is important to expose my students to STEM applications					

At your school, do you think science teachers are able to implement successful STEM classes?

What are the main characteristics of the teacher who is able to teach STEM?

Section 3: Barriers to teaching STEM.

What are the main barriers that prevent successful STEM implementation in your school?

5=strongly agree	4= Agree	3= Not decided	2= disagree	1=Strongly

Barriers of teaching STEM	**5**	**4**	**3**	**2**	**1**
1. Appropriate level of students					
2. Not familiar enough with the content					
3. Not enough time					
4. Not enough support from administration					
5. Teaching STEM does not fit in with standards used					
6. STEM does not fit in the curriculum of my subject					
7. STEM does not meet my students' interest					
8. Lack of materials and resources to implement STEM					
9. STEM practices is difficult to be assessed					

What are the essential requirements to ensure successful STEM implementation in your school?

Section 4: STEM curriculum planning.

How much emphasis do you place on each of the following influences to plan your STEM class?

Major emphasis = **ME,5**	Some emphasis **=SE,4**	Little emphasis = **LE,3**	No emphasis = **NE,2**

Planning STEM class	**ME**	**SE**	**LE**	**NE**
Project-based learning: the project that is easy to be done				
Meeting standards: Subjects' standards that can be integrated				
Team teachers: Teachers' advice and group discussion				
Independent search: Internet search to find out a suitable STEM practices.				
Class time and resources				
International testing: Standardized exams' requirement (TIMSS framework)				
NGSS: Next generation science standards as a STEM framework				

How do you plan for your STEM class? Do you have a STEM framework to be followed?

Proposing Social Media Policy for Schools in the UAE

Mohamad Ezzat Alkutich

Introduction

Social media usage in schools is growing promptly worldwide. It plays a significant role in educational organizations by providing schools with different tools that facilitate school activities of communication and students learning. However, bringing social media to schools raises various issues, such as technical, security, privacy and legal. These issues need to be presented in appropriate policy that organizes the use of social media in schools. In the United Arab Emirates, while social media in schools is somewhat new, it is evident that variety of its sites and applications are commonly used. However, most of the schools do not have written social media policies that organize and regulate the use of social media sites and applications. This paper aims to propose a social media policy for schools that provides guidelines on how school stockholders can efficiently and safely use social media applications in communication and learning activities. In education, the variety of studies conducted to investigate the pros and cons of using social media in education. However, there is a lack of regulations and guidelines for its use in schools. This study employed semi-structured interviews with school principals in different private schools in Abu Dhabi. Then, by reviewing the literature to discover the main elements the proposed social media policy. Moreover, analysing existing policies in different countries, and assessing the experience of different schools in Abu Dhabi to explore how they manage and implement social media. These schools were three private schools in Abu Dhabi. This paper aims to offer a policy for the use of social media in schools.

Social Capital Theory

Social media is a double-edged sword; it is subject to the way it is utilized. It also enriches social capital, which known as "resources embedded in the social structure which is accessed and mobilized in purposive actions" (Lin, 1999, p. 35). Lin (1999) claimed that social capital theory includes three key components, such as the embedded resources in social networks, accessibility, and mobilization. These components need to be used in the procedure of producing social capital. The emerging discovery Social media advanced the very early optimistic view of Lin (1999) on the internet of creating social capital. Social media has a crucial role in creating a social capital generation by online networking and platforms that

facilitate the accessibility of the embedded resources (Burke, Kraut, & Marlow, 2011). Social media has played a significant role in the way that people communicate worldwide. It offers platforms of interaction and communication for all (Porter, 2008; Cardenas, 2013). Recently, the use of social media has created critical discussions among governments, scholars, experts and educators (Pirolli, Preece, Shneiderman, 2010). Social media started to be used for different purposes, such as service delivery, collaboration, communication with stakeholders and information dissemination (Chang & Kannan, 2008; Bertot et al., 2012; wyld, 2008, Chun et al., 2010; Hanson, 2008). Regardless the advantages that social media offers, numerous disadvantages and challenges emerge. Such as privacy, security, technical and legal issues (Bertot, et al., 2012; Bryer & Zavattaro, 2011). To overcome these challenges and maintain better use of social media, scholars think that governments, organizations, as well as schools, necessitate building their policies of using social media (Vela et al., 2012; Cardens, 2013; Hrdinova et al., 2010; Freeman & Loo, 2009).

Social Media Policy

Social media differs from other policies, as it is flexible to amend due to its changing nature. Social media policy is the shared policy of conduct to guide users of an organization who share data and communicate with social media applications and sites (Mergel & Greeves, 2013). Social media policies needed for several reasons, such as staff access, account provision, user conduct, privacy and legal matters (Mergel, 2012; Hrdinova, et al., 2010; Newman, 2009). Developing policies, in general, includes two approaches, top-down or bottom-up. Conversely, social media policy, as it has to change nature, it requires collaboration with all stakeholders as it affects them all, to overcome potential disadvantages and risks.

Importance and Need of Social Media in Education

The literature includes much research claiming that social media serves essential purposes in education (Junco, 2011). These studies depict that there is a relation between student engagement and grades and using social media sites (DeAndrea, et al., 2012). Mark in his study (2011) showed that social media has a positive impact on students, such as students' engagement, interest, more control of education and more responsibility for their learning. Another study found that social media has a significant role in students' academic achievement by influencing collaborative learning, and interactive with peers and teachers (Al-Rahmi, 2013). Social media plays as a double-edged sword and has its pros and cons on its users. Thus, there is a need to guidelines that help its users and school stakeholders to understand how social

media platforms affect student's outcomes and provide them with the expected online behaviour and honour codes (Junco, 2011).

Research on Social Media Policies elements

The literature contains few studies on the element of social media policy. The available studies view some recommendations on what social media policies must reflect (Soliman, n.d.). Two studies in the US focus on analysing social media policies in local authorities (Zimmer, 2012; Cardenas, 2013). Cardenas (2013) found that half of his sample has no official social media policies. Whereas, the other half contents the elements of these policies. Such as; 1) statement of purpose, 2) account management, 3) user's conduct, 4) definition of social media, 5) social media access, 6) account monitoring, 7) content management, 8) citizen conduct, 9) record retention. Hrdinova et al. (2010) presented a new policy framework that includes eight elements extracted from 26 existing social media policies and from interviewing 32 expert officials in social media policies In the US. These elements are; 1) access to social media, 2) privacy, 3) legal issues, 4) account management, 5) code of conduct, 6) content management, 7) staff conduct, 8) acceptable use of social media.

Methodology

The methodology of this piece of research is qualitative that implement a literature review, semi-structured interviews with three principals of private schools in Abu Dhabi and policy analysis. The three principals were selected as they manage and control social media in their schools. To obtain this purpose, the researcher adopted mix methodology, including a review of previous studies on social media policies, and annualizing the existing policies of social media in schools and other educational organizations, and interviews with five principals of private schools in Abu Dhabi who manage the use of social media in their schools. This piece of research suggests a policy for social media use in schools, which is flexible and applicable to any school in the United Arab Emirates (UAE).

Results, Analysis, and Discussion

Existing School Social Media Policies Analysis

Since the researcher only found previous studies on the elements of social media policies, in this section, the researcher tried to analyse four different policies of social media in another country, namely, The United Kingdom UK, these policies were published online on their school websites. This analysis found that most of these policies include key elements which

are linear with the developed policy by Hrdinove et al. (2010) as well they add more elements, as target audience and team communication, see Table 1.

Table 1: Social Media Policies Review		
School	Date published	Policy elements
Berkhamsted Schools Group the UK	22/9/2016	Eight fundamental elements and two more elements; Sanctions and responsibilities.
OXTED SCHOOL **2** UK	May 2015	Eight fundamental elements and communication strategies
Abingdon School **3** UK	May 2015	Eight fundamental elements and Cyberbullying
St Helen's School **4** UK	July 2016	Eight fundamental elements and Cyberbullying, child protection and monitoring and review

1- Retrieved from: http://fluencycontent-schoolwebsite.netdna-ssl.com/FileCluster/BerkhamstedSchool/MainFolder/berkhamsted/about_us/documents/Policies/November-2016/3011-ICT-Acceptable-Usage-Policy-Pupils.pdf
2- Retrieved from: http://www.oxtedschool.org/uploads/document/2_0_ict-acceptable-use.pdf
3- Retrieved from: file:///C:/Users/mkutich/Downloads/ICTPupilsPolicyweb.pdf
4- Retrieved from: http://fluencycontent-schoolwebsite.netdna-ssl.com/FileCluster/StHelensSchool/MainFolder/Policies-July-2016/Acceptable-Use-Policy-July-2016.pdf

From this review, it is obvious that all the analysed policies respect the eight elements of the social media policy that developed by Hedinova et al. (2010). Moreover, many of these policies integrated more elements that fit school context. Based on the above findings, this study created a new approach to social media policy for schools by making a combination of the key eight elements of Hrdinova et al. (2010) and the new emerging elements from this review. The elements of proposed policy from this study will be presented in Table 2:

Table 2: Proposed Elements for the new Social Media Policy Outlines	
Phase	Elements
Phase 1: The Planning Phase	1- Aims and Objectives 2- Scope and Target audience 3- Communication strategy 4- Communication team
Phase 2: Implementation (8 essential elements)	1- User's access 2- Account management 3- Acceptable use 4- staff conduct 5- Content 6- Security issues 7- Legal issues 8- students' conduct
Phase 3 "Assessment"	1- Monitoring 2- Evaluation
Total: Three Phases	14 elements

Social media policies in UAE's schools

Based on the proposed social media policy in this study in Table 2, the interviews with the four school principals are developed by questioning all the proposed elements in the three phases. The interview questions to each principal try to investigate the main elements of social media policy in their schools. Names of these schools are anonymous and will be coded as School A, School B, School C, and School D. Table 3 summarizes the elements of social media policy in the first phase "Planning Phase".

The four schools share similar objectives and purposes of using social media, which is encouraging better two-way communication and students engagement; however, about 50% of these schools lack target audience. One school principal mentioned that they target students

only, which is not feasible as parents as well are main players in education, and they need to be also targeted.

Table 3: Interview findings of the planning phase "Policy elements in planning phase."				
School	Objective	Target audience	Communication strategy	Team
School A	√	√		√
School B	√			√
School C	√			√
School D	√	√	√	√

Most importantly, most of the schools lack effective communication strategies. Such as lacking techniques of how to engage parents and students in school improvement, using different methods of posting information on school pages in social media sites and applications. Moreover, all schools principals claimed that they have communication teams who are in charge of managing social media issues, but in most of these schools, there are no written policies or guidelines that show how school social media users should manage their online activities and communication.

Table 4: Findings on the Implementation phase elements of social media policy								
School	Access	Account management	Acceptable use	staff conduct	Content	Security	Legal issues	Student conduct
School A	√	√	√		√	√	√	
School B	√	√	√		√	√		
School C	√	√	√		√	√		
School D	√	√	√		√	√	√	

On reviewing and analysing the findings of the implementation phase elements of the proposed social media policy in the four interviewed schools represented by the principals, is has been found that all schools concentrate on regulatory control issues, such as, who manage social media processes, who can post, and who has access. However, almost all of these schools lack clear published guidelines or policies that explain the laws related to citizen conduct, staff conduct, and behaviour, individual professional use. Besides, all schools have departments that manage and control the use of social media pages. Moreover, the four schools have security tools to diminish any possible risk might occur by password complexity. However, they all lack clear measurement for any misuse that might occur from students, teachers and other stakeholders. As well as, the four schools do not provide social media users with training about how to react when any potential security issue occurs. On another side, 50% of these schools address legal issues as part of their social media policies and guidelines. These schools added an element of sanction for the misuse of social media, and one of these schools identified cyberbullying as another element for social media policies. One of the principals said that in his school all students have to sign a consent of protocol of social media and expected conduct.

Table 5: Phase 3: assessment phase elements of social media policy		
School	Monitoring	Evaluation
School A		
School B	√	√
School C	√	
School D	√	

By assessing the two elements in the assessment phase of social media policy in these four schools, it found that almost all schools control and monitor their pages and platforms on social media sites and applications. They respond to the posted questions from users, however, almost all the four schools lack transparent evaluation of the recent social media policy. The principal of the only school who has an evaluation process of social media policy said that every year in September they hold a meeting to review and evaluate school social media policy.

Conclusion

The purpose of this paper is to investigate and propose a new framework of social media policies for schools by recommending key elements for this new policy. This study examined

the literature and available research, and by analysing four international school social media policies in the UK, later the researcher compared the suggested elements of the new policy with recent practice in UAE schools by interviewing four school principals to give their accounts about their experience with school social media policy. As social media being more acknowledged worldwide, this study found that private schools in UAE lack having written policies or regulations to facilitate the use of social media for school stakeholders. Moreover, the literature review shows that social media policies play a significant role to organize and manage the use of social media. Social media policy for schools helps schools to provide its users with assistance to overcome any possible misuse by clear legal, privacy and security regulations. In the following section, the researcher presents the recommendations of this study as a proposal of new social media policy for schools. This policy includes points that schools should take into consideration when using social media applications. This new framework addresses ideas that are flexible to fit any school context.

Social media implications and future studies

It is evident that social media plays a significant role in creating social capital, however, when it is brought to the educational context, legal issues emerge. Thus, policymakers need to pay attention that social media might bring different problems to schools, such as sexual harassment and abuse, speech freedom, and privacy (Decker, 2012). Moreover, social media and because of its perceived anonymity, encourage users to post others data, photos and videos, which can be called Cyberbullying (Junco, 2011; Lenhart, 2007). **The limitation of this study** is that the sample focuses on the UAE schools in the Emirate of Abu Dhabi, which is cross-cultural society. **Future studies** can overcome these limitations and study other types of societies. Further studies can focus on the implementation of this proposed social media framework in this study. Other future research would focus on the impact of social media policy to minimize the negative influence of using social media sites and applications in school education.

Proposed Social Media Policy for UAE Schools

The purpose of the proposed social media policy: This policy provides schools leaders in the UAE with guidance on how better use social media sites and applications to maximize the benefits of internet and technology in teaching and learning and communication among school stakeholders. Such as students, teachers, parents. Many schools worldwide have started using social media applications in communication and teaching and learning activities. However,

most of the schools in the UAE lack written policies or guidelines that help to maximize the benefits of social media and minimize the potential risks.

The scope and the importance of the proposed social media policy: This policy fits all schools worldwide and for the UAE schools, in particular, both governmental and private schools. This policy is dynamic and flexible for more development and change, as technology is rapidly changing. Social media applications play an influential role in changing the way that internet perceived, social media added more dimension to the traditional way of delivering data and services (World Economic Forum, 2009).

Moreover, social media help policy makers in enhancing transparency and better engaging with users. Besides, social media turned internet users from passive receivers to active participants. Furthermore, social media has become extremely popular worldwide in all aspects of human social life, especially in education. To overcome any potential risk of using social media in schools, there is a need for a policy that protects users from any security, legal and privacy issues.

The Proposed Social media Policy Guidelines

In this section, all the elements of social media policy is explained,

1- Social Media Policy Planning Phase

Social Media Policy Objectives

School should explicitly address the aim of employing social media, whether it is to increase transparency, awareness, and engagement among school stakeholders.

Social Media Target Audience

The target audience of school social media policy vary. Moreover, can be divided into different segments; students, parents, teachers, school admins, leaders and other stakeholders. When dividing the audience, school social media team can choose the best social media site or application that fit this particular type of audience. For instance, Facebook and Twitter will be a right choice if the target audience is students and parents.

Social Media Communication Strategies

When school defines its objectives of using social media and identifying the target audience, then it will be easy to choose the best social media tools. Communication strategies such as kinds of posts, media formats, animated videos, etc.

Social Media Team

Schools principals should assign the team that will manage and controls social media; this team needs to have a level of qualification, communication skills, knowledge and experience in social media tools, willingness to be available long time online and the authority for immediate response when it is required.

2- Social Media Policy implementation Phase

Access to Social Media

The team or department of social media needs to provide a list of all the social media sites with their benefits and threats. Moreover, this team should select the best social media platforms that serve to achieve its objectives. This team as well should be provided with the authority of access to on school social media pages for moderation.

Social Media Account Management

It is the responsibility of social media department to manage and maintain official accounts and to represent the school when responding on any online tasks. In the association between social media team and the IT department, all new requested accounts should be approved, and any security risks should be considered as well. Furthermore, social media department should have a list of all social media sites and applications that are appropriate to school needs in achieving its objectives, and names of staff with accounts data as the domains and passwords need to be sorted.

Social Media Acceptable Use

It is quite difficult for social media team to manage the professional and personal use of social media by staff. Anyone can have access to social media sites from the personal cell phones that are why teachers should not be prohibited from using social media in school, besides many social media sites that have inappropriate content should be banned from use for students and school staff.

Social Media Staff Conduct

Teachers need not forget that they are educators, and so, they need to pay attention not to post their photos in inappropriate places or environments even in their personal use of social media. Teachers and other staff members in school should be professional and be aware when using social media. It is recommended for them not to post students photos and names in their personal use of social media, and not to have students as friends on these sites.

Social Media Content Management

It is the responsibility of social media team to manage the contents, by controlling the content establishment, posting and updating the pages. There should be a commenting policy as a

contest when posting or interacting with others. Moreover, before deleting any inappropriate post a screenshot needed to be taken and saved, the posts that need to be deleted are many. Such as, enhancing discrimination, links to other websites, hidden messages that revealing personal ads, spam and sexual contents.

Social Media Security Issues

Strict measures are needed to overcome any possible threats, these measures as; complex passwords for users' accounts to keep data safe, scanning all exchanged data as a tool of protection from hacking and viruses, staff should not get permission to log in their social media accounts using their official accounts. Most importantly, training staff to be skilful in using social media sites, how to keep secure accounts and how to overcome any potential risk.

Social Media Legal Issues

To keep social media users safe from any potential risks as a copyright violation and cyberbullying, social media team should educate the users in this regard and this team is responsible when any established compliance occurs according to the governmental law of intellectual property right protection. Thus, a contest between the social media department and users should be signed to ensure that users are aware of all potential legal issues.

Social Media Students' Conduct

The social media team is required to publish clear policy and guidelines of posting and commenting on school official pages, and students expected behaviour while using social media is also needed to be published in the official pages of social media. Misuse activities of social media should be apparent to the users, such as cyberbullying, sexual content, illegal activities, political opinions, discrimination and links to other illegal pages or sites.

3- Social Media Policy Assessment Phase

Social Media Policy Monitoring

Social media department has to be prepared to respond and monitor school social media pages around the clock.

Social Media Policy Evaluation

Continuing evaluation process helps schools to appraise their recent performance based on their objectives of using social media sites. A periodical evaluation needed to be conducted whether at the end or beginning of every academic year. This evaluation process should be based on quantitative and qualitative data. Such as, what the literature and research on social media say, and periodical surveys and interviews as indicators of the quality of social media use.

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Did National Agenda policy of Education in the UAE affected PISA results of private schools in Dubai between the 2012 and 2015

Raed Bdeir

Introduction & Background

Education is a particularly important focus of the United Arab Emirates (UAE) in general and especially in Dubai. UAE has set a target to be the best country in education outcomes and to be among the most successful countries in providing excellent education by 2021(KHDA, 2014). His Highness Sheikh Mohammed Bin Rashid Al Maktoum, Vice-President and Prime Minster of UAE, and Ruler of Dubai, launched in 2014 the UAE National Agenda targets to achieve UAE vision 2021 vision. The National Agenda covers different scoters such as education, health, economy, police and housing, infrastructure and government services. One important sector is education; it is a particularly important focus of the National Agenda as it includes eight main objectives. One of these objectives that UAE should be among the 20 highest performing countries in PISA (Programme for International Student Assessment) which measures the skill level exhibited by 15-year-old students. In the years 2009, 2012 and 2015, Dubai private schools have participated in PISA tests. Since this test is of an important value across countries around the world in general and Dubai in particular. Dubai Schools Inspection Bureau (DSIB) 2016 publication stated that schools were progressing in achieving their PISA targets results hence better student's outcomes. Through the researcher experience in working with DSIB he found that many schools were better than others in the implementation of better teaching and learning practices and their student's progress rate in achieving their PISA targets.

Purpose of the study

This research paper is a continue of a research paper that was submitted under the title "Did Private schools in Dubai improved student's outcomes when they participated in PISA assessment over the years 2009-2012 and what policies Dubai government issued to improve school's PISA results and to meet United Arab Emirate's National Agenda targets" that was submitted to a doctoral course DED 604 "Assessment and Learning". The researcher has studied the improvement that happened in PISA results in private schools in Dubai between the years 2009 and 2012. However, this research paper will study the differences between PISA 2015 and 2012 results for the same target groups and check whether schools can achieve the

National Agenda targets by 2021. The important part of this research paper is the new PISA 2015 data and the analysis and interpretation of these data in relation to PISA 2012, and how this interpretation will affect the overall results towards achieving the National Agenda Targets. The other parts of the research paper are almost of the same context. Private schools in Dubai participated in PISA 2015 with only 6798 students, while in PISA 2012 the number of students were 4974, those whom represents the different curricula in Dubai, while in this study the researcher will examine wither there are a significate difference between PISA 2012 and PISA 2015 results in the different following curricula, and which of them have the most significant difference and which PISA skill has the biggest impact. The different curricula are;

- Public MOE schools.
- Private MOE schools
- US schools
- UK schools
- Indian schools.
- IB schools

Problem statement

For many country policies and especially in Education policies, helped educational stakeholders to learn about the factors that influence the quality of the education system, hence, in Dubai it can give a holistic view of the quality of education. Miller S.I., (2010) defined policy to be as set of statements at whatever level that direct or guide individuals to formulate new policies or course of action, implement existing or new policies and evaluate old, relatively new, or soon-to-come-into-being policies, evaluate within a short and specified time. One of the tools used to explain differences in students' performance when they are about to leave their schools is PISA, which is the most comprehensive programme to assess students. Thomsom (2010) stated that PISA seeks to measure how all young adults, at age 15 and therefore near the end of compulsory schooling, are prepared to use knowledge and skills areas to meet real-life challenges. This is in contrasts to assessment that seek to measure the extent to which students have mastered a specific curriculum. PISA's orientation reflects a change in the goals and objectives of curricula, which increasingly address how good students can apply what they learn at school. PISA results provide an evidence on student's performance that can be used to do a cross-nationally comparable reference. The question that a rise is what performance outcome does Dubai private schools with the different curricula can assess students in the different performance skills such as mathematics, reading and science.

Aims and research questions

The aim of this research to study what significate improvement private schools in Dubai have made in their PISA participation of this assessment between the two rounds 2015 and 2012. In addition, which of the six curricula have the largest effect on the student's outcomes and hence skills. This will measure the effect of the National Agenda policy on school's performance and where has the school journey reached to achieve the UAE 2021 target for PISA.

The research questions of this study are;

- Is there a difference between PISA 2012 and PISA 2015 results for the different six curricula selected and is the difference of a significant importance?
- Which of the assessed skill mathematics, science and reading has significantly improved between the 2012 and 2015 PISA rounds? In addition, to what curriculum does support this improved skill?
- Have the National Agenda target for PISA been achieved or on the way to be achieved? And which of these curricula will achieve the target first?

Significance and relevance of the study

UAE in general and particularly in Dubai there is a special focus on education and on student's outcomes especially with the different curricula structure in private schools in Dubai. Therefore in 2014, His Highness Sheikh Mohammad bin Rashid Al Maktoum the Prime Minister and the Vice President of the UAE and the ruler of Dubai issued the National Agenda targets for UAE. To have highest PISA results are one of the main targets that schools needs to achieve.

Literature review and Conceptual framework

The National Agenda policy was set to achieve the UAE education vision 2021. UAE with an 80% population of people from at least 200 countries all over the world. UAE with a relatively new educational system, with two main groups of schools, which are the public and private sectors. In Dubai, there is the same structure of public and private schools. DSIB Authority of monitoring the educational outcomes of 180 private schools with 17 different curricula. This number of schools is increasing every year more than the public schools. With more than 265,000 students in these 180 private schools as mentioned in the latest publication of KHDA 2016. Public MOE, private MOE, US, UK, Indian and IB are the largest schools with students in Dubai. DSIB have started a plan since 2014 to work with private schools where they discuss each school action plan towards achieving the National Agenda targets. DSIB have set an

individual target for each school to achieve in PISA tests, which urges schools to have curriculum modification in addition to perform training programs for teachers to improve teaching strategies and hence better student's outcomes.

OCED (2012) identified PISA as an international standardized assessment that was jointly developed by participating countries and administered to 15-year-olds in educational programs. It was implemented in 43 countries in the first cycle (32 countries in 2000, and 11 countries in 2002), 41 countries in second cycle (2003), 57 countries in the third cycle (2006) and 75 countries in fourth cycle (65 in 2009 and 10 in 2010). In PISA 2012, 66 countries participated. In PISA 2015, 72 countries participate. PISA covers three main domains of mathematics, reading and science in terms of not only whether students can reproduce specific subject knowledge, but also whether they can extrapolate from what they have learnt and apply their knowledge in novel situations. PISA emphasize on the mastery of processes, the understanding of concepts and the ability to function in various situations within each domain.

The assessment takes place every three years, each of these cycles looks in depth at a major domain, to which two-thirds of the testing time is devoted; the other domains provide a summary of skills. Major domains have been reading in 2000 and 2009, mathematics in 2003 and science in 2006. In 2012, the major domain is mathematical literacy and in PISA 2015, major domain was science. Test items are a mixture of multiple-choice items and questions requiring students to construct their own responses. It is either a paper-and-pencil test for two hours, or a computer-based assessment that last for two hours and 40 minutes. With different students taking different combinations of test items. In addition, students answer a background questionnaire, which takes 30 minutes to complete, providing information about themselves and their homes. The outcomes of the assessment are; a basic profile of knowledge and skills among 15-year-old students with a contextual indicator relating results to student and school characteristics, which gives a valuable knowledge base for policy analysis and research.

Thomsom (2010) commented on the Australian experience, that Australia remains committed to the principle of equity and social justice in education and to the goal of allowing and encouraging all children to fulfil their full educational potential. To large extent, these goals are realised, as evidenced by the high average achievement levels in all three-assessment domains in PISA. However, there are number of challenges for Australian education, such as:

- The average scores of Australian students in reading literacy and mathematical literacy have declined significantly over the past few years.
- There is a large gender gap in reading literacy, with females achieving at a much higher level than males; and a gender gap in mathematics, with males outperforming females, which was present in PISA 2006 but before then had not been seen for many years.
- The relatively low performance of students in remote locations, with an average score in reading literacy almost two years of schooling lower than that of students in main city schools.

Australia has chosen to participate in PISA to monitor national outcomes on a regular basis – the challenge is to act on these findings as other countries have, to lift educational outcomes for all students. Smith (2014) stated that by using data from international assessments to illustrate the rapid expansion of testing and contrast the current turn toward testing for accountability with more traditional understandings of high-stakes examinations. Then he mentioned the historical look at the early adopters of testing for accountability, are the United States and United Kingdom, and the role of New Right ideology in their testing reform. Finally, he concluded his paper by asking whether this global transformation is moving the world toward a normative testing culture that has the potential to influence multiple facets of society.

Smith (2014) mentioned that academic tests are accountable measurers for the basic education and for an equally access quality education. The aims for many countries, in the past two decades have completed shifted towards test characteristics. Where there is a global transformation toward testing for accountability, this was identified by World Culture theorists. Hence, the establishment of testing for accountability systems. As this is embedded in the world, culture as a real tool for education reform it is less to show critical reflection. Testing for accountability as taken for granted as an education policy it is important to remember that variation in national policy remains within the different countries.

Kamens (2010) clarified that examining national policy is important because “national ministries of education typically act as agents imposing testing on schools and education systems”. Differences in national testing policy can best be seen on a rough continuum based on the presence and intensity of testing for accountability. OECD (2013) clarified that PISA assessment provides a new knowledge and skills necessary for a lifelong learning model. PISA results of the national curricula. Thus, while it does not assess students’ knowledge, PISA also

examine their ability to reflect, and to apply their knowledge and experiences to real-life issues in a reflective way. Baird et al (2011) discussed high performing six countries policies such as Canada, Shanghai-China were contrasted with European countries that generally performed towards the average, but in which there had been interesting policy impact of the tests as in England, France, Norway and Switzerland.

It is striking that PISA results seems to have been used as very successful tool for politics to drive through educational reforms in some countries as in France and England. Baird et al (2011) proposed a need for a broader and deeper study of effect of policy changes in countries by PISA results. Which will give by the end a taxonomy of mode of policies responses from different countries. Such a study would raise awareness of the variety of narratives that can be adopted in response to international tests, permitting a better-contextualized critique of policy responses contexts, as well as a wider and clearer view of the governmental influences of the global institution.

Methodology

The methodology of this study depended on the analysis of the PISA 2015 and 2012 data for the different six curricula, to compare whether these data have significance difference or not. The main research question is to find out if there is significance difference between 2015 and 2012 PISA results. The other research question is to see which of the different PISA assessment skills have significant different in each of the different six curricula. Finally, have the National Agenda target for PISA been achieved or on the way to be achieved, and which of these curricula will achieve the target first.

Research Design

To study the effectiveness of the difference of the two PISA results for the 2015 and 2012 in the different 6 curricula, a quantitative semi empirical research is performed. In addition to study which of the different six curricula have the largest significance among the PISA results in the two different years.

Sample

The data for the 2 rounds of PISA 2015 and 2012 results for the different six curricula are show in table 1;

School Curricula skills measured	PISA 2015			PISA 2012		
	Reading	Math	Science	Reading	Math	Science
Public MOE (PUMOE)	382	374	390	397	385	402
Private MOE (PRMOE)	423	428	438	434	417	431
United State (US)	471	458	467	475	474	479
United Kingdom (UK)	506	509	511	510	510	526
Indian (Indian)	506	509	511	497	488	493
International Baccalaureate (IB)	513	501	519	526	517	527

Table 1. Represent the two PISA results 2015 and 2012 for the different curricula

Research Instruments

The tests used for the measurement of the differences between 2015 and 2012 results for the difference six curricula represented on table 1 to check whether there is a significant difference between the different curricula. The researcher will conduct the following different tests;

Independent t-test

This test compare results of PISA 2015 and 2012 for the three different skills in the six different curricula. Excel program will be used to provide analysis information of the data which is then interpreted. This test is used to show if there is a significant difference in the mean of these curricula. This is the first test to be conducted on the results to help to interpret the data and describe the findings.

ANOVA test

The (Analysis of Variance Test) ANOVA test is used to perform more than one compassion using the same set of data. It is flexible and easy to use to examine the differences between the set of PISA results in 2012 and 2015. This test is used to measure the effect of the different curricula on their PISA results. If the t-test show there is a significance difference between the different means. This test discovers the interactions between the independent variables that can measure the amount of variation within the scores in the multiple comparisons conducted.

Paired t-test

If there is a significant, difference either an increase or a decline in the score of the mean or the standard deviation. To show which of the variables has a significance differences in it values paired t-test is applied after the ANOVA test. The scores must reflect the strength of correlation between the different curricula and hence generalize as to the findings and conclusions of the study.

Data Analysis, Findings and Discussion

Results for PISA 2015 and 2012 represented in table 1 of the six different curricula will be analysed to determine the statistical significance of them. This analysis will represent whether a significance difference within the different skills of the different curricula exists or not. It will try to answer the first two research final questions, and the overall findings of this research will answer the third question;

- Is there a difference between PISA 2012 and PISA 2015 results for the different six curricula selected and is the difference of a significant importance?
- Which of the assessed skill mathematics, science and reading has significantly improved between the 2012 and 2015 PISA rounds? In addition, to what curriculum does support this improved skill?
- Have the National Agenda target for PISA been achieved or on the way to be achieved? And which of these curricula will achieve the target first?

Summary of data analysis and discussions

Performing the independent-sample t-test to determine if there were significance difference between PISA 2015 and 2012 results. The results of PISA 2015 were (76.33±59.03) more than the PISA 2012 (59.48±48.14), not a statistically difference of 16.85 at 95%, t (33) = 0.735, P=0.47 ($p<0.05$). Indicating that there is no significance different between the PISA 2012 and PISA 2015 rounds for the different six curricula. Since there is, no significance difference between the PISA 2015 ad PISA 2012 results there will be no need to perform ANOVA or parried t-test for the sample selected. The next step is to perform the t-test for the different six curricula and to check if there is a significance difference between PISA 2012 and 2015 results in the three different skills reading, mathematics and science. Analysis is shown in table 2

Curricula	Df	t Stat	P(T<=t) two-tail
PUMOE	3	2.72	0.12
PRMOE	3	0.43	0.74
US	3	**0.03**	**0.77**
UK	3	16.57	0.07
INDIAN	3	4.64	0.10
IB	3	0.20	0.67

Table 2 t-test for the different six curricula comparing 2012 and 2015 PISA results

The t-test for the different six curricula comparing 2012 and 2015, showed that the US curriculum have a significance difference in their results while the MOE public, MOE private UK, IB and Indian curricula did not have any significance difference in their results. Then applying ANOVA test for the US curriculum results to check if there is a significance difference of its standard deviations. Table 3 show the analysis of the ANOVA test.

Curricula	df (1) between groups	df (2) within groups	F-Statistic	P-value
US	2	3	0.038	7.65

Table 3 ANOVA test for the US curriculum

Analysis of table 3 shows that for the US curriculum, the p value is above 0.05 and hence there is no significance different of the standard deviation of the US curriculum. T-test is now performed for the above different six curricula with the three different skills reading, mathematics and science to check if they have a significance different or not.

skill	df	t Stat	P(T<=t) two-tail
Math	11	106.22	0.00
Mathematics	11	105.76	0.00
Science	11	106.89	0.00

Table 4 t-test for the different six curricula of 2012 and 2015 PISA results comparing the three skills reading, mathematics and science.

Table 4 shows that the three different skills reading, mathematics and science have a significance difference between them with p value that is < 0.05.The standards deviations of the three skills has the significance difference this is represented in Table 5.

skill	df (1) between groups	df (2) within groups	F-Statistic	P-value
Reading	1	22	11284.32	2.55E-31
Mathematics	1	22	11186.65	2.8E-31
Science	1	22	11425.76	2.22E-31

Table 5 ANOVA test for the three different significance skills

The above table shows that for three skills the p values is below 0.05 and hence there is a significance different between the standards deviations of them. To find the correlation between any of the three skills, a paired t-test is performed to find this correlation, whether, the difference is on the there is a decline or increase in the results mean or standard deviation. Analysis of this is shown in Table 6.

skill	df	t Stat	P(T<=t) two-tail
Reading and Mathematics	11	3.42	0.00
Reading and Science	11	-2.38	0.04
Mathematics and Science	11	-6.67	0.00

Table 6 Paired t-test for the different 3 skills for 2012 and 2015 PISA results.

Table 6 shows that overall there is an indication that the Mathematics and science skills for the different curricula have the most significance different between the PISA 2015 and 2012 results.

Conclusion

To summarize all the results in the last section, to reach to the conclusion, and to answer the first two questions. The main findings of the study, presents recommendations and limitations that affected the study. Further research possibilities are presented at the end of this chapter.
The findings are:

- Is there a difference between PISA 2012 and PISA 2015 results for the different six curricula selected and is the difference of a significant importance?
- Which of the assessed skill mathematics, science and reading has significantly improved between the 2012 and 2015 PISA rounds? In addition, to what curriculum does support this improved skill?
- Have the National Agenda target for PISA been achieved or on the way to be achieved? And which of these curricula will achieve the target first?

The first and second questions were answered showing that only the US curriculum has a significance difference among the six different curriculum. Between the subjects and between 2015 and 2012 recuts. When the different PISA skills were studied for the different results in 2012 and 2015, it was clear that mathematics and science showed the significance difference in compare to reading and mathematics or reading and science. While in the last research paper that was submitted to Course DED 604 “Assessment and Learning” the data analysis showed

that PISA 2012 and 2009, have no significance difference in their results for the different six curricula selected. While there was significant difference in PRMOE, US and IB curricula results between the PISA 2012 and 2009. When the different PISA skills were studied for the different results in 2012 and 2009, it was clear that mathematics and science showed the significance difference in compare to reading and mathematics or reading and science. This is showing that there is no clear trend on where Dubai private schools road to achieve the National Agenda target is heading, especially with the national agenda have been announced in January 2014. Regarding the third question on how well private schools in Dubai have met the National Agenda targets. DSIB School Inspection key findings 2015-2016 have mentioned that only 67% of the 180 private schools in Dubai are at or above the expected level of readiness for meeting the National Agenda targets. The other 33% are either below expectations or at risk of meeting the National Agenda targets. UK and IB schools are at better state of readiness in compare to other curricula. Hence, the movement towards these targets is moving slowly.

The overall findings of this research papers that DSIB must adopt a more effective work towards meeting the National Agenda targets; Schools needs to modify their curriculum across the different grades and different skills required for PISA assessment especially in Mathematics, Science and English to meet the needed skills. Schools are moving slowly towards achieving National Agenda targets, and hence school needs to put more force and development to reach the Targets. Blatti (2009) mentioned that implementing good practices in all areas of the curriculum, purchase resources and be aware of the school's resource development. In addition to providing professional development for staff and parents as needs arise. This will lead to the continuous development of curriculum and coordinate documentation of all levels of curriculum will help achieving aimed goals. For Dubai, DSIB needs to continue in its work of inspection and monitoring of school's modification of their curriculum to meet the required skills by PISA assessment. The 33% of private schools that are not at the expected level or at risk needs to progress by the next academic year to meet their targets. This research paper has several implications for future research in the field of education and achieving of Dubai to the National Agenda targets by more detailed study of the PISA 2015 results when comparing them with the 2009 results to check how many improvements these schools have made so to measure the effect of their practices in modification of their curriculum to better achieve PISA results and hence more achievement of the National Agenda targets.

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Impact of academic progress policy and the academic standing of probation in undergraduate healthcare education: Exploring the key stakeholders' views

Senthilnathan Ramakrishnan

Problem statement

Every student entering the medical or allied health undergraduate programs dreams to sail through their desired study path smoothly. However, from experience it was witnessed that 15 to 20% of a cohort suffers to progress uninterruptedly through the program due to various reasons. Almost all higher education institutions would be having an academic progress policy or an alike, which checks and ensures a satisfactory progress of the learners until their graduation. Academic probation which is very much a part of the academic progress policy is an official warning issued to the student when his or her academic performances does not meet the university's minimum requirements to be in good academic standing. This is determined by the student's cumulative grade point average (CGPA). The GPA is a widely used tool to measure students' academic status and represented on a 0 to 4 scale and is associated with letter grades A to F in which the "A" represents an excellent performance and the associated numerical value is equal or closer to 4 whereas the "F" denotes a fail that is equal to 0. The actual purpose of academic probation is that it acts as an alert mechanism to the students whose academic performance is poor and supports them to uplift their studies. It is not intended to be punitive.

The primary intention of the research is to analyse the existing academic progress policy and the academic standing of probation of an institution that offers undergraduate education in allied health professions. According to this policy if the cumulative grade point average of a student falls below the numerical value 2.00 then the student will be placed on first academic probation. These results in the student receiving an official warning that demands improved performances on the subsequent semesters. If the student is unable to change the status of academic probation in the next semester(s) then a second and the third probation standing will be imposed before the academic dismissal, which is the final step (Host Institution, 2013). The current policy seems to be incompatible with the grading system adopted by the college. This is because a student who scores a minimum of 60% of marks is declared to have passed the module with the letter grade D. However, the grade point average (GPA) value awarded to the letter grade D is just 1.00 which is an unsatisfactory status according to the designations given

by the GPA system adapted by the college. This leads to a conflict where in a student passes all the courses in a semester with the minimum requirement that is 60% marks but still unable to progress in a normal mode to the subsequent semesters because of the cumulative grade point average value being 1.00. For those cases, academic probation will be enforced automatically because the institution's policy expects its students to secure a cumulative grade point average of at least 2.00 to successfully progress to the next semester. The resulting anxiety and demotivation to the students is one of the leading cause for them to dropout from the college.

Objectives

- The main objectives of the study were to analyse the impact of academic progress policy and to explore the key stakeholder's perspectives on academic probation in undergraduate allied health professional education.
- The study also aimed at finding how the local institution's grading system does affects the students' progress across the degree program.

Research questions

- Is the academic progress policy clearly defined and understood by the students?
- Is it appropriate to place the students on academic probation based on the cumulative grade point average value falling below 2.00?

Rationale for the study

The percentage of marks required to pass a course is 60%, which is high, and awarding a letter grade of D that equals to the GPA of 1.00 is putting the students at risk of poor academic standing. To maintain a good academic standing and progress through the study uninterruptedly students need to achieve a cumulative grade point average (CGPA) of at least 2.00 and this requires an overall 70% marks which is not an easy task in an intensive and integrated curriculum. It is very much evident that a double standard is followed here. When comparing the international standards where 50% marks is considered to be good enough to pass a subject and raising this bar further to 60% and describing the achievement of such a score as unsatisfactory performance opens up the door for debate over the assessment methods and marking criteria followed at the host organization. There is a tendency for grade inflation in following this norm and simultaneously to manage a bell curve over the results. Most universities in the UK follows 50% as a benchmark for passing a course and their grading

system awards a letter grade C which is equal to cumulative GPA 2.00 and this can be argued as a fair system that is supportive to the learners (Oxford Brookes University, 2013). Publically available information in the host institutions website it was noted that their curriculum is was adopted from an international university. When exploring the publically available policy document of that particular university it was surprising to note that they are following a different grading system in which a student who scored 50% marks is passing the course and the score equivalent or above 70% and 80% is rated to be a distinction and high distinction respectively (Host Institution, 2013). When the local institution follows the curriculum and assessment from an international university, the grading system should have been adopted to be in the same line. Furthermore the adopted curriculum is not fully contextualized and following an American model of grading (The University of Kansas, 2015) with a syllabus from another continent may lead to conflicts and as a result the students seems to be directly affected.

Is academic probation a punishment or remedial action? Universally accepted explanation for academic probation is that it is a policy that is mainly designed as a support measure to students who are having difficulties in coping up with demanding program needs. If it is not intended to punish the students who are in poor academic standing and the motive is only to lift them out of the trouble it should be a flexible policy and more student-centred than bound by numerical values. In a scenario where the current policy is strictly applied, a student who has a CGPA of 1.99 would be on academic probation and another student with a CGPA of 2.01 shall be in academic good standing. In this case it can be argued and predicted that both the students would be performing at the same level in their academics, but the one with a CGPA below 2.00 would suffer an emotional blow as a result of academic probation and this may have a negative impact over their academic performance. In the context of current study, an integrated curriculum comprising closely linked modules are delivered in each semester. Cumulatively they account for 17 to 18 credit hours and it is ideal and vital to learn these modules together than studying them on patches. However, according to the present academic progress policy the students on academic probation will not be entitled to register for more than 12 credit hours, which means they cannot register for one or two modules in a semester until they achieve the CGPA 2.00. This makes their study path incoherent and eliminates them from their peers and friends circle, which makes the learning process more difficult. This in turn raised the questions in the previous section, which the research aimed to answer.

Review of literature

According to Tovar and Simon (2006), academic probation is used as a method of punishment for the students who are not making satisfactory progress in their study. However, truly it should be a facilitation mechanism that drives the learners towards a satisfactory or good academic performance. The aim of this policy is to provide opportunities for improvement in academic performance and eliminate dropout chances. Academic probation is a policy followed at most universities globally but still under researched (Moss and Yeaten, 2015). According to James and Graham (2010), most of the higher education institutions use the academic probation policy without closely examining its merits and demerits. Lindo, Sanders and Oreopoulos (2010) questioned the value of conventional academic probation policy and conducted a study over the same policy at a large Canadian university. They found that the students who were still enrolled in the program with academic probation had a significant rise in their GPA on the next semester. The similar effect was found in another research conducted at Texas universities by Fletcher and Tokmouline (2010). However, it can be argued that the academic probation could serve as an alarm and temporarily boost the students' performance, which might disappear over a period.

According to the higher education academy report (2015), grade point average (GPA) is a grading system that represents the students' achievements in a summative examination. Cumulative grade point average (CGPA) refers to students cumulative academic achievements. GPA system is a transparent and internationally recognized method of calculating the achievement awards of academic progress. "GPA is a measure of student achievement used both during and on completion of a programme of study". Academic achievement is indicated by letter grades according to the North American model of GPA, which grades the students work in letters A to D where A is equal to 4.00 and D is equal to 1.00. However, there are various GPA systems and scales used across the world (Soh 2010). The key benefits of GPA system is that it increases the granularity, motivates and engages the students throughout their study. In addition, its international recognition gives a freedom for students to move around the globe for further studies and for employment opportunities. Apart from these, GPA is a transparent grading system than any other grading system (Yorke 2008). Academic probation is way to find the students at risk of academic dismissals and dropouts so that support could be offered to them to improve their academic performance (Kelley, 1996). Lack of academic preparation, poor study skills and difficulty to cope-up with the university life are the main causes for academic probation (Pascarella and Terenzini, 2005). A study conducted in two

private universities in Bangladesh identified nine factors that might contribute to academic probation. Poor communication skills, weak educational background and difficult grading systems are the key factors among those that would contribute to academic probation.

According to Betts and Morell (1999), students' GPA predominantly depends on the difficulty of the assessment as well as the grading standards in the field of study. Previous academic performance also plays a crucial role in students' achievement. Students who join allied health course from non-science stream school education will find this as a big challenge and are vulnerable for academic probation, which is the case in the host institution. Good academic performance is associated with good communication skills (Farooqui, 2007). English language plays a major role in academic success and the students admitted to the host college for graduate studies have to meet a very low IELTS score of 5.0. Considering the factors responsible for academic probation the incompatibility in admission criteria places the students in jeopardy of academic probation. Being in academic probation is not an ideal situation for students in higher education and is definitely not encouraging. This can be motivating only to the students who are keen on improving their subsequent performances as per the "Benabou and Tirole's model" which claims that the low ability students have high tendency to dropout from the course.

Meadows and Tharp (1996) believed that the institutions should be developing academic polices that are supportive to their students. According to Kirk-Kuwaye and Nishida (2001), if the policies and procedures are rightly placed and be supportive to the students then they will be on the right path towards their graduation. Heisserer and Parette (2002) stated that it is important to have support programs to move the students who are on academic probation to good standing. However this is not only the academic advisors or institutions responsibility because the main driving force for this should initiated by the students. Smith and Winterbottom (1970) study reported that the students on academic probation had an unrealistic high expectation of their grades and thought that their difficulties with academic achievement were due to academic factors than their personal concerns. The results of their study indicated that the students on academic probation were having difficulties in concentrating especially on the subjects that was not interesting for them and the course work was highly demanding which made them unhappy and promoted the dropout thoughts on them. The other important factors that were evident in the study was lack of acceptance of academic issues, failure to acknowledge the seriousness of the circumstances and poor motivation among the probation students.

According to Wlazelek and Coulter (1999), a major concern for many universities and colleges is retention of its students who are regarded to be on academic jeopardy because of their inability to meet with the academic standards. This group of students have poor adaptation to university environment and exhibit behavioural and attitudinal problems that leads to their emotional instability. They neither value themselves higher nor show commitment to their goals and the thought of academic dismissal occupies their minds. Academic advising and counselling seems to have a benefit on those students who are at high risk of attrition. Wellbeing of students is another factor that is linked to academic performance. Even though there were no direct relationship between these two variables explored in previous literatures, certain degree of association was found between the students' academic performance and their wellness, which was very much evident on the study conducted among nursing students in South Africa (van Lingen, van Douman and van Wannenburg (2011).

Methodology

The objective of this study was exploratory in nature and to achieve such a goal the instrumental method is ultimately a qualitative research (Guest, Namey and Mitchell, 2013), hence the study employed qualitative research design. Study population included allied health professional students and the faculty members. There was a total of 32 students and 10 faculty members who were invited to take part in this study. A formal email explaining the purpose of the study with an attachment of the student handbook, which contained the policy document, the study evaluated was sent to all the potential participants. It was expected that the participants might have read the student handbook as a part of orientation while they started their student career or academic roles. Still the policy document that is the student handbook was forwarded to them to ensure the validity and reliability of the data collected. If the students and faculty members were interested to take part in the study, they were asked to respond to the email with their willingness, which was a considered as a primary consent.

There were totally 18 positive responses in which in 10 were from the students and 8 from faculty members. Three gentle reminders were sent to enhance the sample size. Two faculty members expressed that they could not contribute to this research because of their busy schedules and prearranged commitments. No reply was received from the other students indicating why they were not able to take part in the study. Non-probability purposive sampling was used to recruit the participant for the study as it included all willing participants from the selected site. Cohen, Manion and Morrison (2011) states that when the intention is not to

generalize a concept and the main purpose is to explore the uniqueness of a group a researcher need not worry about the sample size. Sample consisted of two first year students, eight 2nd year students, four lecturers, one senior lecturer, one professor who is the program head as well along with an academic coordinator and a student counsellor. Then individual meeting invites were sent to them via email with date, time and location of the interview.

All interested participants were interviewed either personally or through online using "Skype". Before the commencement of the interview, purpose of the study was briefed again and verbal consent obtained for participating in the study and to audio record the interview. Some of the participants were not happy to record their voices and were happy for the researcher to take the field note. Interviews were conducted in privacy, confidentiality and anonymity was assured to all the participants. Interviews were semi-structured with eight open-ended questions, which is attached in the annexure. The questions were designed to explore the experience, feelings and opinions about the policy researched. These questions were validated through pilot interviews with two colleagues and minor rephrasing of one question was done at this point. Then all participants in study were asked with same questions and in the same order to ensure content and face validity. They were encouraged to express their views in an open manner and either digital audio recording or hand written notes during the interview as per the participants wish collected the data. Creswell (2014) believes that the qualitative data is better collected through few open-ended unstructured questions in an interview with participants. To yield rich descriptive data the ideal choice is open-ended questions, which asks the participants to express their feelings, views and experiences (Merriam, 2009).

This empirical search took exploratory case study design with a phenomenological approach because of the fact that the research was conducted in single site and interviews were used as a tool collect the data. According to Guest, Namey and Mitchell (2013) when the focus of the study is to explore the experiences of individuals, their faith and perception the right approach is phenomenology. They also state that if the study is on a unique concept then it could be referred as a case study approach. Ethical approval was not necessary for this study because the policy was publically available and the name of the institution is not revealed in this report. Moreover, the study was neither experimental nor interventional and the intention was only to understand the experience of the key stakeholders. Claudot et al., (2009) argues that the data collected without any intervention do not need ethical approvals in medical research. However, the context is different in the current study, which was mainly evaluating an educational policy

of an organization, but it did not aim to make any changes to the existing policy, which eased up the ethical dilemma.

Results

At first all, the interviews were transcribed from speech to a text format in a Microsoft word file. Handwritten notes were also typed and merged in the same word file. Each interview transcription was given with a false name to anonymous the participant. Review of the transcribed interview notes raised few queries and the corresponding participants were called over phone to clarify those points to ensure credibility and to validate the data. Guba and Lincoln (1989 in Mertens 1998) believes that employing this kind of credibility check ensures internal validity of the data collected from the interview. Detailed analysis of the data gathered from the qualitative interviews explored three main themes around which the findings of the study will be presented and discussed.

Process of implementing the policy

Critical insight into the qualitative data showed that there is a mismatch between the policy and the process by which it is implemented because the academic progress and the standing of academic probation is solely determined by the cumulative grade point average which is set at a threshold of 2.00. The GPA is derived from the academic performance and one would imagine that if they are passing an assessment task or the exam then it is the end for that course. However, contrasting view is visible here as the passing GPA is not the graduation GPA because the pass mark is 60, which is equals to GPA 1.00 and to graduate the students, need to achieve GPA 2.0, which needs an overall 70% Marks. There is a clear indication of incompatibility between the policy and the grading system at this institution. The below interview quote from an experienced educator who is also the academic coordinator at the college argues in favour of this,

> "Why there is this distinction where I can pass a course at 60 but I cannot exit with a credential unless I get a 70 all the way through."

The head of the programs views it in the same line, which was expressed in the interview as below,

> "If they scored above 60 they have the right to graduate."

Another quote from a student counsellor acknowledges this point,

> "The probation policy is appropriate. But the procedure in which it is implemented is not."

Evidences suggest that there are also other institutions, which is following similar guidelines. For example, University of Sharjah which is the pioneering institution in the UAE to offer medical and health sciences education follows a similar policy (Sharjah.ac.ae, 2016), whereas another local institution offering undergraduate health sciences program follows a different policy which still requires the students to score 60% marks to pass the module but this is equivalent to a GPA 2.00 (Gulf Medical University, 2016). Many QS top-ranked universities have passing grade set at 50% or 60% but the CGPA equalling the pass is 2.00. Therefore, the student who passes a module is not at risk of academic probation at these universities, which is not the case with the students at the host college. The conclusion here is that the process of implementing this policy could be reviewed and adapted to be student-centred. Perhaps the GPA system could be adjusted to allow linear increment between the grade points and the academic progress policy should not be affecting the passing students.

Support system

Educational policies should be supportive and assisting the learners. However, in the institution where the study was conducted it seems that the policy is rigid and being imposed based on the GPA. However, the purpose behind it is to motivate the students to improve their academic performance. This cannot happen without proper guidance and advice for which an academic support policy is in need here. Unfortunately, there are no such policies present at this point. The following quote from an experienced educator who is a senior lecturer at this college justifies the need for the support policy.

> "There is no point in having an academic probation policy unless you have got a support policy that sits with that and the infrastructure that actually assists those students to get out of academic probation and move forward."

To cope up with a demand of the studies and to get out of academic probation what is really needed is motivation and courage. Nevertheless, given the psychological blow that follows the academic probation status one can expect that the student would be really struggling to come out of this trouble. The presence of a support policy and necessary facilities for that is the key to overcome the emotional hurdles that hinders the academic progress. Below interview quotes from a student who is actually in the third academic probation tells the story in different view and expresses the need for support system,

> "It's putting a lot of tension. Especially from my experience, I am feeling like I am threatened. Like if I don't do good it's like my life is going to end."

With such a stressed mind-set, it will be an unrealistic expectation to think that this student would do extremely well on studies to come out of the academic probation. This student needs is an academic support to achieve realistic goals in a timely manner. Angrist, Lang and Oreopoulos (2009) concluded that the student group that received academic support showed improved study skills, better grades and a change in academic status. Another study conducted in a university in Canada suggests that it is important to identify and treat the causative factors for academic probation (James and Graham, 2010). Further Stegers-Jager et al., (2011) finding indicates that the medical students who risked academic dismissal and received academic support to improve performance were able to complete their first year curriculum than the ones without support.

Policy awareness

Primarily the end users of the policy should be completely aware of the policies of the organization and the pros and cons of failing to meet the expectations outlined in the policy should be made understood at the beginning of student life in the campus. Participant interviews exposed that the majority of the students are not aware of the policy until they face the situation of being placed on academic probation, which hinders their progress within the program. The following quotes from the interview with the head of the program justifies that there is a lack of awareness of the policy understudy, which is a concern.

> "This policy is not clear to the students. I witnessed many cases where they will not realize the threat or the danger of this action on them."

Further, the participant added that,

> "The probation system is fair here. But my fear is that the students are not very much aware of it."

A good performing student in the second year student was not at all aware of the academic progress policy and probation status, which was revealed during the interview. When asked to express the views about the policy the participant replied, "I don't know".

Another participant who is student on academic probation said that she was surprised to know that she had to register for less credit hours because of her CGPA fallen just below 2.00 and she is placed on academic probation.

"I was shocked to know that I am on academic probation. I have passed all courses that I took so far. I wonder why I should not progress with full load to graduate on time".

Jenkins et al. (1998) concluded that students rarely consider themselves as a stakeholder in educational policies and they are mostly unaware of the disadvantages of those policies.

Conclusion

From the findings of this study, it can be concluded that the academic progress policy is a fair system in place but the way in which it is enforced is questionable. The policy is very much-needed one at any higher education institution. However, the definition of academic probation needs to be revisited to ensure the passing students are not at risk. Perhaps this policy could be better if it only identifies the failing students and supports them in their academic activities to ensure they are progressing across the program without losing many years. The limitations of this research is its small sample size and the study focused on single site so the findings may not be generalizable to a broader context. The study only explored the views of policy users at many levels, but did not attempt to make any changes to the original policy due to ethical limitations.

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Appendix: Interview questions

1. What are your views about the academic progress policy and the standing of academic probation?
2. What are your thoughts about the institution's grading system?
3. How does the GPA scale adopted by the institution affect the students?
4. What is your view about the benchmark to pass a course being 60%?
5. What is your opinion about the numerical values of GPA and its associated percentage of marks? (eg. 60% marks is equal to GPA 1.00, 70% = 2.00, 80% = 3.00 and 90% =4.00)
6. What are your thoughts about placing the students on academic probation because of the cumulative GPA falling below 2.00? (This is even though they have passed all the courses but with minimum marks)
7. What do you think are the factors contributing to academic probation?
8. How does academic probation affect students' performance on the subsequent year of study?

Vocational Curriculum Development Policy" of one of the leading Vocational Education and Training Institutes in the UAE

Shenin Parackal

Introduction

More than any other sector of education, vocational education has constantly been subject to the policy reforms and changes – be it of social, economic, pedagogical, cultural, political, mainly because of its conceptual lineage that is being shared with the "*world of work*". Vocational education and training (VET) systems situate itself on an integrated platform, built on the paradigms of economic, social and pedagogical systems. In the aftermath of global economic downtrends and the strategic shift to a knowledge-based economy, the United Arab Emirates (UAE) has been instrumental in delivering nation-wide policy-reform initiatives echoing the significance of education and training underlining them as a potential nation building tools. In accordance with these initiatives, this article surveys the global VET landscape, focusing the UAE VET scenario and attempts to evaluate the "Curriculum Development Policy" of one of the leading VET institutes in Abu Dhabi, capital of the UAE.

Occupational competence and work readiness of the national workforce prioritize the list of key contributors, drivers and building blocks of an adaptive and progressive economic model. Developing the capabilities required to effectively perform a piece of work requires an economy-focused and industry-oriented competency-development model, the delivery and implementation of which is the primary focus of a VET system. As a field and sector of the mainstream education, vocational education plays a vital role in addressing the skills gap identified in the industry and provides invaluable opportunities for young people to join the workforce. As a vital underpinning of the economy (Wolf 2011), VET systems are often subject to various socio-economic and educational policy reforms that in one way or the other challenges the nucleus of any VET framework – the curricula. The relevance of a vocational education curriculum is critical to the success of a vocational schooling system (Middleton & Ziderman 1997) and is more directly subject to the policy reforms of the government (Billet 2011). Rational policymaking, reforms and related analysis in the VET landscape is very important and occasionally frequent in some geographical contexts as a response to the changes in the economic framework and industry demographics.

Problem Statement

In an economically turbulent environment, national VET policies are subject to various dimensions of reforms (Wolf 2011), in terms of employability skills and provisioning of the same. The knock-on effect on the recent reduction of oil prices largely has influenced the United Arab Emirates (U.A.E) to embark on a series of socio-economic and educational policy reform initiatives to address challenges, thoughtfully forecasted by the meticulous leadership of the country. The newly reformed National Qualification Framework (NQF) in 2010, and Vocational Education and Training Awards Council (VETAC) in 2014 could be seen as proactive measures undertaken by the visionary leaders and policy makers of the UAE as a response to cope up with the *dramatic changes* (NQA 2016) happening in the economic and education sectors in the UAE.

In the wake of the above-mentioned global economic fluctuations and UAE's policy reform initiatives to address the ever-changing work environments, it deems appropriate to have a review of the exiting vocational education policies within the current VET framework. Abu Dhabi Vocational Education and Training Institute (ADVETI) and National Institute of Vocational Education (NIVE) are two national entities in the UAE VET landscape aimed at delivering vocational qualifications and equipping Emirati nationals to contribute to the local job market in realization of Emiratization policy, UAE Vision 2012, and Abu Dhabi Vision 2030. Cedefop (European Centre for the Development of Vocational Training) is European Union's reference centre for VET study (2012) on policies and practices in designing and delivering outcome-oriented curricula discusses curriculum reforms at three levels – policy development, written curricula and taught curricula.

Aim and Objectives

Characterized by a plethora of challenges and a substantial dependence on the socio-economic structure, the VET system and related frameworks at all levels of qualification should be exposed to a comprehensive and detailed evaluation for its effectiveness in terms of adaptability and flexibility. This study attempts to review the "curriculum development policy" of one the leading vocational education institutions in the UAE against the policy objectives and benchmarks set forth by the educational, social and economic frameworks. At a broader sense and contextually situating the research within the UAE, the study aims to evaluate the current policy based on the tenets of the evaluation framework proposed by Cedefop, the European Union's reference centre for VET.

Research Questions

The policy evaluated is planned to be performed based on the following questions:-

- Does the policy address the learning outcome approaches and how are they introduced across the UAE?
- Does the policy describe how is outcome-oriented curriculum development carried out?
- Does the policy identify the actors are involved in the design? What are their roles and functions?
- Does the policy guarantee the consistence of curriculum development activities with standards and assessment criteria?
- Does the policy describe how learning outcomes combine or separate knowledge, skills and competence?
- Does the policy discuss extent to which the new curricula promote learner-centeredness and inclusiveness in teaching and learning processes?

Literature Review

Vocational education is one of the most widely discussed and diverse fields in the education industry defined by a number of academic characteristics in addition to its social and economic imperatives. The manifestation of these imperatives discussed across the broad landscape of vocational education is tied up with the development of occupational skills, the delivery of which is one of the primary purposes of vocational education (Billet 2011).

History of Vocational Education and the VET

Derived from the Latin word vocare, the term vocation refers to a call (Hansen 1994, cited in Billet 2011), direction of life activities (Dewey 1916, cited in Billet 2011) or invitation to a specialized way of life that could point either to a) an occupation or b) something that leads to a lifelong fulfilment (Billet 2011). Majority of the research literatures emphasize and connote the conception of vocations around the premises of occupation, which is concerned, with the development of a specialized set of skills required to perform a particular form of work. Throughout this study, the term occupation, which stands as the key object of vocational education is conceived within the broad premise and connotations of labour, profession, and craft or a skill (in the form of paid work). The knowledge or particularly the vocational knowledge is one of the key contributing factors to the concept of "*paid work"*, underlining the social, economic and personal dimensions of "work". Vocational education defined by

(Rauner and Maclean 2008) as the "*the entire range of skill required within and for the employment system",* is often found to be situated within the dual premises of practice of professional work and evaluation of occupational competence. Industrialization, which started in the 18th century led to remarkable social and economic reforms and to the industrial revolution, apparently gave rise to various models of Vocational Education and Training (VET) systems in the Europe.

The VET Framework

Cited as an important part of the world (Wolf 2015), VET is often perceived as both the panacea for unemployment and a mechanism for improving the opportunities of youth and preparing them for employment (Eichhorst et al. 2012). With a focus on addressing the labour market challenges and economic transformations across the globe, VET systems undergo turbulent transformational challenges marked by widespread changes in economic and educational policies (Middleton & Ziderman 1997). However, it should be noted that the relevance of VET varies significantly across clusters of countries across the globe. Middleton and Ziderman (1997) further study highlights the role played by the state by underlining the term "vocationalization" positioning the importance of training the learners before employment. The relationship between "training and employment" is shared by a variety of vocational education discourses. Patel (2012) defines vocational education as "any form of activity and experience leading to understandings or skills relevant to work". Ellstrom (1997) looks at vocational education from a "*competency*" perspective and elaborates occupational competency based on perceptual motor skills, cognitive factors, affective factors, personality traits, and social skills. In general, the VET framework is commonly perceived by various industrialized countries across the globe with underlying focuses ranging from being a delivery mechanism to improve national economics (Wheelahan and Carter 2001), a silver bullet to youth's joblessness (Eichhorst et al. 2012), to an apprenticeship support system (Hirche 2012).

Economic Factors

Cheng et al. (1992) discuss the economic considerations in education policy making and their direct and indirect effects on any education system development. The development of a new-knowledge-driven economy is the outcome of a direct effect on work force and economic structures. Furthermore, the study explains the nature of these structures and how it differs in terms of various practices and cultures across the globe. The transformational changes

happening in educational models are also brought out by the study as an impact of globalization, a situation under which the education policy demands changes, shifting the traditional economy to the new knowledge-driven and technology-intensive economy. Middleton and Ziderman (1997) in their discourses on World Bank policy research on vocational education underlines the justification of a policy research and its ability to influence the decision-making patterns of individuals and organization. The article attempts to explore public policy issues and highlights the significance of public pre-employment training programmes as investments of public resources. The study describe the result of economic policy reforms and changes to manufacturing technologies and information and communication technologies and how those influence the patterns of change in the employment sectors, skills-training systems and naturally the VET frameworks. The article also cites "weak implementation" and "*fundamentally flawed conceptualization"* as reasons for the failure of certain vocational project. The study highlights that the linkage with employers, the ability to pay competitive salaries to instructors, and sufficient management flexibility to respond to employer training needs as the characteristics of good vocational education institutions.

Stenstrom (2005) explores vocational educational policy reforms and resultant impacts in their study within the geographical VET landscape of Sweden and Finland. The study cites the practical implications associated with the VET policy reforms in terms of organizational structure, the design of workplace learning and the new models of learning at work. The competitive aspect of the global economy and the ripple effects of the same in occupational domain and the nature of work have been brought to light in this study. A reformed VET framework is being recommended by the authors in the wake of new demands for the labour market, new employee skills, and more efficient solutions for improved educational attainments. The study highlights importance of identifying, including and encouraging participation of key stakeholders - workplace, educational institutions, individuals, and variety of government, private enterprises, and community organizations in the formulation and consultation of developmental activities pertaining to policy reforms.

Stakeholder involvement in Policy Making

Conford (2000) discusses the drawbacks of a competency-based training model by citing a decline in Australia's relative international competitiveness during 1994-1997 raising concerns over the strategic mechanisms of policy makers in defining the model, which according to the

author is tangled by political and ideological elements that surrounds them. The study discusses the significance of teacher-participation in policy development committees by highlighting their role as a critical determinant and success criterion for curriculum reform policy initiatives sharing similar sentiments of McBeath's (1995). Barabasch (2010) highlights the significance of stakeholder involvement and participation of social partners in the organization and administration of VET policy reforms.

Education and Productivity

Cort (2010) explores the relevance and role of a well-qualified and highly educated workforce in an increasingly globalized knowledge economy in his study exploring the complexity of policymaking and the crisscrossing of policies across the globe. Policy discourses drawing on the conceptions of the European Qualification Framework (EQF) is discussed in this study highlighting the integration of "world of school" and "world of work" and the correlation between VET programmes and needs of the labour market. The correlative relationship between education and productivity based on human capital theory is explored by citing similar sentiments (Fenwick 2000, and Ashton 2004, cited in Cort 2010), drawing on the conceptions and discourses on human capital theory. The perception and attitude towards globalizing national policies are challenged by citing their inappropriateness by underlining the contextual social and cultural factors that influence policy reforms and development. The correlation between VET systems, workplace learning, labour, and capital and production system are emphasized (Ashton 2004, cited in Cort 2010) and categorizes the VET models into a) Free market model (exemplified in England and the US), b) Corporatist model – Germany and Denmark and c) Developmental State model – Southeast Asian societies of Singapore and Taiwan.

Policy Making Challenges

Patiniotis and Stavroulakis (1997) explores the development of vocational education policy in Greece and identifies a variety of factors as reasons for VET policy failures which includes lack of laboratories and infrastructure, defective buildings, absence of maintenance, poor libraries, low salaries of instructors, low morale among instructors and students. Williams (1999) discusses the policy failure in VET in the context of the National Qualification Framework (NQF) in England and Wales and cites political intervention and insufficient attention to policy implementation as main reasons of failure. Lindell (2006) identifies

international trends and labour market conditions the influencing factors of national policymaking. The research study describes an analytical model for the theoretical underpinnings of educational reform process sharing the sentiments of Lindensjo and Lundgren (1986, 2000) which has been directly or indirectly used in a number of educational, sociological, and pedagogical discourses in recent years (Hultman 1992, cited in Lindell 2006, Blomsterberg 1996, cited in Lindell 2006; Kim 1998, cited in Lindell 2006; Furaker 2001, cited in Lindell 2006; Ahlgren and Gummesson 2000, cited in Lindell 2006; Hedlund 2004, cited in Lindell 2006). The study describes the challenges in policy making by citing the "*paradox of reproduction*" highlighting the conflicting conceptions of "*context of formulation"* and "*context of realization"*.

Lee et.al (2000) in their study argues the proposition of a strategy formulation framework for vocational education in the backdrop of VET in Hong Kong as a response to the drastic changes in the global environment in terms of economic and social factors. Eddington and Eddington (2011) perceive VET as a contributor to skills acquisition through formal education and training and suggest factors to modify the existing VET system to accommodate possible VET future changes within the Australian VET context. A strategic framework for future VET systems is proposed based on a "policy intervention framework" and a "monitoring and evaluation framework". Hyland (2014) on the other hand draws on the concept of "*mindfulness*" and mindfulness-based interventions (MBI) and argues that structural, funding, or curriculum reforms alone will not succeed in enhancing VET provision without corresponding changes in the value foundation of vocational studies.

Curriculum: conceptions and discourses

Ertl and Kremer (2006) discuss curriculum reforms and college-based innovation and investigate effects of wide ranging reforms in the VET sector on the work of colleges and teaching personnel. The study draws the correlation between new curricula and the process of teaching and learning in VET, on the assumption that innovative curricula can potentially result in effective teaching and learning arrangements. The study probes the correlation between VET reforms and innovative VET practices, and newly structured curricula and classroom delivery and organization. Ertl and Kremer (2006) explores the development of innovative teaching designs along the conceptual discourses of didactic innovation, perceived by the authors as a

"social innovation" and proposes "criterion of newness" that could be used to initiate innovative process as a response to policy reforms.

The conceptions and discourses pertaining to the definition of "qualification", often interpreted (or misinterpreted) as "skill" is discussed in detail, pointing to the redefined version of qualification within the EQF context as "a learning outcome which has been assessed and documented by a publicly recognized degree or certificate", justification its introduction as a mechanism to promote lifelong learning and mobility in the labour market. Terminological and interpretation challenges in the definition of "curriculum", "qualification", "occupational standard", and "learning outcomes" are discussed in the Cedefop report (2012).

Billet (2000) cites the Latin origin of curriculum which refers to "run, to hasten, to traverse" and argues that curriculum have a distinct and particular meaning within the conceptions of VET. Mainstream conceptions of the term "curriculum" drawn from the table (Table 1) below (cited in Billet 2000, Moore 2004, Cedefop 2012, and Shay 2012) reveal that major discourses rely on the connotations of "planned scheme of work", and "gathered experiences", within the experience-boundaries confined within the constraints of educational institutions.

However the conceptions of curriculum for vocational education take the definition outside scope of educational institute and define them as "pathways which may not be constrained to experiences in educational institutes (Billet 2000), re-contextualization of both theoretical and practical knowledge (Shay 2012), what student experiences and learn from what is intended and enacted (Smith and Lovatt 1990 cited in Billet 2000).

Tyler (1949)	All the learning of students which is planned by and directed by the school to obtain its educational goals
Kearney and Cook (1960)	All the experiences a learner has under the guidance of a school
Wheeler (1967)	The planned experiences offered to the learner under the guidance of a school

Foshay and Beilin (1974)	The operational statement of the school's goal
Beauchamp (1975)	A written plan depicting the scope and arrangement of the projected educational program for a school
Hirst (1974)	A programme of activities designed so that pupils will attain by learning certain specifiable ends or objectives
Eisner (1979)	A series of planned events that are intended to have educational consequences for one or more of the students
Skilbeck (1984)	The learning experiences of students, insofar as they are expressed or anticipated in goals objectives, plans and designs for learning and the implementation of these plans and designs in school environments
Print (1987)	The planned learning opportunities offered to learners by the educational institution and the experiences learners encountered when the curriculum is implemented. These include the experiences that the teacher has devised for the learners and are included in the form of a written document
Quicke (1999)	Curriculum provides a framework for learning. it suggests that for all the things that could be learner these particular things have the most value; and it does this with reference to the educational needs of the students to be taught and the social and political context in which teaching and learning take place
Cedefop (2012)	Curriculum may be understood as a) a description of a body of knowledge or a set of skills, b) a plan of teaching and learning, c) an agreed standard or contract – a binding or normative standard that authorizes and regulates teaching and learning, and d) the experience of learners over time

Table 1.0

VET in the UAE – Emiratization, ADVETI, NQA, VETAC, QFEmirates (QFE) and the European Qualification Framework (EQF)

Emiratization policy aims to assimilate UAE national workforce to the labour market and shares similar sentiments and objectives of the NQA that aims to implement a contextually specific framework (QFE) for the Emirates to address the social and economic challenges. VETAC policies focus on building VET systems capable of developing and ensuring quality of vocational qualification, promoting and encouraging industry participation for the development and alignment of occupational standards (NOSS) with the qualification. QFE focus on policy formulation frameworks focusing quality standards approved by the NQA benchmarked to best international practice with special focus on the standards used in Ireland, the UK and Australia (QFE 2016). QFE is related to the conceptions of EQA meta-framework echoing UAE's aspirations and perceptions to align its framework to international levels (QMF 2016)

Methodology

The research methodology follows the tenets of document analysis approach, which constituted of examining a number of published studies, government reports, and policy documents. A dearth of research materials and discourses has directly reported the VET context in the UAE. In order to gather a contextual understanding of the vocational education and the VET system, published books directly related to the vocational education were sourced in addition to policy documents and national archives databases, policy documents, World Bank reports, qualification framework documents of the UK, Europe, Australia and UAE, OECD reports, and academic journal databases. Resources pertaining to the UAE VET systems were directly sourced from the websites of authorized institutions while the English version of few documents were sourced by visiting respective offices and departments as they were available only in Arabic.

Results, Analysis and Discussion

Review of the CD Policy

The CD policy is titled "Curriculum Development Policy" and is organized into five sections namely "Purpose and Scope", "Related Policies", "Related Documents", "Policy", "Definitions" and the version history. The policy document is found to be first developed in 2009 and latest reviewed on May 2015.

Scope Section

The first section ("Purpose and Scope"), as per the title, outlines the objectives of the policy in four statements by seating them on the four fundamentals principles or pillars of any VET system - the industry, community, labour market, and internal and external stakeholders. However, the policy does not mention or incline towards it's adherence to a couple of major and at the same time critical elements of a curriculum – the National Qualification Framework (NQF), the Vocational Education and Training Awards Commission (VETAC), the Emiratization Policy, the National Occupational Skill Standards (NOSS), and UAE Economic Vision (Abu Dhabi Vision 2030, UAE Vision 2021).

Curriculum and Qualification

The scope of the policy is too broad and generic as the policy statement goes along the lines that the "*policy applies to all curriculum development activities".* Curriculum development in this context requires to be clarified in terms of its definition by drawing a clear line between a curriculum and a qualification. The VETAC NOSS guideline document defines curriculum as a *systematic group of units or courses* characterized by factors like training goals, learning outcomes, knowledge-skills-application components, instructional contents, assessments and teacher training arrangements. Along the same lines, the policy document refers curriculum as a "*subject matter"* in congruent with the views of Print (1993, cited in Billet 2000) and Quicke (1999, cited in Billet 2000), emphasizing more on the instructional or content-development and delivery aspect of learning. These definitions clearly indicate the "planned" and "systematic" approach to an outcome-oriented curriculum outlining planned and intentional expectations described in terms of learning outcomes (LOs) and performance criteria (PC) recorded in documents like the syllabus, program guide document or training and assessment guide (TAG). This definition is congruent with and shares the similar views and perceptions of other researchers (Wheeler 1967, cited in Billet 2000, Tyler 1949, cited in Billet 2000, Eisner 1949, cited in Billet 2000, and Print 1987, cited in Billet 2000) who conceive curriculum from a "framework" point of view drawing definite boundaries constrained to the experiences in educational institutions as righty put by Billet (2011).

In this context, the policy does not explicitly define the curriculum development activities in terms of the deliverables, tasks and exclusions. This remark is made in the light of the qualification development processes outlined by the National Qualification Authority (NQA),

the government body decreed in 2010 to *establish and implement an internationally recognized qualification system for the UAE* which has commissioned the VETAC, the authority set up to manage and coordinate vocational, technical and professional education and training sector. Furthermore, it is also worth discussing about NOSS, a *mechanism* as discussed in the NQA literature, that which defines the "*eligibility*" criteria of a vocational qualification in terms of excellence, value, suitability, and probability of success. In the context of curriculum development, the NQA endorsed literature discusses the substance of the NOSS by underlining its significance that they are "*what should be considered when developing legislations, policies, process systems, occupational standards, assessment criteria, and curricula"*. Coming back to the discussion regarding the "scope", the policy does not clearly define the curriculum development boundaries across the five stages of the NOSS development leaving the ownership of those activities (specified under each stage) unanswered, resulting in the development of a "*grey area"* of concern between the awarding bodies and the registered education partners.

Related Policies Section

The "Related Policies" section lists two other policies namely "Intellectual Property Policy" and "Assessment Policy".

Related Document Section

The "Related Document" section lists three documents namely "Document of ADVETI Program and Course Codes", "Course Teaching and Assessment Learning Guide (TAG) templates" and "UAE Qualification Policy".

Key Findings

This section of the policy lists ten statements, which more or less are procedures or steps to development of a policy. From a high-level perspective it could be seen that the policy documents as such has not been updated in line with the newly reformed VET policy laid out by the government through the tenets of VETAC, NOSS and the NQA. There has not been any mentioning of the NQF anywhere in the policy document, which to a greater extend questions the validity of the policy document. Furthermore, the policy has not mentioned anywhere in the document about its liaising with Abu Dhabi Centre for Technical and Vocational

Educational and Training (ACTVET), a government entity responsible for establishing policies and standards in order to regulate VET-providers in the emirate of Abu Dhabi. Each of the statements under the policy section are reviewed and commented in the table below (Table 2).

Policy Statement	Findings
Market research and/or government directions will inform curriculum development activities.	*There is no clarification on the entity that will demand, request, or inform the curriculum development activities. In the light of the NQA and the VETAC, NOSS development stages needs to be outlined especially the "Step 1: Labour Market Intelligence and Consultation", clarifying the entity or situation that initiates the curriculum development process.*
Needs analysis will be conducted to identify the specific work pathways and competency outcomes required by target industries and/or communities. Industry sustainability is also analysed and assessed.	*Policy should discuss "Functional analysis", an activity that should be performed in line with the NOSS development guidelines that would include market research, identification of occupational skills for a particular vocation, leading to the identification of a skills-gap study within a particular industry. In addition, the role of the newly formed government entity called the Human Resource Authority (HRA) should be discussed here.*
A Business Case is to be developed for approval by the ADVETI Academic Advisory Council (AAC) prior to any budget being expended on full program level development activities. This is to include a thorough review of the market, including risks and opportunities offered by the potential program as well as any financial and resourcing implications.	

Curriculum is to be vocational or vocationally related and aligned with a specific UAE qualification framework level (and/or relevant international framework level where applicable)	*Policy should discuss the NOSS development phases and the guidelines.*
Curriculum is to be validated by industry and specialist teachers as part of the development process	*Policy should discuss the role of Recognized National Development Committee (RNDC), a formally established expert group formed to look after the development of the qualification. The RNDC is further divided into skills committee and validation committee for the very purpose of identifying the curriculum elements and the validation of the same.*
Validated curriculum and syllabus documents are to be fully developed and approved prior to a program formally commencing.	
Curriculum documents are properly version controlled.	
Versioned final curriculum is to be centrally stored to ensure that the process for policy amendment is followed and version control remains robust	
Local accreditation is obtained for all Diploma programs	*Policy should discuss the NOSS development stages and the role of ACTVET and NQA in terms of qualification approval.*
Articulation to higher level programs is sought and communicated	*Policy does not mention the articulation progress pat, the authorities included and procedures to be followed*

Table 2.0

In addition to the above evaluation, the policy is reviewed based on the questions raised in the introduction part of the study.

Probing Questions	Findings
Does the policy address the learning outcome approaches and how are they introduced across the UAE?	Partially, this could be perceived, because of the "Needs Analysis" discussed in the policy.

Does the policy describe how is outcome-oriented curriculum development carried out?	
Does the policy identify the actors are involved in the design? What are their roles and functions?	Partially, the actors are not identified from a broad general perspective.
Does the policy guarantee the consistence of curriculum development activities with standards and assessment criteria?	Yes (discussed in Table 2)
Does the policy describe how learning outcomes combine or separate knowledge, skills and competence?	No, this has not been identified or described.
Does the policy discuss extent to which the new curricula promote learner-centeredness and inclusiveness in teaching and learning processes?	No, this has not been identified or described.

Table 3.0

Conclusion

The study has considered the recent reforms in the educational sector of the UAE and especially the vocational education sector. In answer to the research questions, the results indicate both similarities and differences, with more shades of the latter. These differences points to the "paradox of reproduction" and strengthens the concerns of Lindell (2006) that the essence of the policy is lost in the translation between the "context of formulation" and "context of realization". These differences would also serve as an opportunity to fill the gaps as part of continuous improvement initiatives.

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Monitoring Quality Application of Early Childhood Education and Care Policy in Two Kindergarten Schools in Dubai

Soulafa Al Khatib

Introduction

An eager interest in early childhood education and care (ECEC) was noticed in the past decade. Early childhood years are the fundamental years that have tremendous impact on child's readiness to schooling. They are critical in human development. A great body of research especially in neuroscience describes early childhood education and care (ECEC) to be the foundational stage for learning by nurturing the development of cognitive, emotional, social and psychomotor skills that lead to success later in life. Shonkoff and Philips (2000) define early childhood as the stage from conception to age eight. UNESCO (2006) explains ECEC services to be "all arrangements that provide care and education for young children under compulsory school age, outside the home". The services are set to ensure support for children's growth, development and learning.

Education sector has grown rapidly in the past 15 years in Dubai. ECEC has been one of the sectors that has received intensive attention and shown noticeable development. The Knowledge and Human Development Authority (KHDA), which is considered the regulator of the education sector in Dubai, recognizes the importance of providing distinguished services in early childhood education. KHDA considers 0-6 age group as early childhood stage (Bennett 2009). Kids aged 4-6 may enrol at kindergartens, though this is not compulsory as per federal law no. (9). The age range changed at the beginning of the academic year 2014-2015 to 3 years and eight months to six based on a circular issued by the ministry of education.

The purpose of this thematic analysis study is to examine the case of early childhood education and care (ECEC) in two Kindergarten schools in the Emirate of Dubai by investigating the application of the policy on "providing quality in the early childhood education and care". The researcher sets as objectives for this study, (1) to identify the factors that constitute quality in ECEC, (2) to understand how ECEC is monitored in two kindergarten schools in Dubai and (3) to highlight the impact monitoring has on improving ECEC and what further steps should policy designers and implementers take to attain the policy goals. Attaining those objectives helped to answer the questions posed by the study: (1) What factors constitute quality in ECEC?

(2) How is quality in ECEC monitored in schools in Dubai? (3) How did ECEC policy and monitoring progress in Dubai? (4) To what extent are two kindergarten schools in Dubai providing quality education services in ECEC?

Definition and research on Early Childhood Education and Care (ECEC)

Wealth of findings in neuroscience and behavioural and social science has identified early childhood to be the fundamental period in human development. It is known to be the crucial fundamental stage for future learning as it fosters the development of cognitive and non-cognitive skills. Shonkoff and Phillips (2000) define it as the period of rapid growth and development, from conception to 8 years of age. It is characterised by quick transformation in physical, cognitive, emotional and social abilities. During this period, children capabilities are founded especially in the first 3 years when early experiences shape brain development. "It is a widely recognized fact that early childhood education is an integral part of the basic education and represents the first and essential step in achieving the goals of Education-For-All in particular, and human skill formation in general" (Cunha et al 2006; Hackman 1999; Currie 2001; Goodman &Sianesi 2005, cited in Woldehanna 2011, p.1). Its great importance was recognized in 2000 at the World Education Forum (UNESCO 2015)

Early childhood is a very sensitive stage that sets development paths in health, education and behaviour that might last through life. Mustard (2008) discusses that early childhood years are foundation for adult well-being and mental health. Piaget and Vygotsky were the first to argue about the importance of early childhood experiences that start from birth and their impact on later stages of life. United Nations educational, Scientific and Cultural Organization, UNESCO, (2015, p.47) reports that "the foundation of all learning are laid during the earliest years, when the basic building blocks of life are good health and nutrition, safety and support for emotional development in a caring home environment, and early and continuing cognitive stimulation through positive play and early learning".

The brain, as it is developing, is ready to learn different skills as stated by Bruner (1999 cited in BUID 100142), who also mentioned that if the nerve cells are not appropriately stimulated at this stage, they start performing irregularly and with less functionality. Bruner's (1999) argument was supported by Pianta et al (2009, p.57) who claimed that " the initial effect of the early years of education is the equivalent of 7 points on an IQ test or a more from the 30^{th} to 50^{th} percentile for achievement test scores".

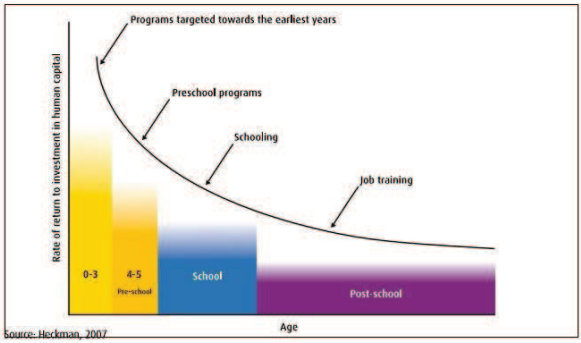
UNESCO and OECD Definition of ECEC Services

United Nations educational, Scientific and Cultural Organization (UNESCO) and Organization of Economic Cooperation and Development (OECD) define early childhood education and care (ECEC) services as including all the facilities that provide care and education for children before the compulsory age of schooling. These services ensure children's protection, health, hygiene and nutrition in a safe environment, which enhances cognitive, social and emotional development and learning. Researchers elaborate on four major evidence-based findings on ECEC that laid foundation for ECEC policies as stated by UNESCO report on Education for All 2000-2015 (2015):

1. The importance of early childhood stage in human development and laying the foundation for later education and adult well-being.
2. The role of the family in creating a stable environment and warm relationships that affect socio-emotional development of young children.
3. The importance of high quality educational programs that foster development of children's knowledge and socio-emotional skills.
4. The high economic, social and educational returns from investing in early childhood services. Governments will benefit by having more people working, more returns from taxes, less criminality and better quality of intake in primary education. Heckman's (2007) table shows the younger the targeted age group is the better the rate of the returns.

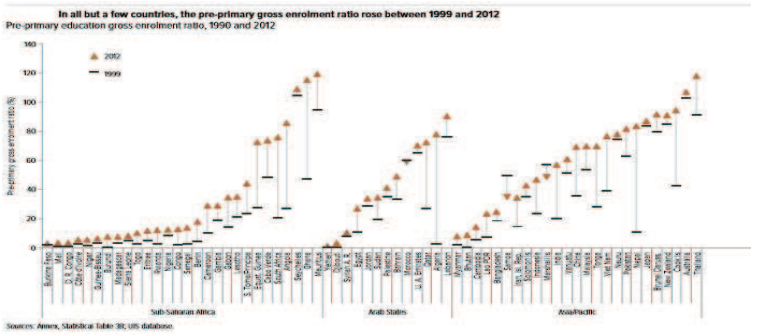
   Figure1:

Heckman's curve – rates of return on human capital investment at different ages



Policy Development in ECEC

A nation education policy is a broad statement that elaborates the main goals and priorities set by a government concerning a particular area of improvement in its educational system like quality, teachers, curriculum…etc. (UNESCO 2013). With the raised awareness about the importance of early childhood education, OEDC (2015) as well as UNESCO (2015) reports set expanding and improving early childhood education and care and ensuring quality as one of their major goals after enrolment improved. Enrolment rate has increased by 64% from 1999 to 2012 as shown in figure (2) below.



OECD countries statistics showed 6 percentage points increase on average in enrolment between 2005 and 2012. By 2012, 82% of four-year-old and 81% of five-year-old children were enrolled in early education, with the highest of 95% in France, Germany, Japan, Netherland and Norway. UNESCO Education-For-All movement that was launched in 2000 to challenge member countries to meet six goals in education in 2015 had as first goal to improve early childhood education. With this increase in enrolment rate and awareness that ECEC matters, arouse the importance of providing 'quality' education at this stage level or else many of its benefits will be lost. In OECD report, "Starting Strong III" (2012) five policy levers were identified to raise quality:

1. Quality goals and minimum standards.
2. Curriculum and learning standards.
3. Workforce quality
4. Family and community engagement
5. Data, research and monitoring

Among the 5 levers, monitoring could give a comparative research among different countries worldwide as it enhances quality by evaluating inputs (goals, standards, curriculum, workforce quality) and output (child's outcomes and development). Monitoring has become a trend among many countries that work to improve its educational system and United Arab Emirates (UAE) is one of them. Monitoring is important because it enhances quality by examining the strengths and weaknesses of any ECEC system. In ECEC, monitoring quality is a complex process. It inspects on service quality, curriculum quality, staff quality and child development and outcomes.

Monitoring service quality and staff quality are the main elements monitored in ECEC in most countries. Research on the impact of monitoring service quality on improvement is still emerging, but Cubey and Dalli (1996) claimed that evaluation is the only mean to ensure attainment of goals and aims set by any educational institution. Most countries monitor service quality using different practices and tools like inspection rating scales, surveys and questionnaires. Studies conducted in different United States settings indicated that monitoring affect improvement in quality in a way or another (Zellman et al 2008; Norris & Dunn 2004). The European commission (2011) stated that high quality ECEC affects international exam results positively. An Australian study proved that there is a relation between joining a quality pre-school program and high results of year 3 standardized test in reading, spelling and numeracy (Warren &Hasken-Denew 2013).

Early Childhood Education and Care in Dubai:

ECEC is varied across different countries. In Dubai, it is considered to include all the services by kindergartens and nurseries before compulsory education. A brief history on ECEC in Dubai shows that the first three Kindergartens were founded in Dubai even before the ministry of education (MOE) created kindergarten section in 1980. In 1987, the ministry of education established a department responsible of Kg and primary education. In 1997, another department was created with the only aim to inspect, set standards, develop the curriculum and train teachers of early childhood stage. This responsibility was transferred in 2007 to the Knowledge and Human Development Authority (KHDA), which was established in 2006 to assure quality in the education sector in Dubai. Nearly 2000 children were enrolled in 1972-1973 in Kindergartens to increase to 22,000 in 2004-2005 (Badri 2005). In 2009, 96.8% of Emirati children with the appropriate age for kindergarten were enrolled in Dubai, which overrated

many OECD countries. Statistics of Dubai's 2009 child population between 1 and 6 years of age is as shown in the below figure.

Figure 3:

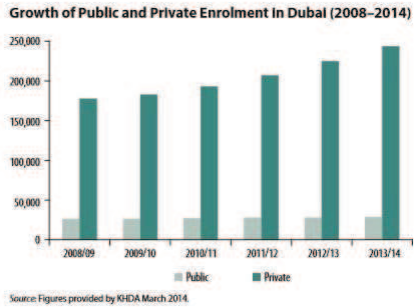
Dubai's 2009 child population by age, from 1 to 6 years

Age	Emirati	Expatriate	Total
1-2 years	4,954	12,331	17,285
2-3 years	4,005	11,753	15,758
3-4 years	3,980	11,951	15,931
4-5 years	3,738	10,849	14,587
5-6 years	3,675	11,030	14,705

Source: DSC, 2008

More than 90% of this population was enrolled in kindergartens according to 2009 statistics. While recent statistics by Dubai Statistic Center (DSC) and KHDA (2014) shows that enrolment has increased tremendously in governmental and private sectors.

Figure 4:



According to KHDA 7th, report (2014-2015), one-fifth (around 18%) of students' population in private schools in Dubai is enrolled in pre-school. The number is 46,726 (KHDA 2015).

Monitoring quality in ECEC in Dubai:

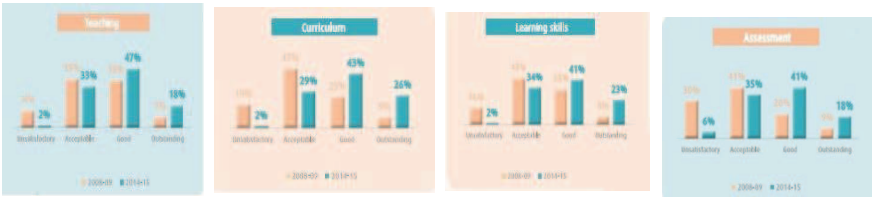
In its 1996-2000 strategic development plan, Dubai highlighted the importance of developing human resources to reach sustainable economic and social development. This plan led to more advanced one in 2010 (Dubai Strategic plan DSP 2010) which established Dubai education council in 2005. Among its main objectives was improving Dubai educational sector. What was initiated in DSP 2010 was reinforced in DSP 2015 that elaborated on the vision of shifting

Dubai into a centre of business excellence by facilitating growth and preparing workforce for a knowledge-based economy (Thaker&Cuadra 2014). To be able to reach that, policy makers in Dubai identified the need to improve the quality of education especially in the private sector. For this reason, KHDA was established by law no. (30) of 2006. Its main goals were to develop the schools. Later in 2007, the executive council established Dubai School Inspection Bureau (DSIB) which main role is to inspect private schools in Dubai and monitor quality and progress. It has set a framework that captured all the diversity of Dubai private schools. That was the first step taken by KHDA to monitor quality in all stage levels (Bennett 2009).

Since 2008, schools are inspected yearly by teams consisted of regionally as well as internationally experienced experts. DSIB used a clear framework for monitoring. Few weeks before inspection, schools provide a self-evaluation report. This report is validated later using parents and students' surveys to collect information, as well as having interview with teachers, school administrators and personnel, classroom observation and revision of students' results data. Policy makers were aware of the importance of this policy instrument to make schools accountable of their services and work to improve them.

Penninngton (2014) reported that UAE has made a great progress towards meeting the six goals of UNESCO's Education-For-All movement, but still quality is a challenge. According to Dr. Khan, UNESCO's program specialist for education, even though UAE has high literacy rate and enrolment percentage but quality remains a challenge. Dubai inspection bureau was aware of the importance of quality and worked on improving it. KHDA 7th inspection report has shown the improvement in quality of education as shown in the figures below.

Figure 5: Improvement in quality of education from 2008 until 2015. (KHDA, 2015)



As a member of UNESCO countries that participated in Education-For-All movement and with the raised awareness of the need to regulate policy on quality in ECEC, KHDA commissioned a report that presented facts and data about early childhood education for the first time in 2009.

John Bennett, who managed OECD, wrote this report. Bennett's (2009) report on early childhood education in Dubai highlighted the gaps in early childhood education policy in Dubai. He discussed the inspections carried by DSIB during 2008-2009 and 2009-2010. The results for the private kindergartens quality of education were included in the schools overall reports while for 12 other public kindergartens in Dubai in 2009, it was as shown in figure (6). Even though the data showed improvement, this was not enough because there is no reflection of other kindergartens within all stages schools.

Figure 6:

Evaluation ratings of Punlic kindergartens

Scholastic Year	Evaluation ratings of Public Kindergartens			
	Outstanding	Good	Acceptable	Unsatisfactory
2008-2009	0	6	6	0
2009-2010	2	7	3	0

Source: DSIB Annual Reports for 2009 and 2010

Another policy brief No.23 published in January 2011 emphasized the statement of "monitoring and ensuring quality early childhood education and care" (2011, p.1), considering different aspects of quality like curriculum, workforce quality, goals and standards, family and community and outcomes.

What aspects did KHDA work on to ensure quality?

Governance of Early Childhood Education: KHDA awareness of the crucial need for quality education in pre-school years in alignment with the objectives of Dubai strategic plan 2015 in developing the education outcomes to provide competitive workforce for a knowledge-based economy, emphasized KHDA support for a vision oriented toward best practices and developing and making use of expertise in ECEC community in Dubai. ECEC in Dubai is split between nurseries and kindergartens. Most kindergartens are within schools of different stages. More than one local institutions are involved in ECEC in Dubai. Department of economic Development (DED) issues licensing for nurseries. Licensing for kindergartens, quality assurance, policy development and support are provided by KHDA. Dubai Women's Establishment (DWE) monitors children care standards, while Community Development Authority (CDA) is responsible for parenting services and special needs children. In 2009,

DWE published standards for requirements for childcare settings "in order to ensure a safe and healthy environment that fosters children's physical, intellectual, psychological, social and emotional development" (Bennett 2009, p.22) (refer to Appendix A for detailed table (1) of the standards).

Financing ECEC: Majority of ECEC centres and schools in Dubai are private and for-profit that is why government financing of ECEC is too low. Even though 90% of Emirati children between 4 and 6 years join kindergartens, 70.3% of them are in private sector (Karaman, 2011).But with KHDA raised demands and requirements, private sector was forced to raise expenditure on ECEC.

Monitoring Quality: Monitoring is important for policy designers, to suggest changes for improvement. To ensure monitoring quality of early childhood education, DSIB has specialized inspectors to report on the quality of early childhood education and care. They focus on service quality, staff quality, child development, outcomes, and curriculum implementation. This is monitored every year to ensure progress and abiding by requirements and standards.

Quality of operation is observed including strategic planning to classroom planning level, staffing professional development and learning environment. "When inspection provision in the early years, inspectors will judge children's attainment and progress in key subjects using child-development outcomes that are typically found in quality early years curricula and that form the foundations of literacy, numeracy, and personal and social development" (KHDA 2015-2016). Based on KHDA 7th annual report (2014-2015), findings proved that there is significant improvement in the quality of curriculum designs and modification as well as teaching and learning as shown in figure (5) previously.

Care (Health and Safety): The most significant improvement in ECEC in Dubai is the quality of care provided to students. In 2008, 62% of schools had well to better quality of care to raise to 90% in 2014-2015 as shown in figure (7) below. School leadership and staff are aware of the importance of health, safety, and children's well-being at these early years.

Figure 7: Improvement in health and safety from 2008 till 2015.(source: KHDA 2015)

Staff Quality: This area is on the raise in all UAE. ECEC staff have a major impact on child development and acquisition. According to researches, staff quality has the major impact on the quality and outcomes of ECEC. There is a strong relation between staff qualifications and training and the quality of services (Frede et al. 2007; Frede et al. 2009). There is a difference between staff in kindergartens and in nurseries. In Dubai, qualifications are highest in public kindergartens. 2008 data (figure 8) shows that in 15 public kindergartens, 12% of teachers had a diploma and 88% of them had a bachelor degree mostly in early childhood development.

Figure8:

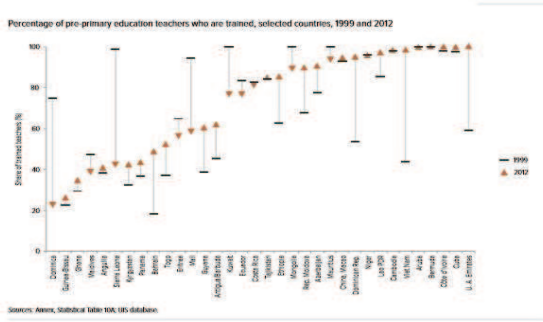
Profile of teaching staff in Dubai early childhood education services

Qualification	Nurseries	Public KGs	Private KGs
Graduate level or higher	44%	88%	67%
Tertiary diploma	11.5%	12%	21%
Secondary education	26%	--	12%
less than Secondary education	18.5%	--	--
Nationality			
% National	0.8%	97%	2%
% GCC and Arab	9.5%	3%	27%
% Expatriate	89%	--	70.5%

Source: KHDA, 2008; MoSA 2008

All staff received training that was sufficient earlier, and according to UNESCO data (figure 9), UAE is among the countries that improved in teachers' training from 1999 to 2012.

Figure 9:



As discussed, KHDA ensures the application of ECEC policy of improving quality through DSIB inspection, but this still has some challenges that should be worked on as will be seen in the revision of two kindergartens inspection reports from 2012 until 2015.

Methodology

According to OECD (2015) report, countries set monitoring systems and tools to implement policy for high quality on early childhood education and care (ECEC). Research suggests that by evaluating inputs and outputs in the process of monitoring systems, incentives are created to improve quality and performance (OECD 2015). As stated lots of monitoring and evaluation, tools have developed recently to enhance quality of ECEC with the aim of improving child's development and outcomes. Monitoring quality in all its components (services, staff quality, children outcomes and development) is done using different tools like inspections, parents, staff and students' surveys, interviews and observations. Results collected from these tools contribute to policy reform and improvement.

A good way to research on ECEC policy in Dubai would be to choose 2 to 3 kindergarten schools and use at least three different tools to analyse policy application and outcome. The researcher chose two kindergarten private schools because of the time limit and the need to refer to more than one inspection report and have detailed comparison based on the themes set. The researcher intended to use mixed method approach, starting by conducting a parent survey, then having interviews with the schools principals and finally analysing KHDA reports of these

schools over 3 years to check progress and benchmark them with two top ranking schools in Dubai. The researcher faced an obstacle, which forced a change in the methodology. There was no possibility to conduct the survey for two reasons. First, the schools have already conducted similar surveys for KHDA inspection and for school purposes so it was not appropriate to ask parents to do it for a third time. Second, the schools were not comfortable in sharing survey results because they are restricted to school use only.

The researcher resorted to the usage of qualitative method, in particular exploratory thematic analysis. Thematic analysis was chosen because "it offers an accessible and theoretically – flexible approach to analysing qualitative data," as stated by Braun et al (2006, p.2). Holloway and Todres (2003) claim that thematic analysis must be considered as a foundation stone for any qualitative analysis. Before conducting any other form of qualitative analysis, researcher must master thematic analysis. Braun et al (2006) argue that the most important characteristic of thematic analysis is its flexibility, which helps in providing well – detailed account of the data. The researcher chose thematic analysis as a constructionist method that will help in examining the ways ECEC policy is put into action, how it is monitored and what more should be done to make it effective.

Two kindergarten schools were chosen for the research. The KHDA inspection reports of these schools over three years were reviewed for specific themes related to quality in ECEC. Those reports were then benchmarked with two top performing schools in Dubai. Two half an hour, open-ended interviews were conducted with the school principals. They will be referred to as principal 1 and principal 2 when discussing their responses. The principals were informed of the nature and purpose of the research before starting the interview. Participants' responses to the five interview questions were recorded in writing during the interview, as they preferred not to audiotape their answers. The interviews discussed the process followed by schools to ensure quality of ECEC and check their opinion about what needs to be done or what support is expected from the government to reach goals set for this policy.

Analysis of Interview Responses

Answers given by both school principals were quite similar in different questions. In question one the principals were asked to define ECEC and discuss what consists quality in ECEC. Both defined it as the stage when children develop their cognitive, emotional, social and psychomotor abilities. A very important stage is why children need intensive attention and care.

They need to be well monitored. When discussing quality, Principal one said that quality consists of all the factors that affect children development starting from services in education provided by the government to the services provided in the school environment whether related to academic issues or to children's health and safety. Principal 2 provided a similar answer but he elaborated a bit more on staff quality in facilitating the child's learning journey and ensuring good outcome and the care provided by the school and cooperation with parents which is of high importance.

In question two, principals were asked how they monitor service quality and what instruments they use to monitor to ensure effective adherence by the policy. Principal one said that as a school, there is continuous follow up on teachers as well as children's performance. There is a continuous evaluation of staff quality performance to ensure quality teaching. Curriculum is reviewed yearly for modification. Surveys are sent to parents and staff and results are analysed and used for improvement. Principal two also discussed curriculum revision and staff monitoring. He/she also discussed surveys sent to parents and staff by the school and by KHDA. He/she mentioned that monitoring is not only done by schools there are systems in governments worldwide that monitor education and this led us to question 3.

When asked about what supports the most in ensuring quality in ECEC in question three, both principals highlighted the role of DSIB (Dubai Schools Inspection Bureau) in raising schools awareness about the importance of monitoring education systems to help development and progress. They think that the detailed recommendations they receive, help them focus on the area that need more work. In question four, the principals discussed the challenges they face in ECEC. Principal one considered funding and government support to be the most important challenge. He/she said that kindergartens fees range from maybe 5000 to 70,000 AED. If the fees were low, the services would not be of a high quality and if the fees are high, not all parents can afford them. That is why the government has to play a role in supporting kindergartens financially. Principal two considered staff qualification and experience as well as parents awareness to a certain degree as challenges.

Finally, principals were asked to give recommendations for better results in ECEC policy. Both principals gave recommendations according to the challenges they were facing. Principal 1 felt that there must be a system set by the government to financially support kindergarten schools. He/she also suggested that instead of dealing with more than one federal and local organization

involved in ECEC, it would be better to combine them all in one single institution dealing with everything related to kindergarten. Principal two assured that Dubai government has set clear standards for universities offering programs that graduated teachers but he/she thinks that more attention should be given to attract learners to early childhood education programs.

It was noticed that principals' responses were concise and not much detailed, but they emphasized the role of inspection in monitoring policy in ECEC quality. They also highlighted the different areas to be considered when ensuring quality. They were aware what steps to take to monitor quality in ECEC and the importance of raising quality at this stage. Teachers' quality performance was emphasized more than one time during the discussion with the principals, which highlights the importance of this area.

Document Analysis

Three-year reports of two kindergarten schools in Dubai were analysed in details to check how better understanding and application of policy goals and components has raised school grades from acceptable to good. The following comparison table summarizes what was stated in the first two reports when the schools were at an acceptable level and the last reports where schools improved to be good. Those reports helped in understanding what was missing in each theme and how better application of standards produce better results in policy application which is reflected in school performance.

School 1:

Themes	**Acceptable**	**Good**
Curriculum	Broad and balanced quality of support is acceptable. The use of evaluation information to support children learning is still in a developing stage.	Stimulating, balanced and inclusive curriculum. It still needs development to improve support for special needs students
Teaching	There is no raised quality of learning. There is a need to improve monitoring by senior leaders to reduce inconsistency.	Teachers are skilled in planning and have good subject knowledge and understanding of students' development.

Outcomes	There should be more specific analysis of student development and progress are not systematic to improve learning.	Children attainment and progress were good.
Health and safety (care)	Children are happy and safe.	Very well monitored and secured campus. Children are looked after with great care. Healthy eating is reinforced.
Parents' relationship	Parents support learning.	Parents are supportive and have positive attitude towards school. They are pleased with education and support provided for their kids.

School 2:

Themes	**Acceptable**	**Good**
Curriculum	Curriculum has developed to an acceptable level in providing more varied and interesting learning.	Curriculum design was of a very good quality. It has clear rationale and is mapped vertically and horizontally and showed clear progression. Curriculum is modified according to special needs students and enhanced by using UNESCO themes.
Teaching	Quality of teaching is acceptable but sometimes was less effective because of lack of classroom management.	Quality of teaching was good. Teachers used time and resources effectively. However, there is still no consistency in promoting critical thinking skills.

Outcomes	Learning skills were acceptable but there is no good attainment in certain subjects.	Attainment and progress were good. Students' learning skills improved and children enjoyed formal and informal learning.
Health and safety (care)	Students were safe but there must be improvement for support for special needs children.	There are rigorous procedures to safeguard children. Children are well cared for and they are taught to follow healthy eating habits.
Parents' relationship	Parents' school relation was positive.	Parents are very satisfied with the level of education, care and support provided by the school. They have positive and interactive relationship with it.

Benchmarking results of these two schools with an outstanding one in Dubai, the following was noticed according to the different themes. The outstanding school has abided by all the criteria set for each of the themes or standards given by KHDA to monitor quality (refer to table 2 in Appendix A for a sample).In all standards, criteria set for outstanding performance were attained or even exceed by the outstanding school in comparison with the other two schools (1 &2) who partially or not fully attain those criteria.

Concerning the curriculum, the outstanding school had a curriculum with a clear rationale, breadth and balance, planned to ensure structured progression based on students interests and goals, which was lacking in schools one and two or not well developed. . The curriculum is modified to be stimulating, engaging and challenging for all groups of students. This was found in the last two reports in schools one and two, but it was not fully demonstrated. Teaching was very effective in the outstanding school in all subjects in almost all the classes while schools one and two had acceptable to good lessons and not in all subjects. Consistency of needed performance in all the school was lacking in schools one and two. Teachers had very good

knowledge of children development and how they learn. Classes were very well managed. Teachers provided opportunities for critical thinking and independent learning skills in the outstanding school, while this was an area that schools one and two had as a weakness and needed to work on improving it.

In the top ranking school, children demonstrated skills above KG curriculum learning outcomes and standards. There is outstanding progress and high quality of support was given to special needs children. Looking back at the table, children of schools one and two had well to acceptable attainment and there is no steady progress or progress is only good. The outstanding school procedures for ensuring children's development and health and safety were detailed and very secure to protect children and shield them from any kind of abuse. Accommodations and resources were of highest quality. There are well resources areas to stimulate play and adventure. Children adopt safe and healthy life style and diet. This theme is almost similar with schools one and two, even though in one and two, it is not very elaborated.

Parents in the outstanding school are more involved in life and work of the school than those in schools one and two. Ensuring quality in ECEC is a long process and to fully attain it, schools need to understand the importance of working on each theme and evaluate it based on the criteria set by KHDA to ensure quality. Partially fulfilling them, does not lead to the result sought. Even though there was good progress in ensuring quality in ECEC as shown earlier in KHDA 7th report, there are still certain recommendations that should be considered.

Conclusion and Recommendations

As it has become clear that supporting children's development at early stage has great impact on future economic returns and better societal and educational outcomes, grew the need to ensure quality in ECEC, which became on the agenda of most countries around the world. Even though progress was seen in the number of children worldwide joining ECEC, not enough was done to ensure the quality of education given at this stage. It needs time and intensive monitoring to reach its goals. In Dubai, it has shown good progress from 2008 until 2015 especially in care and health and safety but teaching quality and learning outcomes still need work. Outstanding schools in Dubai, which are only 14, have applied all criteria set and sometimes-over passed standards. Based on principals' interviews and school reports, DSIB are providing very clear and detailed guidance for schools to reach the goals of ensuring quality in ECEC but some recommendations still need to be considered.

1. Ensure adequate financing for ECEC whether private or governmental. While it is highly recommended to increase the number of governmental kindergartens to encourage enrolment of children of low-income families.
2. Set policy of making ECE compulsory to ensure appropriate care and development of young children and raise public awareness of the importance of investing in human capital at an early stage.
3. Measures of quality assurance must be followed effectively to ensure attainment of policy goals.
4. Ensure that the monitoring system used contributes in policy reform and quality improvement.
5. Take further steps to ensure quality teaching by attracting qualified and specialized early education graduates and intensively training existing ones.

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Appendix A

Table 1: Dubai Women's Establishment, Standards for Early Childhood Care (DWE), 2009.

1. Licensing and administration

The childcare provider should be licensed by the relevant Government authorities in accordance with the prevailing laws. It should be administered by a licensed person who is responsible for its organisation and operation in accordance with a policy and procedures manual that complies with the National Standards, including record keeping for children and staff and a system for admission and accounting.

2. Building and equipment

The childcare building should be a safe and healthy setting that comprises ample indoor and outdoor areas proportional to the number and ages of children. It should be equipped in a manner that produces a pleasant setting satisfying the needs of children and stimulating their physical, intellectual and social development.

3. Child care organization

The environment shall be administered and organized in a manner that ensures the continuous supervision and care of children by an adequate number of qualified careers and assistants, proportional to the number of children as set out by these Standards.

4. Care and learning activities

Provide activities that foster children's physical, intellectual, social and emotional capabilities, taking into consideration each child is individual needs and abilities, based on a scientific system of observation and assessment.

5. Safety and security

Take all necessary measures to ensure that children are safe and protected against risks both inside the nursery or childcare centre, and during outings, and that all staff are fully aware of the safety and security requirements and procedures.

6. Health care

Promote the good health of children and take all necessary precautions to prevent contamination and the spread of diseases, with appropriate measures for dealing with injuries and sick children.

7. Nutrition

Provide children with meals and drinks in adequate quantities, variations and at set times, to meet children's nutritional needs, in compliance with their individual dietary requirements.

8. Partnership with parents

A close cooperation should be developed between childcare staff and children's parents and guardians in the best interest of the child, through exchange of information, periodical reports and continuous enhancement of their knowledge about the educational aims and objectives.

Table 2: A sample standards criteria by KHDA (2015).

Outstanding	**Very Good**	**Good**	**Acceptable**	**Weak**	**Very Weak**
1.1.1 Attainment as measured against authorised and licensed curriculum standards					
Most students attain levels that are above curriculum standards.	The large majority of students attain levels that are above curriculum standards.	The majority of students attain levels that are above curriculum standards.	Most students attain levels that are in line with curriculum standards and a few are above.	Less than three quarters of students attain levels that are at least in line with curriculum standards.	Few students attain levels that are in line with curriculum standards.
1.1.2 Attainment as measured against national and appropriate international standards					
In external examinations, most students attain levels that are above national and international standards.	In external examinations, a large majority of students attain levels that are above national and international standards.	In external examinations, the majority of students attain levels that are above national and international standards.	In external examinations, most students attain levels that are in line with national and international standards.	In external examinations less than three-quarters of students attain levels that are at least in line with national and international standards.	In external examinations, only a few students attain levels that are in line with national and international standards.

Exploring parental involvement policy: The case of a middle school in Dubai

Zahra Zamani

Introduction

As students reach, upper levels and experience adolescents tend to get further from their parents (Steinberg & Silverberg 1986). Studies conducted in secondary schools indicated that students get higher grade when they benefit from parental involvement (Deslandes et al. 1997; Dornbusch & Ritter 1988). Epstein and Connors (1995) argue that however parental involvement in all grades is necessary, type of involvement change as students go to upper grades. High level of parental involvement seems more necessary in elementary than in the middle and secondary schools. While, in upper levels the important point is to know that which forms of parental involvement is important and how parents should shift their involvement type. Due to the outcomes of different studies during thirty years, students benefit from their parents' involvement in their schools, regardless of their socio-economic status (Henderson & Berla 1996). Result of a research (Spera 2005) indicated that students in upper classes welcome their parents' encouragement. Even though, educators count different activities as the process of parent involvement (Anderson & Minke 2007), some of the parents consider parental involvement only as taking their children on time to school and solving their private home issues that may negatively influence on students (Young et al. 2013).

Parental involvement is a subject, which is still not explored a lot in United Arab Emirates (UAE) (Al-Taneiji 2008). Although, there are few studies that are conducted in this country and city of Dubai about parental involvement (Al-Taneiji 2008; Al-Taneiji 2001 cited in Al-Taneiji 2008; Darabool 1994), yet there is a gap in literature about perspective of parents regarding this issue and its related policy in the middle school level in this context. Purpose of this study is to understand awareness, perspective and practice of parents about their involvement in private middle school of Dubai, means grades 7, 8 and 9. By using qualitative case study would explore answer for the below questions:

1. How are parents involved with school?
2. How effective and important do they consider their role in their child improvement?
3. What are the parental involvement challenges for parents?

Except adding to the literature, due to the lack of research in parental involvement in the context of Dubai and the UAE as already was mentioned, conducting this research would benefit schools and parents as well. It informs them about the importance of supporting parents to encourage them for more involvement with the schools with the purpose of growing people that are more successful.

Literature Review

Education policy can be defined as a statement that is designed in order to reach specific aim. Policy can cover different issues and can be implemented in different levels (UNESCO 2013). The effort of educational related policies is to solve challenges in order to make informed population. Educational policy has deep influence on schooling in the Middle East (Sunal & Mutua 2013).

Based on the literature review of the empirical researches, this concept is not homogeneously defined or measured by researchers. Each research counted different types of behaves or attitudes as parts of parental involvement issue (Bakker & Denessen 2007). Therefore, as Georgiou (1997) suggested it is more preferable to look for "special behavioural indicators" instead of focusing on finding "universal" elements, which are misleading (p. 206). Parent involvement can be viewed from different viewpoints and can be referred to variety of activities from being involved in school activities to a broader angle of parents' behaviours at home or their attitudes towards their children's school related issues (Bakker & Denessen 2007). Fantuzzo, Davis and Ginsberg (1995) believe that any behaviour from parents, which influence students' school achievement and cognitive growth, can be considered as parental involvement.

For example, attendance in parent-teacher meetings; participating in parents-teacher association; undertaking volunteer activities in schools; following up children's school development; helping students with their homework; encouraging them; helping students in reading; and talking and caring for them. As was mentioned earlier, rather than observational behaviour, parents' view, values and attitude also can be considered as part of the parental involvement activities (Grolnick & Slowiaczek 1994) like knowing their children's friends; raising them in a way to be a responsible citizen (Desforges and Abouchaar, 2003), and generally having a sense of worthiness for their children's educational progress (Hoover-Dempsey et al., 2005).

Al-Taneiji (2001 cited in Al-Taneiji 2008) by combining Epstein (1995) and Moore (1990) theories, categorizes parental involvement to five different types. The most important type of involvement is home parenting. This type of involvement covers home management, parents' value and the amount of time they share with their children and the quality of their interaction (Kellaghan et al. 1993). This type of involvement covers caring about students' health as well (Epstein 1995; Moore 1990). Helping students with their homework is the second type of involvement. Some studies show that when parents help students with their homework, they perform better in school (e.g. Keith 1992; Xu & Corno 1998).

Third type of parental involvement is about parents' communication with schools. This communication should cover both formal and informal interactions like calling and meeting (Anderson & Smith 1999). Forth level of involvement is about involvement in activities inside and outside the school. The results

of a research (Young et al. 1997) showed that parents' involvement alongside with their children in different types of activities directly is linked to students' academic success. Fifth involvement type is related to decision-making. There are different perspectives about this type of involvement however; some studies show low desire of parents for this type of involvement (Brown et al. 1994) but some others indicate that they like to participate in decision making because not always they agree with school decisions (DeLaney 1997).

Theory of planned behaviour (Ajzen 1991) focuses on decision-making. According to this theory, three layers of behaviour influence human beings: "attitude and believes", "subjective norms" and "perceived controls" (cited in Bracke & Corts 2012, p. 193). The attitude of people are different; some parents think they are not qualified enough to be involved in their children education and they believe schools are responsible for students' education while some other parents think they are qualify to be involved in academic progress of their children. Some parents deal with "subjective norms" (p. 194) as a reason for not doing their parental involvement completely like them may not have the knowledge and examples of parental involvement. Finally, another reason for parental involvement can be related to the controlling factors like flexible working hours or accessibility of transportation.

Hill and Taylor (2004) suggested social capital as a solution for more involvement of parents with schools. They argue that if parents were involved in school life and make good relationship with school, they would be able to help students more by participating in conferences and meeting other parents. Parents can share their experiences and in this way, they would gradually be familiar with school expectations and guidelines.

By entering the middle school, a significant difference would be experienced compared to elementary school, like experiencing a more bureaucratic system, which have more teachers, and curricular alternatives (Dauber & Epstein 1989; Hill & Chao 2009). By these types of changes and developments, students' academic performance often declines (Barber & Olsen 2004; Eccles, 2004; Gutman & Midgley, 2000), whereas, in these years, students need to achieve educational or occupational skills that would be necessary for their future (Eccles & Harold, 1993). These types of contextual transformations at early adolescence rises the possibility that students may not get their possible improvement that they need and not be able to recognize importance of their parents as sources of their support. A qualitative case study conducted in China showed teachers perspective about parental involvement. They believe that students' higher level of social and academic achievements would be the result of parental involvement. They liked to see more parents' involvement but they argue that historically, teachers' power is more dominated in educational system (Zhao De & Dolmage 2006).

Studies explain about different factors that cause decline of parental involvement in the middle school.

Background of parents and their educational level is one of the factors; as students get older and go to upper grades, their courses become more complicated and parents sometimes do not have enough knowledge to help students any more (Hill and Taylor, 2004; Hill and Tyson, 2009; Trung and Ducreux, 2013). The second barrier for parents for having less involvement is related to their job and consequently lack of time (DCF-00924-2008 cited in Karıbayeva & Boğar 2014). Some other elements that contribute to lack of parents' involvement is families' welfare level (Furstenberg et al. 1999). For overcoming lack of parental involvement, schools can arrange free courses to educate parents and encourage them to be more involved with their children's study trend. In addition, they can regularly have meetings and events with parents (Desforges and Abouchaar, 2003). However, it is noticeable that schools may have some problems to go for the above-mentioned solutions like financial problems, and teachers and administrators lack of time (Karıbayeva & Boğar 2014).

A survey study (Kuperminc et al. 2008) is conducted among Latino middle and high school students and their teachers. This study is supported by theory of social capital. Parental involvement and educational adjustment was more related in high school level in comparison to secondary schools level. Another study (Matejevic, Jovanovic & Jovanovic 2014) evaluated correlation between style of parental involvement and students' educational achievements in adolescents. Study was developed base on the theory of Baumrind (1991) and Epstein (1995). Sample consists of adolescents and parents. Parenting Styles and Dimensions Questionnaire (Robinson, Mandleco, Olsen & Hart 2001) was used for collecting data. Outcome of this study show that mothers were more involved with school and their children study trend than fathers were.

Authoritative parenting style was more correlated with mothers' involvement. This research explains about importance of schools in informing parents about their parenting style and role in their children academic success. Results of a survey (Bracke & Corts 2012) conducted among parents of five elementary schools by using theory of planned behaviour (Ajzen 1991) showed that regardless of parental involvement level of parents, they all were aware about the importance of their involvement. Majority of parents who were not involved, were referring to some examples that was related to subjective norms for example they were not involved because their neighbours also were not involved. In another word, they lack a role model to follow and to know about types of parental involvement. Bakker and Denessen (2007) argue that qualitative in-depth interview research is more appropriate to be conducted in this area instead of using structured questionnaire and doing quantitative study. This paper would qualitatively explore perspective of parents.

Parental involvement policy in Dubai

Knowledge and Human Development Authority (KHDA) is an organization responsible for academic related issues and educational progress of private schools in Dubai (KHDA 2017). Parental involvement

policy is assigned by this organization in 2012 (Al Sumaiti). Due to this report, despite the fact that research showed essential role of parents in students' education, yet, many parents believe educating students is only schools' responsibility (Al Sumaiti 2012). This policy refers to Epstein's (1995) theoretical framework for defining parental role. According to this report, six different types of involvement can be determined for parental involvement in Dubai private schools:

Parenting in home means child rearing; building an efficient communication with school; creating ways by which parents be able to involve with school actively; supporting students with their education at home; considering role of parents as a part of decision making; and harmonizing community services with family demands and needs in order to serving the community (cited in Al Sumaiti 2012). In the context of the UAE alongside with situation of home and structure of the family, parental involvement also influences student achievement. Parents in UAE mostly perform their parenting role in home and few of them involve in activities, which are managed in schools (Drabool 1994). Besides, teachers also would communicate with parents for informing students' low level of progress (Al-Thaneiji 2001 cited in Al-Thaneiji 2008).

A study by managing a focused group discussion explored perception of students who came from seven different states of the UAE. Sample comprised of randomly selected, 180 students from 18 schools. The purpose of this study was to explore opinion of secondary school students regarding their preferred form of parental involvement and the possible difficulties that they and their parents may face with. The result of this study indicates that students value their parents' involvement and they found it essential for their well achievement. They argue that schools are facilitators of communication between schools and parents (Al-Thaneiji 2008). This paper focused on perspective of students in grades 11 and 12. The intended research would concentrate on parents' perspective of the middle school students.

Methodology

This research would be viewed from the perspective of relativism. Based on this ontology, reality can have different interpretations (Hammersley & Atkinson 1983). Qualitative approach would be used in this study in order to give deep understanding of the reality (Sofaer, 1999); perspective of parents regarding parental involvement in this study. Case study gives possibility of understanding different aspects of the reality (Stake 1995). Site of the study would be private middle school in Dubai. Population of the study is parents of students who are studying in the mentioned schools. The case needs to be representative of the population (Cohen, Manion & Morrison 2011). Accordingly, purposive sampling is the preferred sampling method for choosing the proper school for this research.

The most applicable data gathering method in most of case studies is interview (Yin 2009). Semi-structured interview is used for collecting data. By interviewing four people reached the saturation level.

Interview protocol that is developed by Al-Taneiji (2001) in the context of the UAE is slightly modified to be used in this research. This guide is based on the theories of Epstein (1995) and Moore (1990). Each interview conducted between 90 to 100 minutes. With interviewees' permission, their voices were recorded and notes were taken while interviewing. Content analysis is the analysing method for interpreting interviews. By using directed approach in content analysis, there is a chance of coding based on the previous researches and theories (Hsieh & Shannon 2005). By doing analytic coding, data can be interpreted deeply (Cohen, Manion & Morrison 2011). Data were analysed under four themes: Parenting at home, communication between parents and school, parents' involvement in classroom and school activities, and Challenges for parental involvement. Connection between content and themes were considered. Besides, previous studies were used for supporting the results in order to raise research reliability (Baker 1994). Parents' involvement policy in Dubai is accessible online for public. The report of the policy is written by Al-Sumaiti (2012). Guaranteeing "confidentiality" of data is significant ethical issue in a research (Fraenkel & Wallen 2009, p. 56). Guarantee is given to interviewees that only the author of this paper and just for the purpose of this research would use the information they shared.

Results, Analysis and Discussion

Parenting at home

In general, parents understanding about their parental duty in home covered a range of activities like helping students in their education, following their study trend, their relationship with their children and providing an emotionally safe environment for them. Parents agreed that in this educational level, students are able to do their personal preparation at home for going to school like the one anything related to their appearance. Among all parents who were interviewed, only one of them pointed that guiding appearance of child, in this stage, is still parents' duty:

> "Every morning I check to know how she is going to school. For example if she wears an earring which is not appropriate for school environment, I ask her to change."

Most of parents believe that in the middle school, in contrast with elementary school, helping students in their homework should be indirect. In another word, parents' role is more toward mentoring students' academic progress. This idea is in line with Epstein and Connors (1995) idea about change in parental involvement type as students go to higher grades. They all mentioned that they know if student has any assignment, project, quiz or homework during the week. They all agreed that when students are weak in one course or when they have a question, parents should be available and it is important for parents to study alongside with students. One of them emphasized that she always is one-step further than her child is.

> "I always know what is the next title that she is going to study next week in Biology because I know she would come up with some problems in this course and I like to help her. I love to show her that I am supporting her."

As mentioned above, they all emphasized a lot on weaknesses of students and their effort in helping them to raise their knowledge, ability and skill in that specific course. It is noticeable that only one of the interviewees said grade is not important and only students' knowledge is important. There is a direct link between students' achievement level and academic expectation of their parents (Neuenschwander et al. 2007). She also said, she tries to exaggerate about her student powerful points as well, in order to raise her confidence. Emphasizing on students' abilities is crucial; some of the students have less self-efficacy because of not having a good image from themselves and their abilities (Dörnyei and Chan, 2013).

None of the parents experienced any type of training provided by the school about parenting at home. However, they mentioned that in case of asking any question regarding these types of issues from the teachers or administration, they explain it very well. However, one of the parents referred to school orientation day and said that the principle mentioned that parents should be careful to provide their children with healthy breakfast and preventing from eating junk food. All parents agreed that should ask students to study in proper time, not early morning or late at night, or when they are tired. Three of them argued about the importance of providing a safe and emotionally warm and supportive environment at home for their children. They also spoke about their relationship with their children at home. Two of the parents preferred to put students in more pressure at home and they mentioned they use a serious type of language with students when it comes to their study, while two others believe that the type of language they use should be full of respect because for them growth of students' personality is more important than their grade.

> "… For me, it is very important to be my daughter's friend… More than her grade, her personality is important to me. I always give a space to my child to express her opinion and I respect her opinion. I want to show her that I respect her and always talk with a soft and friendly language with her."

One of the ways of parental involvement in middle school is supervising students' behaviour and activities (Kerr & Stattin 2000; Dishion et al. 2012). Accordingly, as in this age, 30% of students' interaction would be with peer groups (Rubin, Bukowski & Parker 2006); an important element is monitoring students' relationship by parents (Garbacz et al. 2017). Despite emphasize of scholars on the importance of directing students' relationship as is discussed above, this point is not stated by any of the interviewees. Only one of them, to some extent, indirectly mentioned negative effect of some of

the behaviours and relationships when she explained about her reaction when someone bullying her daughter. However, this matter did not happened to her daughter in relation to her direct peer group.

Communication between parents and school

All the parents were in touch with students' school via different ways, like manage back system (a webpage in which all parents, students and teachers have an account and access to the page). All information is provided there like students' grades, schedule for the week, homework, deadlines, events, and projects. What is more, students educational progress in excel file would be sent to parents via email. Few times a year, there would be school-parents' conferences. All parents mentioned that they participate in them but they did not show interest in being a part of school-parents association. Some because they believe no body hear their voices and some because of lack of time and other personal problems, while literature shows these types of involvement shape social capital for parents. Being connected to other parents and school staff via such programs can benefit students in different ways. For instance, it gives possibility to parents to be connected to other resources and accordingly, make potential support for students in after school academic successes (Kimelberg 2014). There would be some events that parents are invited to participate as well, like international day or sport's day. Two of the interviewees said for sure they participate in this event even if managing to attend is difficult for them but two of them said they mostly participate but not always. Sometimes, they cannot make it because of private reasons like having infant at home or some other personal businesses.

One of the interviewees mentioned that she receives texts and phone calls from some of the teachers when her daughter is performing weak in one of the courses but others said they receive call just in emergency cases like when their child is absent without informing in advance or when something happens in school for example if suddenly student face a difficulty. They all agree that face-to-face interaction is more efficient but for some of them it is difficult to go to school regularly because of their personal life barriers like lack of time and also they feel it is not necessary to check the schools regularly because all educational information is provided for them in website and they are following their children performance from far. Rather than attending teacher-parent conferences and events, they just go to school when their children face an important issue.

> "I am always in touch with her school; always receiving their emails and mange back is very good. Everything is there; their grades, homework and projects. I go to school just when something very critical happened to my daughter. Behavioural points are essential for me. Once upper grade students were bulling her and as soon as she told me, the day after I went to her principle …"

One of the parents said she sometimes go for visiting teachers to ask them about the best ways of planning for studying for specific course. Three of them said their relation with principle team is very limited. They just greet with them and more connection seems unnecessary because mostly by referring to teachers and head teachers, can receive enough support. Thus, they do not feel a need to refer to principle for their inquiries.

Parents' involvement in classroom and school activities

They all agreed that in their school, there is no place for parents to be involved with classroom activities and they themselves also never thought about having desire to share in this part. They do not find themselves authorized for this type of involvement. They mentioned they do not have desire to decide for a teacher how to act or even participate in any activity. They are never asked to do such activities and they never suggested having a right in participating in classroom activities. They just can comment on the classroom function and activities. In contrast with the result of this study, some parents like to be involved in decision-making, school, and class planning (DeLaney 1997). The result of this study supports the idea of some of the scholars who argue sharing parents in decision-making is not appropriate, as they do not have desire for this type of involvement (Brown et al. 1994). In contrast, there is another idea, which discuss that parents should be involved in decision making because in this way chance of parents home and school involvement would be increased (Williams and Sanchez 2011).

> "Nothing related to parents' involvement in classroom is defined by the school chart. Classroom system is a complete one that does not need our involvement I think. But students themselves are asked to participate in classroom activities even once they were asked to help in colouring their classroom."

Regarding school activities they said whenever they are asked to participate, they did it, like involvement in events such as, sport's day or international day.

> "… In international day, I always make food of the country my baby is presenting and take it to them."

Challenges for parental involvement

As was mentioned in previous parts, all the parents explained about personal problems and barriers that sometimes does not give them chance of having face-to-face interactions with school. Two of them agreed that whatever the problem is could not stop them from participating however. They see face-to-face communication with students' school as a part of helping their students to reach success.

> "… No reason is accepted for not participating in conferences and events. I think some parents who do not participate, are not aware that this participation is related to their children success."

One important element that sometimes does not let parents to participate is school staffs' behaviour. If they do not care about parents' comments or if they do not talk with parents by respect, parents would get disappointed. Only one of them said, sometimes she cannot understand her student's textbook and cannot help her in her study. She emphasized that level of knowledge of parents and their level of welfare can be a very important barrier for lack of parental involvement. Another parent also mentioned that because she is not breadwinner, she could put her time and energy for studying alongside with her child. By this way, she follows her student's academic situation.

> "I don't understand her text book some times. I could understand before, when she was in elementary I used to practice with her everyday but now I cannot. I cannot even go and read about it to be able to help her because I am also working. I think first they need to live well and have good food."

The mentioned barriers are same as what is already conducted by other scholars regarding barriers for parental involvement, like economic problems, time management (Cooper & Crosnoe 2007) and staffs' bad behaviour (Harry 1992). Williams and Sanchez (2011) count some other challenges as well which is not introduced as a barrier for parents in this study like parents' disability. By considering theory of planned behaviour (Ajzen 1991) can argue that barriers for parents in this study is in controlling factors and their believes, not in subjective norms. It is argued that rising quality and quantity of contacting parents by schools can raise parental involvement and can be counted as a solution for facing the existed challenges (Williams and Sanchez 2011).

All of them knew the importance of their role as parent for their children education. However, they felt educational progress of students is more related to school and their role is to just follow students' academic growth and be aware of what is going on in their school. Three of them, several times, mentioned that, their support for their students is a key for their future success. By this support, they can make a better person for the society.

Discussion

Parents' involvements include different activities, both in home and at the school. These research's findings are in line with some parts of theory of Epstein (1995); home parenting, making an efficient communication with students and their schools is counted as parental involvement duty by parents. While, parents are not able to participate in decision-making and they do not see the desire in themselves

to be a part of decision-making process or to be active in class activities. Thus, in this area, their attitude is controlling their involvement (Ajzen 1991). Besides, they did not know that participating in community services could be related to parental involvement. Additionally, the result of this research is in contrast with Drabool (1994) idea that in UAE, parents mostly are parents at home and do not take this responsibility beyond that and are not involved in school activities.

All parents had a deep understanding about the importance of their involvement for their student educational and social success. As is discussed by scholars (Epstein and Connors 1995), high level of parental involvement seems more necessary in elementary levels than in higher levels while in higher levels the important point is to know that which forms of parental involvement is important and how parents should shift their involvement type. Based on the results of this research, parents' guide their students indirectly in this level. They do not sit beside students to study with them or to help them in their homework. They mostly referred to their parental duty as mentoring students and guiding them. Moreover, mostly, students in this level are expected to do their personal school preparation themselves.

Parents said their support for their students would be more directly when students are weak in one subject. In this case, they try to cooperate with students by helping them to work on their weaknesses. In this way, gradually would make a positive self-image for them. Too many times, students' self-efficacy level is down because they do not have a positive image from themselves that act like an empowering motor for motivation them (Dörnyei and Chan, 2013).

Ajzan (1991) argues controlling factors are one of the reasons against parental involvement. Some of the challenges that were mentioned by parents in this study are personal life barriers like economic status and lack of time. Previous studies also indicate that lack of time is a big barrier for parents' involvement (DCF-00924-2008 cited in Karıbayeva & Boğar 2014). It should be mentioned however, two of the parents said that no barrier could be an excuse for not being an active parent. They all agreed that one of the barriers that can forbid them to be active is bad behaviour of staff and the feeling that nobody cares about their comments.

Key findings

Findings of this research successfully answered the research questions. In effort for answering research question number one about ways of parental involvement in Dubai private middle schools, can argue that parental involvement covers a range of responsibilities. Such as, participating in events and parents-teachers' conferences, following students' educational progress by checking students' grades, mentoring students' activities by being involved in assessment related websites like Manage back, providing safe environment for children in home, and supporting them emotionally. In middle school,

parents tend to mentor their children instead of guiding them in a direct way, except when students are weak in one area that in this situation, the help would be more direct.

As was explained earlier, in effort to answer research question number two, discovered that parents are aware about the importance of their role in their students' academic success. Yet, they see school's role more essential for their students' success. In response to question number three, the results of this research indicated that there are some challenges and barriers for parental involvement like school staffs' bad behaviour and ignorance, economic problems and poverty, and time management.

Conclusion

This study would benefit both parents and specially schools to draw more attention to parental involvement issue. The results of this study can be implemented by schools to provide parents with more information regarding the importance of their involvement for the progress of their children, especially in some areas that they do not believe their desire to be involved, like participation in class activities. Significance of this study is filling a gap in the literature due to the limited number of studies (Al-Taneiji 2001 cited in Al-Taneiji 2008) in parents' involvement in Dubai.

This research has some limitations: the information gathered in this research cannot be generalized. By doing quantitative research like survey and choosing a representative sample can generalize the result of the study (Cohen, Manion & Morrison 2011). Furthermore, this study focused on parents' perspective only and did not seek to know view of teachers, students and school administrators. Scope of this study was private middle schools of Dubai. Further researches can focus on secondary or elementary and governmental school. The other factor, which is not considered in this study, is the effect of some of the demographic information on parents' involvement like students' gender or parents' background.

In conclusion, this qualitative case study by conducting semi-structured interview with parents explored their awareness and ways of their involvement in the private middle school in Dubai. Results of this study showed parents are aware of the importance of their involvement for their children's success. They mostly are involved in home parenting, mentoring their children educational progress, and building a good relationship with students and their schools. Sometimes, some challenges occur that prevent parental involvement however. Parents believe that their support for students in upper grades is related to student achievement. Even though, the form of their involvement in the middle school is different from lower grades.

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Appendix

Interview guide

1. What do you do to prepare your child for school?
2. How do you help your child with her/his homework?
3. What do you do at home to make sure that your children will do their best in school?
4. Does the school tell you how you can help your children with their learning?

B. Communication between School and Parents

1. How do teachers contact you?

2. Why do teachers contact you?

3. What do you think is the best way to contact you?

4. Do you contact teachers?

5. What are you seeking when you contact teachers?

6. Do you contact the principal?

7. What are you seeking when you contact the principals?

C. Parents' involvement in Classroom and School Activities

1. How often do you attend your child's classroom activities?

2. What do you think you are able to offer in the classroom?

3. How do you think teachers would respond if you ask to be involved in classroom activities?

4. How often do you visit your child's school?

5. What might keep you from attending school activities?

6. How do you want to participate in school activities?

D. Helping Children with the Learning at home

1. Do contact teachers to know how you can help your children with homework or any required activity?

E. Involving Parents in Decision Making

1. Are you a member of PTA?

_If not, what keeps you from participating in PTA?

2. How does this association influence the school?

3. If you participated in PTA, what kinds of decisions do you want to make for the school?

F. Bringing Schools and Parents together to get Community Organizations' Support (funding activities, materials, and sneakers)

1. Do you work to get community organizations to support the school?
2. If so, in what ways?
3. If not, what should be done?

G. General Questions

1. Do you want to be involved more with school? Why do you want to be involved in the school? What could keep you from being involved with school?

2. How can schools facilitate parental involvement?

3. What are the challenges and difficulties that you face while your involvement?